Michael B. Paulsen
Editor

Higher Education: Handbook of Theory and Research

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Higher Education: Handbook of Theory and Research

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Katherine E. Chaddock is Distinguished Professor Emeritus at the University of South Carolina. She is the author and co-author of six books and many articles on institutions and educators prominent in higher education during the nineteenth and early twentieth centuries. After earning degrees from Northwestern University, the University of Southern California, and the University of Utah, her career included work first as a university administrator and then as a faculty member teaching higher education history, philosophy, and policy. Retired in 2014, she continues to research and write historical nonfiction.

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Anna Janosik Cooke holds a Masters of Public Administration degree from the University of South Carolina where she also received her undergraduate degree in History and Political Science. She has written in the areas of educational philanthropy and history and continues to research in Southern educational history, early modern British history, and political theory. She resides with her husband in Nashville, Tennessee.

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Dr. Pilar Mendoza is an Associate Professor of Higher Education in the Department of Educational Leadership and Policy Analysis at the University of Missouri Columbia. Her research focuses on comparative studies of academic capitalism and its implications to the academic profession, production of knowledge, graduate education as well as to issues of affordability and retention. Dr. Mendoza is part of the leading teams of two multi-university projects for the development of higher education in Latin America and the Caribbean sponsored by USAID-HED and the Ford Foundation.

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Robert T. Palmer is an active researcher and Assistant Professor of Student Affairs Administration at the State University of New York at Binghamton. His research examines issues of access, equity, retention, persistence, and the college experience

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Chapter 1
A Memoir of My Professional Life: What I Can Remember and What I Can Tell

Kenneth A. Feldman

I did not jump at the chance to write this memoir of my professional life. Indeed, each time John Smart, the former (and long-standing) editor of this handbook asked me—usually informally but at least once formally—whether I might be interested in writing such a memoir, my answer was some variation of "no." When, in the late spring of 2013, Michael Paulsen, the new editor of this handbook, sent me another formal invitation I was in something of a quandary. If I did accept (which I was now inclined to do), what could I even remember; and of the things I could remember, which ones should be made public? What would be worth telling about? How can one judge one's own contribution to the field of higher education? How generalizable is one's own story, and does generalizability even matter? What personal warts would I want to display? And on and on and on. When I consulted with my wife, June, about accepting the invitation, her response was immediate and brief: "Do it." Still, I continued pondering. After a while, I finally decided to put aside all my qualms, said "yes" to the invitation, and got down to business dredging up, reviewing, and writing about some of my activities over the years.

The bulk of my adult life has been devoted primarily to my family, to Stony Brook University (especially its sociology department), and to research and scholarship in the field of higher education. While I will obviously have some things to say about the first two areas, I will be concentrating on the third area. To the extent that I have contributed to (and made a mark on) the field of higher education, it is largely through my writings and related pursuits. This being the case, I will be looking at this scholarly work with some attention to its substance.

Rather than engaging in a strictly chronological trek from my early to later years, I believe it would be of more interest to begin with the two-volume book,

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"The Impact of College on Students," which Theodore Newcomb and I published in 1969 (Feldman & Newcomb, 1969), 4 years after I finished my doctorate in social psychology at the University of Michigan. It was this book, after all, that established my presence in the field of higher education and helped to determine the path my career was to take. After relating some of the ins and outs of writing this book, hereafter referred to as the Impacts book, I will move back to earlier times in my life and then forward to the years following the book's publication.

Hitting the Ground Running: The Impacts Book (1965–1969)

I was not in on the very most beginnings of the Impacts book. In 1964, the Carnegie Foundation for the Advancement of Teaching contacted Theodore Newcomb to suggest he apply for funding of a project of his choice on the study or practice of higher education. Naturally, the Foundation could not guarantee that his proposed project would be funded; nevertheless, it did want to encourage him to submit a proposal. Ted explained to the Foundation that, given his already full load of other projects and obligations, for him even to think about and write a proposal for another project, much less actually engage in it were he to receive funding, would be more than he could do alone. He told the Foundation he would like to ask a certain graduate student he had in mind, one who was close to finishing his PhD in the Social Psychology Program at Michigan, whether he would be interested in working with him on proposing a project to Carnegie. And so it was that I was asked to join an intellectual and research adventure that eventually produced the Impacts book published in 1969 by Jossey-Bass Publishers.

Staff members at Carnegie had thought of some projects they believed would be worthwhile, and they had passed these along to Ted for his consideration—grist for the mill, as it were. I can remember three of the four or five suggested projects: (1) planning and executing a national conference (with invited papers) on a topic or issue of particular importance to higher education; (2) a "survey of cases and practices"—that is, surveying the variety of institutional responses to student behavior as well as the different experimental programs designed to alleviate certain problems that were identified; and (3) collecting and systematizing the growing knowledge about the impact of college on a variety of student characteristics. Thus it was the Foundation that in essence suggested the integration or synthesis of the research on college impacts on students—a project that Ted and I found fascinating to think about and the one we eventually embraced wholeheartedly. We did write a proposal for this particular project, and it did get funded. We started our project in earnest in the fall of 1965, just after I finished and defended my dissertation.

And so it was that I remained at the University of Michigan, with a joint appointment as a Study Director at the Institute of Social Research and a position in the Sociology Department (first as a Lecturer in Sociology for two semesters and an Assistant Professor for three semesters) with minimal teaching responsibilities. During that time, I lived and breathed the Carnegie project, clichéd as that might

sound. I could not escape its "pull" on me. Even though I was newly married (for about a year) when Ted and I first started our work in the fall, I worked on the project whenever possible, including as many hours during weekends that I could cram in while still having a meaningful marital life, a social and cultural life, and the like. I remember always having two goals in mind for the finished product: It had to be good in itself, and it had to be useful to the field of higher education.

Past literature reviews and bibliographies were particularly useful in compiling our initial list of material to be read. To keep abreast of the latest research, we relied heavily on the continuing issues of "College Student Personnel Abstracts." We also wrote to some 500 individuals and institutions, requesting whatever bibliographic aid they might be able to supply. As we read, abstracted, indexed, and analyzed any given piece, we made a point of tracking down any references given in that item that seemed to be relevant to our topic. After a year and a half of this, we found very little in the way of "new" references that we had not already come across and considered in one respect or another. Our collection of materials—both published and unpublished items—was done well before resources were readily available from the Internet. What seemed like endless trips to the library were made in order to take out relevant books, to make Xerox copies of journal articles, and to arrange for and read microprints and microfiches of various reports, and related material.

To help us with the project, we were fortunate in having two highly capable graduate students as research assistants. Not only did Stanley Morse share the task of gathering and abstracting selected material for our book, but also his subsequent analyses and thoughts interacted with our own. In the year that Walter Swap was with us he focused primarily on the initial compilation and interpretation of information dealing with the impacts of major fields, which formed the basis of our analysis in Chap. 6 of the book. Judith Vartanian was absolutely indefatigable in virtually every aspect of the gathering of bibliographic materials as well as in the editing and typing of the many drafts through which our initial report was forged.

Although I wrote the first drafts of most (but not all) of the chapters of the initial report, each of the initial drafts, regardless of who wrote them, occasioned much mutual rethinking and shared re-writing. When Ted and I began our collaboration, I was a young whippersnapper in my late twenties and he a late-middle-aged whippersnapper. Despite the differences in our age and status in the field—or perhaps because of these differences—our collaboration went smoothly. As far as I can remember, Ted and I had only one major disagreement. One day we found ourselves at loggerheads about the exact meaning of the "accentuation effect" we were positing in the book. As we debated, Ted became increasingly exasperated. Finally, he stopped arguing, looked at me, and said quietly, with a mixture of sly humor, some agitation, and perhaps a touch of anger, "Ken, let's quit now, and each of us go home and pray to God, and maybe one of us will find some humility." I am not at liberty to report whether either of us ever did.

Ours was hardly the first attempt to analyze the impact of colleges on students by summarizing available research findings—some of the earlier efforts were listed in the report—but it was the most comprehensive and systematic syntheses of findings to its day. I know it may sound strange at this point to say that although I was

in part responsible for the push to comprehensiveness and systematic analysis, the scope of the project did worry me. I was concerned not so much with the effort required but by whether the final results would be too cumbersome. Despite the existing reviews of the relevant literature, there really was no good ready-made template for an analysis as large and comprehensive as ours. We had to work out a guiding conceptual and organizational framework—for which my knowledge of various sociological approaches and Ted's experience in the social psychology of higher education were crucial. While I might not go so far as to say that Ted and I provided "the first comprehensive conceptual map of generally uncharted terrain"—as Pascarella and Terenzini wrote in the preface to their 1991 book (Pascarella & Terenzini, 1991, p. xv)—I would say that we were successful in finding a conceptual and analytic framework that worked and made sense.

We finished our report to Carnegie in late fall of 1967. The Institute for Social Research produced a suitable number of offset-printed, spirally bound copies of the report for distribution. It was entitled, "The Impacts of Colleges Upon Their Students," and was subtitled, "A Report to the Carnegie Foundation for the Advancement of Teaching" (Newcomb & Feldman, 1968). Given the history of the project, it was to be expected that Ted was the first author and I the second. The date on the inside title page was January 1968, the very month that June and I moved to New York to begin our life at Stony Brook.

During the first 8 months or so of 1968, while I was at Stony Brook and Ted in Ann Arbor, we added a new chapter to the report (which became Chap. 9 of the Impacts book). We also revised the whole manuscript, getting it ready for commercial publication. When it was time to think about putting the report into book form—even before I left for Stony Brook—I approached Ted, with some trepidation I admit, and asked him what he thought about reversing the order of authorship for the published version. His reply was honest and characteristically charming. He said that if there were any way that he could justify his having first authorship he would take it, but he just could not think of a way. Thus the Feldman-Newcomb authorship was born.

At the time, McGraw-Hill generally published selected reports and studies sponsored by The Carnegie Commission of Higher Education and the Carnegie Foundation for the Advancement of teaching. So we sent off our finished manuscript to this publisher for its consideration. We were more than a little surprised that it was not accepted for publication. If my recall is accurate, its rejection had something to do with the manuscript being seen as not being cost-effective for publication. I will not go into my feelings at that point, but as it might be imagined they were far from happy ones.

We lost no time in sending our manuscript to Jossey-Bass Publishers, a new publishing company (established in 1968) that had just started to publish books in higher education. A short while later, I received a brief hand-written letter from Nevitt Sanford—a consultant for Jossey-Bass and a noted figure both in the field of psychology ("The Authoritarian Personality") and in the field of higher education ("The American College") (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Sanford, 1962). I was absolutely thrilled to learn from his letter that he liked the

manuscript very much and was recommending its publication. Thus, in 1969 "The Impact of College on Students" was published in two volumes: "An Analysis of Four Decades of Research" (Vol. 1) and "Summary Tables" (Vol. 2) (Feldman & Newcomb, 1969). To make the cost of the book less expensive, rather than setting Vol. 2 into print, Jossey-Bass used offset printing of our typed manuscript. It worked just fine.

Prequel: My Early Years

Before moving on to my Stony Brook years, let me back up to my early years before the Impacts book. I was born in Saginaw, Michigan, in 1937. When I was around 3 years old my family moved 15 miles north to Bay City, Michigan. This city is located near the base of the Saginaw Bay on Lake Huron—50 miles north of Flint, Michigan and 100 miles north of Detroit, Michigan. It had a population of roughly 50,000 in the 1940s and 1950s, but has declined to 35,000 since that peak.

As did other students living in my section of the city, I spent Kindergarten through the seventh grade in the same school, changed schools for the eighth grade, and changed schools once again when entering high school in the ninth grade. I cannot fault my public education, and received sound grounding in the basics. I always did very well in my classes. I had a facility for memorizing portions of whatever I read. It is not that I had an eidetic memory by any means, but that if I put in the effort I could memorize whatever I wanted to relatively easily. Thus I did well in classes. As I progressed through the levels of education, I had to work on interpreting and critically thinking about what I was reading rather than merely rote-memorizing it. This was harder to do.

At the same time that I was intent on doing well in school, I always wanted to "fit in"; even at an early age I developed a certain sense of humor that I felt would help me do so. As the years passed, I hoped that my humor was witty, or at least wry, but according to my daughter in her teen age and early adult years my humor was merely "corny." Now in her 40s, she says she appreciates my humor more than she did. (It is possible, of course, that she was right the first time.)

The architecture of Bay City Central High School, which I attended between 1951 and 1955, has a certain bearing on my story at this point. This school was originally constructed in 1922 as a two-story building, but not long afterwards a third floor was added in order to house the Bay City Junior College. When I went away to college in the fall of 1955, I did not really "go away" but simply moved up to the third floor of a building in which I had already spent 4 years on the first and second floors. On whichever floor I was located for my 6 years in this building, I found the teachers very much interested in students and in teaching. And I remained (as I was in elementary school) a highly dedicated student, determined to do well in every class. Because my family was far from affluent—my father was a janitor in a plant manufacturing automobile accessories and my mother was the main (executive) secretary in an insurance agency and later in an auto parts store—Bay

City Junior College was a way they could afford my first 2 years of college. They and I always planned that I would continue on with my college education after that. (I worked part-time in high school and college to help out.) In the same year that I graduated with an associate's degree from Bay City Junior College, incidentally, the voters of Saginaw, Midland and Bay counties formed a community college district and approved the construction of a new college, Delta Community College, which replaced Bay City Junior College. This community college, located southwest of Bay City, opened for classes in 1961 with 1,800 students and by the year 2000 had an enrollment of around 17,000 students.

When I really did go away to college, it was to the University of Michigan for the junior and senior years of my undergraduate education (1957–1959). To go from a very small junior college on the third floor of a building that housed my high school on its first and second floor to a very large state university was a shock; I expected it to be. I was more than a little "scared" for the first semester, but I adjusted fairly quickly. I found the sophistication of the university and of the city of Ann Arbor liberating, and loved my new circumstances. I never wanted to leave, and did not—at least not for 11 years. I tell people, tongue in cheek, that I stayed so long in Ann Arbor because I was a slow learner. In truth, I progressed in those 11 years from an undergraduate student to an assistant professor in the sociology department at the University of Michigan (and a study director at the Institute for Social Research). Here is how it happened.

When I transferred to University of Michigan, I had to pick a major. I toyed with majoring in psychology, but instead majored in pre-legal studies (a mixture of relevant courses from different departments) thinking that I would like to become a lawyer. During my senior year, however, I decided I would like to become a college teacher. At that point, my thought was to get a master's degree in sociology (which I always liked, along with psychology) and get a position at a junior college. I only applied to, and was accepted by, the graduate program in sociology at University of Michigan. Naively, I did not apply for an assistantship or fellowship for the first year of graduate school (a lapse that I remedied in the years to follow by applying for and receiving different teaching and research assistantships as well as fellowships).

In my first year of graduate work in the sociology department, my values and motivations changed enough for me to realize that I wanted to teach at the college or university level rather than at the junior college level. I also realized that as much as I liked sociology, I missed the psychological approach. So, as I was finishing my master's degree in sociology, I applied to and was accepted by the social psychology program at the University of Michigan. This well-known and highly regarded joint doctoral program, founded by Theodore M. Newcomb in 1946, accepted only students who had (or were close to receiving) master's degrees (or equivalent). Students in the program took graduate courses in both the sociology and psychology departments as well as proseminars in social psychology—the latter being taught by the likes of Guy E. Swanson, Daniel Katz, Dorwin (Doc) Cartwright, and Helen Peak, as well as Newcomb. I enjoyed the social psychology program tremendously, and could say much about it. For present purposes, however, I want to focus only on its importance in my becoming acquainted with Ted Newcomb, who was chair of the program.

In my first semester in the program (in the Fall of 1960), I took a proseminar led by Newcomb. I did not particularly stand out in the class in any way, and I remember being rather quiet in it. So I was more than a little surprised when the next semester Newcomb contacted me and asked to see me in his office. Newcomb, who was one of the main pioneers in the establishment of the field of social psychology, was widely known and admired in the social sciences. I knew about his many achievements, such as: his early research on students at Bennington (which came to be known as the Bennington Study); his establishment of the influential joint doctoral program in psychology and sociology; his publication of a particularly popular basic textbook in social psychology (Newcomb, 1950); his theoretical work on basic principles of cognitive balance connected with interpersonal attraction; and his Group House project, data from which was eventually the basis for "The Acquaintance Process" (Newcomb, 1961). (These and many of his other accomplishments are detailed in an excellent biographical memoir written by Philip Converse for the National Academy of Science [Converse, 1994]).

When I met Ted in his office, curious about why he wanted to talk to me, he asked me to be one of his two teaching assistants for a large undergraduate introductory social psychology course he would be teaching the following fall semester (1961). He would be giving one lecture each week to the entire class, and then his teaching assistants would each lead a smaller discussion group twice a week. When he asked me to be one of his two teaching assistants, my immediate thought was that I had been in the social psychology program for less than a year and I did not feel I knew enough to be a teaching assistant. So I declined his offer. Because Newcomb carried the mantel of his many achievements so lightly, I was not prepared for—and was even taken aback by—the uncharacteristic tone and demeanor of his response to my saying "no" to his offer. "Ken," he said, "the graduate students in this program are lined up around the block to be my teaching assistant and I've asked you, so you can't say 'no'." Well, since I could not say "no," I said "yes." Agreeing to be his teaching assistant turned out to be a major turning point in my life, although I could not know at the time just how major.

Conducting the two recitation sections each week was my first experience with college teaching. I took to it immediately, and still am enthusiastic about teaching some 53 years later (as of this writing). At the time, Ted was using in his class a draft version of his new social psychology textbook (written with Ralph Turner of Oberlin College and Philip Converse of the University of Michigan). He was eager for me to report how students liked it and also to let him know any of my own thoughts about it. I took this request seriously by passing on to him students' comments on the textbook as well as giving him any advice I had about its contents. I continued to be his teaching assistant for two more semesters (spring and fall of 1962). As he and his associates continued to work on the new textbook, I continued to offer any comments I had.

My association with Ted hardly ended with my teaching assistantship. He and Gerald Gurin (who at the time was a study director at the Institute for Social Research) asked me to join the Michigan Student Study (as an assistant study director). This project that they were heading was a large-scale study of students

at the University of Michigan and their experiences at the university. I was involved with others on the project—primarily Patricia Gurin and John O'Connor—in constructing the extensive interview questionnaire for the study and in training interviewers. I was also able to add a few questions on the interview schedule about students' type of commitment to social norms and the child-rearing practices of their parents, which data formed the basis of my dissertation (Feldman, 1966). (I received my doctorate degree in 1965, with Ted as the chair of my dissertation committee; the other members of the committee were Robert Cooley Angell from the sociology department and William Hays and Daniel Katz from the psychology department.)

Some time before Ted's textbook was to be published (Newcomb, Turner, & Converse, 1965), he asked me whether I would be interested in writing a study guide to accompany the textbook. I said yes, provided that I could work with another graduate student, John O'Connor, who was also in the social psychology program and a close friend. At that time, unlike today, graduate students were not expected routinely to have publications when they graduated, nor did many of them have any. I thought it might be a good opportunity to try my hand at writing something other than class papers or a dissertation. John and I worked together part-time for at least 6 months, producing a study guide of which we were proud. Study guides at the time were generally pedestrian in nature. We tried to be more imaginative. For each chapter of the textbook, we came up with a diagrammatic outline (visual overview), a matching exercise for the concepts of the chapter, multiple-choice questions on factual and theoretical content, brief (reprinted) selections from other sources (other texts, literature, etc.) with multiple choice questions about these selections, discussions questions, textbook-like extensions supplementing the chapter, and informal research exercises in social psychology. Because I was still working for the Michigan Student Study, progress on writing my dissertation was slowed up, but I felt it was worth it. The study guide in fact was my first professional publication (Feldman & O'Connor, 1965), and I was hooked.

Roughly framing the beginning and ending of my years as a graduate student was a major event in my personal life—meeting and eventually marrying June Tiefenbrun. During my very first year in graduate school in the master's program in sociology (1959–1960), as required I was enrolled in a two-semester practicum associated with the Detroit Area Study. Typically each year a professor—Harold Wilensky, in the year I was in the program—was authorized to conduct a sample survey on a subject bearing on his or her professional interest (work and leisure in Wilensky's case) for which interview data would be necessary. The students in the class received training in survey research by participating in the planning and construction of the interview schedules, actually conducting interviews in Detroit (along with a small cadre of professional interviewers), coding the completed interview schedules for quantitative analysis, and writing individual reports on some aspect of the investigation (which could count as their master's thesis).

It was in this practicum that I met June, who was a senior undergraduate majoring in sociology. She was taking the practicum as part of the senior honors program. I found her an interesting, bright, and very pretty young woman. She was an out-of-state student from New York (the Bronx) who had attended the Bronx High School

of Science. We went out a couple of times. I enjoyed her company, but no great sparks were generated. At the end of the spring semester (1960) of that school year, when she graduated with her undergraduate degree, she left the university to return to New York City. In the fall of 1960, she attended Columbia University where she obtained her master's degree in social work in the spring of 1962. I thought it unlikely that I would see her again after she left Ann Arbor.

In the summer of 1962, much to my surprise and quite by chance, I bumped into June on the main diagonal (called The Diag) of main campus. She was visiting Ann Arbor for a week or two on vacation (and staying with friends). After chatting for a while, I said to her, "I have nothing better to do, would you like to go to dinner with me tonight." (Some invitation! What was I? A tenth grader?) She said she could not because she was busy. And that was that, or so I thought. (At some point in later years, she confided to me that she had not been busy at all, but she was not about to accept such a gauche dinner invitation.) A year after our accidental meeting, when she was once again visiting Ann Arbor in the summer of 1963 to see friends, she called me up to say hello. By that time, I had wised up enough to say, "I really would like to take you to dinner if you're free." And so we went to dinner. One thing led to another, including sparks. We became engaged that same year and were married less than a year after that (in June 1964). We lived in Ann Arbor while I finished my dissertation and then worked with Ted on the report to the Carnegie Foundation. (Let me interject here that we are still married some 50 years later as of this writing, so the marriage seems to have taken.)

In the fall of 1966, even while I was working on the report to Carnegie, I knew it was time for me to start looking for employment at a university after I left Michigan. Although I was as assistant professor on a tenure track (with a joint appointment as a Study Director at the Institute of Social Research), I did not actively consider eventually putting myself up for associate professor with tenure. It was time to move on. I only considered sociology departments in my search, although with a degree from the social psychology program either a sociology or psychology department would be open to me. I was new to the recruiting process. Nowadays, many academic departments (including Stony Brook) prepare their students for job interviews, but this was not true in my day—at least not at the University of Michigan. I blundered through at least two of my interviews and did well in others.

I ended up having two offers that I seriously considered: Santa Barbara and Stony Brook. I picked Stony Brook for several reasons: I really liked the members of the department when I visited, and they seemed to appreciate my interests and talents; for some time—probably since high school—I dreamed about one day being in or near New York City, accessible to its theatre, museums, and other cultural attractions; and June's father, step mother, one of her aunts (who in effect became like a mother to her when her own mother died when June was only 15), her brother and sister-in-law, and still other relatives lived in the wider New York metropolitan area. Realizing that I would need to stay in Ann Arbor for the fall of 1967 to finish our initial report to the Carnegie Foundation, I accepted a lead appointment and agreed to start working at Stony Brook in the spring semester of 1968.

Starting Out at Stony Brook: Offshoots and Related Matters

It was hard to break away from Ann Arbor and the University of Michigan, but my new surroundings and circumstances at Stony Brook were exciting, which definitely helped a lot. My first 7 years or so at Stony Brook were productive ones on more than one front. As I now look back on those days, I wonder how I got so much done on all these fronts. I must have moved more quickly in those days, and I mean more than physically.

On the Home Front

Before moving from Michigan to New York in January 1968, June and I bought a home in Setauket, a hamlet immediately adjacent to the hamlet of Stony Brook where the State University of New York at Stony Brook (now called Stony Brook University) is located. June continued her career as a social worker, which she had started in New York and then pursued in Ann Arbor. Once we felt settled in, we decided to start our family, a life-changing decision as is well known. Elena Kay was born in May of 1970 and Daniel Jason in March of 1972. They are now in their 40s, and we are very proud of them. Elena married Thomas Clouser, Jr. in 2000; they have one child (Tobin). Daniel married Erin Kenny in 2004, and they have three children (Ronan, Shannon, and Rory).

Like all parents I suppose, I have many stories about them. I will limit myself to one—one that is especially connected to my professional life. Both Elena and Daniel went to good colleges—Washington University in St. Louis and Emory College, respectively. Each of them took an introductory course in sociology. Unbeknownst to one another, in different years they phoned home when they were preparing for their first exam in the course. Each said to me something like, "Dad I'm worried about the first exam in my introductory sociology course. There are kids in the class who find the material hard and have trouble understanding it. I find the material so easy that I'm worried that I'm missing something and not preparing well enough for the exam." I told each not to worry. I said that I was sure that there was no hidden subtext that they were missing. If they found the material easy, then it was. They each got an A on the first exam. Some time later, I talked to each of them— again separately. I reminded each of them that when they were growing up I did not particularly talk to them about what I taught; I did not engage in formal (or even informal) lectures in sociology at the dinner table. Each of them said to me in their own way that they knew that, but that they recognized that the approach being taken in the sociology course was the same approach or way of looking at things that both I (and June) often times took when discussing with them their personal problems and experiences (or even matters of wider interest). They were accustomed to the particular approach or way of thinking, and so the course seemed easy to them. Since I teach about socialization in certain of my classes, I should not have been surprised by any of this but I was—a reminder to me that parents really do influence or affect their children even when they think they are not.

On the Job Front

The State University of New York at Stony Brook (or SUNY at Stony Brook) was founded in 1957 in Oyster Bay, Long Island, as the State University College on Long Island. What would become the current research university moved to Stony Brook in 1962. So when I came to this university—now more commonly called Stony Brook University—at the beginning of 1968, I was close to being in on the ground floor of the university at its present location. These were busy times for the university as it grew steadily to a much larger size. In 1968 the campus had around 7,000 students (undergraduate and graduate students). Today it has over 25,000 undergraduate and graduate students. It has been exciting to be part of this growth, especially in its early years.

When I arrived at Stony Brook, if memory serves, the sociology department had seven full-time faculty members: Andrew Collver; Norman Goodman; James Hudson; Gladys Lang; Kurt Lang; Ned Polsky; and Hanan Selvin. I felt very much supported by these colleagues, and really liked working in the department. The department's roster of full-time faculty rather quickly doubled in size, and continued to increase in number after that. The department started its graduate program with three students in the fall semester of 1967 (the semester before I arrived); this program also quickly grew in size. I started teaching a full-load (for a research university) of undergraduate and graduate courses. By the end of 1975, I had established and already taught all but one of the main undergraduate courses I was to continue to teach—with varying frequencies—at Stony Brook: introductory social psychology; sociology of youth; sociology of education; and sociology of identity. At the graduate level I primarily taught a course called "Socialization and Self," which I also continued to teach in later years.

During these early years there was much administrative and committee work to be done both in the department and at the university. For two of these years (1972–1974), I was director of graduate studies for our department. In each of these years we accepted around 35 students into our graduate program, which kept me very busy. I will not go into my other committee activities in the sociology department, except to mention a couple of committees on which I served: the undergraduate committee; and the administrative council (the chairperson' advisory committee). At the university level, for several years I was a particularly active member of the Policy Committee of Stony Brook's School of Continuing Education (now the School of Professional Development).

On the Research and Scholarship Fronts

After arriving at Stony Brook at the beginning of 1968, much of my scholarly activity was initially involved in readying the Carnegie Report for publication in book form during the spring and summer months, as already described. After that, for the next several years, I worked on a number of articles and one collection of

readings that in one way or another were linked to the Impacts book. In essence, they were extensions, elaborations, and explorations of the themes of the book. The term "offshoots" might best describe them.

Asked by the editor of the *Review of Religious Research* to submit a piece based on the Impacts Book on the change and stability of students' religious orientations during college, I worked on such a piece (divided into two parts), which was accepted after peer review (Feldman, 1969a, 1970). Three other pieces (Feldman, 1969b, 1971a, 1971b), taken as a set, outlined the ways in which research on college impacts has been done, pointed out the theoretical orientations and the analytic strategies underlying studies of college students, and highlighted some of the concomitant methodological problems and research issues.

Hanan Selvin, the chair of the sociology department when I arrived at Stony Brook, suggested to me that I would be in a good position to put together a book of selected readings on higher education, which I did: "College and Student: Selected Readings in the Social Psychology of Higher Education" (Feldman, 1972a). The names of some of the section titles of the book suggest its linkage to the Impacts book: "Change and Stability during the College Years"; "Assessing the Influence of Different College Environments"; "The Student and College Substructures"; and "Students, Student Culture, and Teachers." I wrote rather lengthy introductions to each of the seven main sections of the book. I dedicated the book as follows: "To Theodore M. Newcomb, who has pioneered, endured and prevailed in the social psychology of higher education." Some may recognize this as a partial crib from the speech that William Faulkner gave at the Nobel Banquet in Stockholm in 1950 (upon winning the Nobel Prize for Literature in 1949), but it did seem to me to be altogether appropriate to honor Ted. Because the anthology had some 32 reprinted articles and reprint costs were likely to be considerable, I anticipated that finding a publisher would be difficult. And it surely was. At least 20 publishers rejected the manuscript, but I persevered until one day I received word from Pergamon Press that it had decided to publish the reader as part of its "Pergamon General Psychology Series."

I have more extended comments about three other pieces—still offshoots—I wrote during my first years at Stony Brook, each of which carved out areas that remained part of my scholarly consideration over the years. They have to do with the value of research integrations and syntheses, the workings of the accentuation effect, and approaches to the study of college student change and stability.

The Value of Research Integrations and Syntheses

After the publication of the Impacts book, two of my departmental colleagues—who were hired after I was (one of them at a more advanced level)—separately told me in so many words that I had wasted my time in working on and writing the book. In point of fact, those were the exact words of one of them; the words of my other colleague were pretty close to the same. To put the best face on it, it might well be that my colleagues were trying to be of help by attempting to push me to do

other kinds of scholarly work (most likely, original quantitative research). I am not absolutely sure what the "worst face" was (or would have been), but after all these years I do not see any point in dwelling on it. In any case, I do not want to give the wrong impression about the sociology department. Others in the department were clearly supportive of my efforts.

My two colleagues' remarks did get me thinking about the value of research integrations and syntheses. Nowadays—and for at least the past 30 years or more—systematic large-scale research integrations as well as meta-analyses are common, taken for granted, and generally considered worthwhile. Such was not exactly the case, however, in the 1960s when Ted and I began working on our project. I may be exaggerating a bit, but at that time the gold standard was original research (and usually quantitative research at that). Integrations of existing research were generally seen as secondary to so-called original research.

One of the articles I wrote after the Impacts book was published, was meant (at least in part) to defend systematic research synthesis and integrations as being "original" research in their own right. Although the title of my article, "Using the Work of Others" (Feldman, 1971c) was light-hearted, the intent of the piece was serious. Moreover, unknown to me, Light and Smith (1971) also were working on a similar piece. They, too, argued for the importance of systematic research integrations and information syntheses, while calling for increased attention to the distinctive methods, techniques and strategies involved. From the current vantage point, my own effort at illustrating some of these methods now seems rudimentary, although I did touch upon many of the basic concerns—including those of finding and selecting studies to be synthesized, handling the so-called file drawer problem, establishing a metric with which to compare separate pieces of research, and creating procedures for presenting results. Even Light and Smith's more technically sophisticated article was only a beginning, as evidenced by comparing it with Light's later work in collaboration with Pillemer (Light & Pillemer, 1982, 1984; Pillemer & Light, 1980).

As late as 1974, Taveggia could still write that social scientists "are only beginning to develop an understanding of the methodological problems involved in cumulating social researches, and we know even less about how this strategy relates to the generally agreed upon goal of theoretical development in the social sciences" (Taveggia, p. 399). Integrations and research syntheses—especially meta-analyses—came into their own with the work of Gene Glass (e.g., Glass, 1977; Glass, McGaw, & Smith, 1981; Smith & Glass, 1977) and Robert Rosenthal (e.g., Rosenthal, 1978; Rosenthal & Rubin, 1978a, 1978b). And by 1984, Harrison Cooper was able to insist that "locating and integrating separate research projects involves inferences as central to the validity of knowledge as the inferences involved in primary data interpretation" (Cooper, 1984, p. 10).

Meanwhile, the reception of the Impacts book was just about as positive as one could hope for, which reassured me that the book was of worth and useful to the field of higher education. Sales of the book were immediately brisk. Moreover, Elton and Smart (1983) found the Impacts book to be first in number of citations from 1968 through 1977 among 51 Carnegie-sponsored research publications

and 51 Jossey-Bass publications. Citations to the book remained high. Budd (1990), in comparing citation counts in all issues of *Journal of Higher Education*, *Research in Higher Education*, and *Review of Higher Education* for the years 1982–1987, report that the Impacts book tied for third in number of citations. Even two decades after that, Budd and Magnuson (2010) using all issues of the same three journals for the years 2001–2006, the Impacts book was tied for fifth place in the number of citations. In Pascarella and Terenzini's judgment, the book, as of 1991, was "a classic, a standard text in graduate courses dealing with college students, as well as a standard and frequently cited reference for scholars, students, and administrators of higher education" (Pascarella & Terenzini, 1991, p. xv). And I cannot resist mentioning that in 2001 the book was included in a list of 100 classic books in higher education, with the authors of the list noting the following about the book: "a pioneering work whose combination of thoughtfulness and breadth helped put higher education on the scholarly map as a legitimate, coherent field of study" (Fincher, Keller, Bogue, and Thelin, 2001, p. 16).

The Accentuation Effect

Between 1971 and 1973, while teaching at Stony Brook, I was among a dozen or so researchers who were named research associates of the Institute of the American College Testing (ACT) Program in Iowa City, Iowa. We associates, along with a few invited others, participated in the institute's several interdisciplinary seminars that took place during these 2 years. My work with John Weiler (a graduate student in the Sociology Department at Stony Brook) took shape at this time, as encouraged and supported by the Institute. The article John and I produced (Feldman & Weiler, 1976), along with the work of a number of other associates of the Institute and participants in the seminars, eventually appeared in a book edited by three of the research associates (Sewell, Hauser, & Featherman, 1976).

To describe my work with John, let me start by noting that an important leitmotif of the Impacts book was the possibility and actuality of "accentuation effects" during college. The analysis in the book describes the accentuation effect in at least three different ways. The existence of these three meanings was not exactly hidden, but neither was it especially emphasized. Moreover, a fourth meaning was not considered at all. In our work, Weiler and I clarified the conceptual and operational meaning of "accentuation" as a construct. At a group level of analysis, accentuation is used to describe increases in existing (initial) differences among groups or categories of persons. To qualify as accentuation in this context, for instance, the average scores of individuals in the group on some characteristic must "pull apart" but the relative positions of the groups' averages must remain roughly the same. At an individual level of analysis, accentuation is used to describe an increase in emphasis of an already prominent characteristic of an individual. That is to say, a prominently "high" (or prominently "low") attribute of the individual becomes even higher (or lower). Ted and I incorporated both kinds of accentuation—"accentuation of (initial) differences among groups" and

"accentuation of an individual's (initially) prominent characteristics"—into our book. A third kind of accentuation, which entails the increasing dispersion or "pulling apart" of initial differences among individuals, is implicit but not named in parts of the Impacts book; Weiler and I called this phenomenon the "accentuation of (initial) differences among individuals." Having demarcated these three types of accentuation, we also noted the possibility of a fourth type: "accentuation of a group's (initially) prominent characteristics." In short, analysis can focus on change in initial differences (among either groups or individuals) or on change in initially prominent characteristics (of either groups or individuals).

John and I focused empirically on the accentuation of initial major-field differences on various self-description indices of students and on their scores on the scales of the Omnibus Personality Inventory. Some instances of this sort of accentuation were found, but so were certain other patterns of changes in initial differences among major fields. I was to return to the study of accentuation almost 25 years later—to be described later in this memoir—but obviously I did not know that part of my story when I was working with John.

Approaches to the Study of College Student Change and Stability

As I was working on the Carnegie report and the Impacts book, it became evident to me that much of the research in the area was being designed and interpreted more from a psychological perspective than from a sociological one. I elaborated on this observation in a piece published in 1972 (Feldman, 1972b). In this article, I noted that a psychological approach—in particular, a developmental approach—to the study of change and stability of college students, student outcome variables that are usually chosen are either direct "growth" variables (e.g., degree of maturity) or are characteristics presumably more or less directly interpretable in such terms. Although the social impetus for change may be analyzed, more systematic concern is paid to the psychological dynamics of change; environmental and social structural parameters tend to be considered (if at all) only in so far as they immediately impinge on personality development. By contrast, investigators with a sociological orientation tend to choose student outcome variables that are not necessarily interpretable in terms of maturity or personality growth, and their approach is considerably more on the structures and dynamics of social pressures impinging on students than (if at all) on the internal psychological dynamics initiating change or buttressing stability.

My interest in the contrast between psychological and sociological approaches was clearly strengthened (though not formed) by my days as a graduate student in the social psychology program at the University of Michigan. And this interest remains to this day. I was able to revisit the distinction between a psychological and sociological stance in a foreword to Pascarella and Terenzini's, 1991 book (Pascarella & Terenzini, 1991) as well as in an introduction to the 1994 Transaction Edition of the Impacts book (Feldman & Newcomb, 1994) and in a research article published with Peter Kaufman in 2004 (Kaufman & Feldman, 2004). I think it

makes sense to say something about these three writings at this point rather than to try to fit them into this memoir in strict chronological order of their publication.

Somewhere around the mid 1980s I received an unexpected letter from Allen Jossey-Bass (of Jossey-Bass Publishing). He had received a letter from Ernest Pascarella and Patrick Terenzini proposing an "update" to the Impacts book. He sent along a copy of their prospective for the proposed book for me to look over and give any thoughts I had. I knew these two researchers only from an article or two I had read of theirs; I had never met them. The prospective was well put together, and the proposed book seemed worth publishing though it clearly was going to take an approach different from the one that Ted and I took in our book. For instance, the bulk of our book was organized around how social structures and arrangements (the diversity of college majors, differences in residence groupings, student peer groups and subcultures cultures, etc.) affected college students, whereas their book was to be organized largely around how the individual characteristics of students (cognitive abilities, attitudes and values, moral development, etc.) are affected by the college experience. I did not see this difference as a problem, and I had no inclination whatsoever to undertake an update of the Impacts book. I communicated all this in my return letter to Allen Jossey-Bass. I cannot remember whether it was at my suggestion or Allen's for me to become a consulting editor for the Pascarella-Terenzini book. I was very excited to be able to read the book as it materialized in draft form and to offer comments, including a variety of editorial suggestions. It was more like fun than work. (It probably takes an academician to feel this way.)

In the foreword I wrote for the Pascarella-Terenzini book (Pascarella & Terenzini, 1991), I lauded it as "monumental, but ... accessible," as "indisputably a milestone in the analysis of college effects on students," and as "enormous value to researchers, educators, administrators, and others interested in higher education." In this foreword I also briefly pointed out the difference in analytic stance between the Impacts book and the Pascarella-Terenzini book, noting that a psychological orientation—in particular, a developmental perspective—is an important aspect of Pascarella and Terenzini's view of the interplay between student and college that subtly underlay their analysis of college student change and stability. Yet, as I noted, they were anything but doctrinaire or one-sided in their analysis. Indeed, their psychological approach was heavily tempered by considerations of the nature of interpersonal settings of colleges, the structural and organizational features of colleges' social environments, and the institutional characteristics of colleges. I then pointed out that Ted and I essentially took the reverse tack in synthesizing the research on college impacts. We heavily tempered our more sociological approach with psychological considerations. As I wrote further, "to put the matter in its briefest formulation, whereas Pascarella and Terenzini lean toward *psychological* social psychology, we leaned toward *sociological* social psychology" (Pascarella & Terenzini, p. xiii). Because this formulation put the matter a little too simply, I was pleased to be able to explore in more detail the distinction between the two social psychologies in the new introduction I wrote for the Transaction Edition of the Impacts book, which was reprinted and published in 1994 (Feldman & Newcomb, 1994) .

Finally, in the late 1990s and early 2000s, Peter Kaufman and I (Kaufman & Feldman, 2004) were able to base an analysis of identity formation in college on my 1972 article (Feldman, 1972b). In the mid-to-late 1990s, I was the main advisor (chair) for Peter's dissertation. Using data from 82 in-depth interviews with a randomly selected sample of college seniors (from a large northeastern public university), Peter's dissertation and immediately subsequent work was concerned with how college students reflexively monitor their social-structural reality and either produce or reproduce middle-class identities (Kaufman, 1999, 2003, 2005). In further analyzing the data Peter had collected, he and I used a perspective grounded in sociological social psychology to show how the experience of college plays an important constitutive role in forming the felt identities of students. We looked at three domains—intelligence and knowledgeability, occupations, and cosmopolitanism—in which college students were especially likely to acquire (or significantly modify) their felt identities. One of our aims to was demonstrate the sorts of information and insights that can be gained from a *non*developmental approach to the study of college student change.

Studying Teacher and Course Evaluations: Mid-1970s–Mid-1990s

After finishing the book of readings and various articles, all connected to the Impacts book in one way or another, I was uncertain about what scholarly activity to pursue next. Eventually I decided on exploring the literature on students' ratings or evaluations of their teachers and courses, although the initial path toward the series on teacher evaluations was hardly straightforward and even a little curious.

When I teach sociology of identity at the undergraduate level or socialization and self at the graduate level, the interconnection of identity, social interaction and social structure is at the heart of the course. Even when I teach introductory social psychology (at the undergraduate level), the study of identity is one important section of the course. Early in the series of class lectures and as part of the assigned readings on the topic of identity, I introduce the following analytic divisions: the person's felt identity (the self-concept); the person's claimed identity (presented self); the identity attributed or imputed to the person by others; and the perception by the person of the imputed or attributed identity of others.

At one point in the early 1970s, when I was talking to a graduate student who was acquainted with this analytic classification, she raised the possibility that a teacher who claimed the identity of a very good teacher (whether it was objectively so or not) was more like to be seen as such (an attributed identity) than were teachers who did not present themselves in such a way. And this difference in attributed identities would be reflected in the ratings of teachers. Being intrigued by this notion, I thought I might be able to write a little piece about it. I was not particularly acquainted with the literature on teacher evaluation. The topic was not part of the Impacts book except for two articles on student's listing of characteristics of good

teaching or their best teacher as related to major field (Feldman & Newcomb, 1969, pp. 255–257). What I thought I might do was to look at the relevant literature and analyze or re-interpret it in terms of claimed identity and attributed identity despite the research not being couched in this language.

So I began reading the scholarly and research literature on teacher and course ratings. Even though there was much research in this area, and even though there were relatively good reviews of it, I nevertheless found myself disappointed. There were inconsistencies, disagreements, analytic confusions, and the like. I could not quite tell what the field knew and what it did not. I thought that the field could use some clearing of the underbrush. I actually had this metaphor in my mind, although it probably is an incorrect one. Organizing a messy closet might have been a better metaphor. At any rate, I naively thought it might take an article or two to do this clearing or organizing and to synthesize the research in the area. It turned out that what I thought would take me a year or two to do occupied much of my time for 20 years, and I never did get back to the original conjecture about presented and attributed identities (which I no longer thought was true in any case).

As I began reading the available research, I soon realized that two questions usually had to be answered in synthesizing the research in an area of interest. What empirical associations could be found? Once these empirical connections were established, what did they mean? Neither question was necessarily easy to answer. To actually establish empirical associations could be time-consuming and difficult, and supplying meaning to the associations or connections could raise not-easy-to-solve issues.

As one instance, consider my first piece in the series, "Grades and College Students' Evaluations of Their Courses and Teachers" (Feldman, 1976a). In synthesizing the research in this area, I found that based on the available research both the anticipated and actual grades of college students were positively related to their evaluation of their courses and teachers. In general, the size of the association was small but not inconsequential. The question then arose as to whether grades were biasing the evaluations. To put the matter crudely, do students anticipating (or actually getting) higher grades "reward" the teacher with higher ratings and students who are anticipating (or getting) lower grades "punish" the teacher with lower ratings? This question, however, cannot be answered by only knowing the association between the two variables (grades and evaluations). For example, the student's interest in the subject matter of the course—either a stable interest or a teacher (or course)-induced interest—may produce a higher grade in the course and a higher teacher rating (and bias may not be involved at all). The matter is even more complicated than this, including the necessity of bringing in still other factors to be considered, as the article spells out. Few of the available studies considered and controlled for student interest in the course or other factors—either individually or simultaneously. This meant that from the available studies at the time, I was not able to conclude that the association between grades and teacher/course evaluation showed that grades biased evaluations, yet I could not rule out such a bias. However, I was able to point out the kinds of data that still needed to be gathered and the sorts of analyses that still needed to be done.

All told, I published 14 research syntheses and an "afterword" for one of them. They can be grouped into a smaller number of categories, as follows:

- Effective college teaching from the students' view (Feldman, 1976b) compared to the teacher's view (Feldman, 1988) and/or other sources of evaluation (Feldman, 1989b)
- Consistency and variability of students in rating their teachers (Feldman, 1977)
- Rating of teachers as related to various course characteristics and circumstances (Feldman, 1978, 1979, 1984)
- Evaluations of teachers as related to their seniority and experience, their research productivity, their personality and attitudes, and their gender (Feldman, 1983, 1986, 1987, 1992, 1993)
- Indicators of achievement of students and their evaluation of their teachers (1976a, 1989a, 1990)

Even as new projects began to materialize for me that did not involve teacher/course evaluation, I did grab on to two unexpected opportunities to work on new pieces on teacher and course evaluations. My goals in both of them were to overview and reflect upon my prior research syntheses in the area. I wanted to do so in ways that would be interesting and even a little provocative, which I saw as preferable to presenting a mechanical summary of my work on the topic. First, I was commissioned by the National Center on Post-secondary Teaching, Learning, and Assessment to present a paper at the Second AAHE (American Association for Higher Education) Conference on Faculty Roles, to be held in New Orleans in January 1994. Second, at a somewhat later time, I was invited to give an address (in conjunction with my receiving the Wilbert J. McKeachie Career Achievement Award) to be presented to the Special Interest Group on Faculty Evaluation and Development at the 1995 Annual Meeting of the American Educational Research Association.

After delivering these papers, I refined and expanded both of them for publication. The first of these pieces was published in 1997 (Feldman, 1997) as a chapter in a book of readings by Raymond Perry and John Smart (Perry & Smart, 1997). This chapter, "Identifying Exemplary Teachers and Teaching: Evidence from Student Ratings," first explored the various interpretations that can be made of information gathered from students about their teachers (which included a consideration of possible half-truths and myths that continued to circulate about teacher and course evaluations). It then analyzed the differential importance of different instructional dimensions to effective teaching. The chapter was reprinted in 2007 (Perry & Smart, 2007)—with a commentary and update written by Michael Theall and myself (Theall & Feldman, 2007).

The second of these pieces was published in 1998 in *Higher Education: Handbook of Theory and Research* (Feldman, 1998). I called it, "Reflections on the Study of Effective College Teaching and Student Ratings: One Continuing Quest and Two Unresolved Issues." I found this article particularly "difficult" to write, for it involved a great deal of thought about unsettled issues as well as additional study and reading. I began my reflections with remarks on what can be seen as

a "continuing quest" in all social and behavioral sciences—namely, establishing the conditions and contexts under which relationships are manifested, are stronger or weaker, and are reversed in direction or otherwise different. Illustrations are given in three areas of interest in the study of effective teaching and student ratings: the connection (if any) between research productivity and instructional effectiveness; the differential influence of specific instructional dimensions on learning outcomes; and the association (if any) between the teacher's gender and instructional effectiveness.

I then continued the analysis by elaborating on two long-standing issues in the field that had never been fully resolved: one dealing with the question of bias in college students' ratings of teachers; and the other concerning the applicability of the traditional model of psychological testing to student ratings. For the first set of issues, I raised such questions as how bias can be defined, and when and how to control for (or otherwise take account of) bias so as not to eliminate or ignore legitimate effects of the teacher and course. With respect to the second set of issues, I asked how to separate the objective from the subjective aspects of student ratings; when (and how) to control or adjust for student subjectivity in order to make comparison of ratings across faculty and courses meaningful and fair; and how best to interpret mean scores on evaluation items and multi-item scales (as well as when it even makes sense to average scores of individual students in the first place).

As I explored various measurement, psychometric and statistical issues involved in studying effective college teaching and using student ratings, questions of *substance* emerged—such as what characteristics of teachers, classes, and courses actually affect teaching (whether or not they affect student ratings), which sorts of teachers get assigned to teach which sorts of classes, what students have in their minds when they view and evaluate their teachers, how the particular composition of students in a class might actually affect the instructional effectiveness of teachers (as well as the ratings made by students in the class), and the extent to which students mutually influence one another in their judgments about teachers (and just how do they do so). We have some of the empirical information necessary to answer these questions, but not nearly enough. As it turned out, then, I was doing more than encouraging the kind of research that would make student ratings even more useful to educationists than they already were. I was also showing how focusing on certain technical issues in student ratings would help expand knowledge of social cognition and social attribution (within the field of social psychology) and of teaching and learning in the college classroom (within the study of higher education).

A Mid-course Correction: An Incident in the Mid-1980s

While I was working on the teacher/course evaluation series, probably in 1985 or 1986 (or thereabouts), I phoned Educational Testing Service (I believe) for an ETS report I was having trouble getting. I talked to a staff person who managed the files of past ETS reports. After I gave my name to her, she blurted out, "I thought you

were dead." I assured her I was not, as far as I knew. Most likely she had confused me with Ted Newcomb who had died at the end of 1984. This incident turned out to be an important turning point in my professional life. Her surprise at hearing my name struck a vein in me. It is not that she did not know who I was; there was no reason that she should. Yet, somehow the incident, as it reverberated in replay in my mind over time, made me realize that I was visible in print but not in person. I began to think more about my visibility in the field, not just my visibility through my writings but also—how should I put it—my "corporal" visibility. It dawned on me that I might be committing professional suicide by rarely venturing from Stony Brook University. I finally realized the importance of being more active in professional associations and conferences. I know it seems late in the game for me to have realized that it is helpful for people to be able to associate a name with a face and personality, but the cliché applies: better late than never. Others are more likely to think of someone (me, for instance) for a paper to include in a book, or to be on a panel, or to be affiliated with a research project. On another side of the coin, I also began to realize that there were face-to-face ways that I could contribute to the field of higher education besides publishing scholarly papers.

My 20 years as a consulting editor for the *Journal of Higher Education* began in 1974, and did not involve face-to-face contact; my work was done in my home (or university) office. Likewise, my 30 years as a consulting editor for *Research in Higher Education*, which began in 1982, did not involve face-to-face interaction. It is true that I had become a member of the American Sociological Association in 1965, of the American Psychological Association in 1967 (and elected a fellow in 1984), of the American Educational Research Association in 1970 (and named as a fellow in 2008), of the Association of Higher Education in 1977, and of the American Psychological Society (as a charter member and fellow) in 1988. Yet I was not much involved in any of these associations. I am not saying that I was agoraphobic academically. I had attended conferences and symposiums, but they were few in number and primarily early in my career. I gave a paper at the American Sociological Association in 1967 (before the Impacts book was published). I also presented a paper at the American Educational Research Society in 1971 and 1972, at the Eastern Sociological Society in 1982, and at two or three other one-time or lesser known conferences. (I have already mentioned, earlier, my participation in the interdisciplinary seminars given under the auspices of the American College Testing Program between 1971 and 1973).

It is perhaps partly understandable in a way—but only partly—that I was not more involved with educational conferences and symposiums. My colleagues in the sociology department were primarily involved in sociological associations; they were not going to education conferences (yet alone higher education conferences), unlike faculty in departments and institutes of education or higher education. Moreover, Stony Brook did not (and still does not) have a school of education or a department of higher education. (There had been a short-lived department of education before I arrived in 1968).

The upshot of my newfound consciousness of the importance of face-to-face interaction with my academic colleagues in higher education was a decision to

attend relevant educational conferences. Thus, in 1987 I gave a paper at the American Educational Research Association (AERA) held in Washington DC that year. It was there that I first met John Smart in person (with whom I only had had written contact up to that point in his position as editor of the journal, *Research in Higher Education*). He gave me a warm welcome. I met some other people active in higher education, who seemed both surprised and pleased to meet me in person. I did attend several more AERA conferences after that, but the size and length of the AERA conferences as well as their timing (in the spring) did not mesh well with my academic schedule at Stony Brook and were not particularly convenient for me.

I participated in my first annual conference of the Association for the Study of Higher Education (ASHE) in the fall of 1988. I had been a member of ASHE since 1977, but had never attended any of its conferences nor been on any of its committees. There was a nice bonus of my attendance that year. The conference was in St. Louis, and my daughter had just entered Washington University in St. Louis a couple of months before the conference. So I was able to have dinner and visit with her one evening.

Being at that first (for me) ASHE conference was a wonderful experience. I felt as though I had found my professional home. I attended the ASHE conference almost every year after 1988, and became enthusiastically engaged in its activities. I presented papers, reviewed papers submitted for presentation at the conference, chaired sessions at the conference, and acted as discussant at certain sessions. I was program co-chair (for symposia) of the 1991 ASHE conference. I served on at least one dissertation of the year committee, on the Editorial Board of the *Journal of Higher Education* (as member in 1994–1996 and its chair in 1997), and on both the National Panel of the ASHE-ERIC Higher Education Report Series (1995–1998) and the National Advisory Board of the same series (1998–2005). I also served on the ASHE Board as an elected member from the fall of 1998 through the fall of 2000; I believe I made worthwhile contributions in my participation on this board.

After the 1988 ASHE conference, which I attended alone, June came with me to ASHE conferences. In this way, we were able to have some time together away from our routine activities at home, often in cities we had never before visited. During the day, while I was attending various sessions, she enjoyed investigating the environs in and around the city. She also would scout out interesting restaurants where some of my colleagues and we could eat dinner. Over the years, we met new acquaintances and made wonderful new friends.

The Years of Collaboration: 1990s–2000s

I found the years in which I focused on producing the series of research syntheses on teacher evaluations most satisfying. I had control over what I did—both in content and in timing of the 14 articles. The bulk of the work was usually done during

summers and intersession breaks. By the early 1990s, I had finished writing the integration of the research on college students' views of male and female college teachers, published in two parts in 1992 and 1993 (Feldman, 1992, 1993). I did not have another research synthesis in mind in the area of teacher evaluations. And I had not yet received invitations to write the two conference papers in 1994 and 1995 (Feldman, 1994, 1995)—previously discussed—that became the wrap-ups for the series on teacher evaluations when published in 1997 and 1998 (Feldman, 1997, 1998). So there was a moment—I am not sure it was much more than a moment—when I was really uncertain about what to do next. I even wondered just how much more I would be doing in terms of published scholarship. Quite fortunately, certain events led me toward long, happy productive collaborations with people I really liked in educational areas of great interest to me (teaching and learning; and the significance of academic majors). The following two subsections detail what these collaborations were and how they came about.

Teaching and Learning in Higher Education: Collaborating with Michael Paulsen

Teaching and Learning in the College Classroom

Having been a member of ASHE from 1977 and actually attending its annual conference from 1988 onwards, I obviously knew about the ASHE Reader Series. It occurred to me in the early 1990s (as I was thinking about what my next project could be) that I might produce one of these readers. I had already published a reader on the social psychology of higher education in the early 1970s (Feldman, 1972a), as mentioned earlier. Now, based on all the reading I had done on teachers and their evaluations by students—but branching out as well—I thought I could put together something on the college classroom, particularly the teaching and learning that goes on in this setting. No ASHE Reader existed in this area at the time.

I worked diligently to collect a group of readings that concentrated on actual research on the college classroom, and added some conceptual/analytic pieces on the topic as well. Upon sending my proposal off to the ASHE Reader Advisory Board, I must admit I felt rather confident about the proposal being accepted. During the 1992 ASHE conference, Daryl Smith, who was editor of the ASHE Readers Series at the time, arranged a meeting with me. She was very politic about letting me know that the proposal needed more work. The members of the advisory board liked the readings I did include, but felt that the contents of the reader were incomplete. Primarily using a social psychological lens, I had focused mainly on studies of classroom dynamics. My proposal was noticeably shy on practioner-oriented pieces as well as literature reviews. Daryl suggested that maybe I should search for a collaborator who knew better the areas with which I was less well acquainted. I did make an attempt during the conference to find a possible collaborator, but without success.

When I got back to Stony Brook, I was not quite sure where to turn next, and thought about giving up the project. Then, out of the blue, I received a phone call one day from someone who introduced himself as Michael Paulsen—someone whom I did not know and whose name I was not sure I even recognized. He told me that he and Daryl Smith had been talking, and that she suggested he call me. After a brief conversation, I told him I was looking for a collaborator and asked him if he would be willing to look over my proposal, and let me know what he would drop and what he would add to make the proposal more acceptable to the advisory board (and presumably more useful to the field of higher education). I figured it would not do any harm to learn about his knowledge in the area and any other relevant characteristics about him.

Not very long after our initial phone call, I received in the mail Mike's suggestions and a possible reworking of my set of readings. He recommended a more balanced representation of articles that presumably would better resonate with and meet the needs of the students who take courses in college teaching and learning. His suggestions included, but were not limited to, reviews of theoretical literature with implications for teaching practices (such as articles on learning theories and student development theories). He also recommended reviews of both theoretical and research literature with implications for teaching practice (for example, articles on teaching models and strategies). I knew immediately that I had found my collaborator.

Mike and I got to work right away—first by writing a new proposal for the reader, and then after its acceptance, making the final selection for the reader, writing introductions for the various sections of the reader, and supplementing each of these introductions with a list of additional readings. The reader, which was published in 1994 (Feldman & Paulsen, 1994), was sufficiently successful to warrant an updated and revised (second) edition in 1998 (Feldman & Paulsen, 1998).

As we started our collaboration, I learned from Mike that when Daryl suggested he contact me, she also said to him something to the effect that she believed that we would get along very well with one another. In today's parlance, she sure got that right. Mike and I became the closest of friends. We are obviously different enough to rule out having been separated at birth. Yet, we discovered important more-than-surface similarities in our character and personality—not the least of which is a certain compulsivity—that let us easily understand one another and work well together.

When Mike and I began working on the reader (and for some while thereafter), it was not the time of wide and easy Internet usage as we have it today. We had to send our typed drafts of our work for feedback to one another through the postal mail. We also needed extensive long-distance phone calls (not inexpensive at the time), which sometimes went late into the night. In those calls, when our academic work was done, we continued with exchanges about our professional and personal lives. Being 15 years Mike's senior in age as well as having more experience in academia, I became something of a mentor to him. And he, in turn, found opportunities to give me advice or counseling. Moreover, on those occasions when June and I were in

New Orleans (Mike's residence before he moved to Iowa), we spent some time with Mike and his wife, Laurey, at their home; she and June were able to befriend one another.

Toward a Reconceptualization of Scholarship

As Mike and I were finishing the first edition of the ASHE Reader, we talked about the possibility of our working together on another project having to do with a broader conceptualization of "scholarship." The focus of the project would be on expanding the construct of scholarship beyond the traditional and narrow notion that equates scholarship with research, toward an enlarged view that identified and articulated the multiple dimensions of scholarship. In the early 1990s, as were many others in academia, Mike was taken with Ernest Boyer's four component conceptualization of the scholarship construct (Boyer, 1990). Although he liked the spirit of Boyer's approach, he had some reservations about it. He felt that Boyer had not supplied a theoretical foundation for his proposed elements of scholarship. He began thinking about applying the systems theory and four-function paradigm of Talcott Parsons to the concept of scholarship—believing that the Parsonian approach offered a potentially meaningful theoretical perspective and analytic framework for an understanding of the elements of scholarship. He asked me if I would like to join him in his exploration.

   Mike knew the Parsonian framework primarily from his reading of Parsons and Platt's book, "The American University" (Parsons & Platt, 1973). I was well acquainted with the Parsonian framework from studying his earlier work during my graduate days in the late 1950s and early 1960s (Parsons, 1951; Parsons, Bales, & Shils, 1953; Parsons & Smelser, 1956). Even so, I was initially lukewarm about working with Mike on this project. My hesitation was not because of not wanting to work with Mike, far from it; I was already very much enjoying our collaboration on the ASHE Reader. Rather, I was worried about how we would be able to make a rather complex conceptualization accessible. (Once we were actually working on the project, we found ways of doing so.) A larger issue, as I saw it, was that structural-functionalism had fallen out of favor in sociology, and to use this approach seemed at the time to be regressive. That is, Parson's approach has limitations because of its being primarily a consensus approach to the analysis of social action and thus avoids approaches embedded in conflict theory. Mike was able to assuage my misgivings—at least in large part—by pointing out a certain revitalization at the time in the Parsonian framework and improvements in it (e.g., see Alexander, 1984; Munch, 1987; Sciulli & Gerstein, 1985).

   Previous investigations and analyses of scholarship had used *inductive* methods to identify the dimensions of scholarship. In contrast, we used the Parsonian four-function paradigm to *deduce* the four basic categories of scholarship. That is, we used this Parsonian paradigm as a heuristic device or guide to characterize and explain the activities of faculty in the scholarship action system (Paulsen & Feldman, 1995b). Our answers to the questions posed by the paradigm enabled

us to derive the four functional subsystems or dimensions of the construct of scholarship: (1) the pattern-maintenance function performed by actions constituting the subsystem of scholarship of research and graduate training; (2) the adaptation function performed by actions constituting the subsystem of scholarship of teaching; (3) the goal-attainment function performed by the actions constituting the subsystem of scholarship of service; and (4) the integration function performed by the actions constituting the subsystem of scholarship of academic citizenship. Of course, being able to put various activities of faculty into categories does not automatically mean that the classification system is useful. To guard against having created an essentially vacuous classificatory schema, we exerted much effort exploring some of the uses and applications of the four-category scholarship action system we developed. We also considered how a conflict approach would be relevant to our analysis.

Some years after the publication of our article, we extended our analysis to the study of the scholarship of the teaching action system, one of the four functional subsystems of the overall scholarship action system (Paulsen & Feldman, 2003). By again applying the Parsonian four-function paradigm to the scholarship of the teaching action system, we suggested that this particular subsystem itself has four subsystems, each one characterized by its own distinctive functional imperatives: (1) scholarship of pedagogical content knowledge (pattern-maintenance function); (2) graduate training (adaptation function); (3) reflective teaching (goal-attainment function); and (4) faculty evaluation and development (integration function).

Taking Teaching Seriously

At the beginning of the 1990s, Edgerton, Hutchings, and Quinlan (1991) wrote the following: "A movement that Patricia Cross labeled 'Taking Teaching Seriously' is spreading throughout the country. Campus after campus is reexamining its commitment to teaching and beginning to explore ways that teaching might be rewarded and improved" (p. 1). As Mike and I were working on our initial piece on scholarship, he was at the same time thinking seriously about the call from different sources for instructional improvement at the college level. He had already done some work on the subject and had preliminary plans to write a book-length monograph for the annual series of ASHE-ERIC Higher Education Reports. He asked me at some point if I would like to join him in his effort. This time I had no hesitation whatsoever in saying immediately, "Of course."

After we finished the first article on scholarship, we went to work on the monograph, which was published in 1995 (Paulsen & Feldman, 1995a). In this monograph, we addressed the question of what deans, department chairs, and other faculty leaders can do to encourage and support efforts of individual faculty members to improve their teaching. As a part of our analysis, we examined the nature of instructional improvement and the challenge of motivating faculty to improve their teaching, make the necessary changes in their teaching, and maintain those changes. We also explored the important factors in the creation of a supportive campus

teaching culture and presented detailed explanations and illustrations of five sources of feedback for improving instruction—teachers themselves, students, colleagues, consultants, and chairs—based on a review of the literature on successful practices. Finally, we analyzed the special needs of new and junior faculty for instructional improvement.

Whenever possible, our report emphasized the results and implications of research in an area of discussion. Within this empirical approach, we stressed the results of various research integrations, meta-analyses, and other sorts of research reviews. Many single pieces of research were also included—particularly those that were especially important to the development of an area of discussion, related most directly to a section's theme(s), presented distinctive data or otherwise filled certain research gaps in the field, or had important implications for practice and were likely to be useful to teachers, chairs, and administrators. Certain selective ideas, propositions, speculations, and suggestions were also included that had not necessarily been verified by research but about which there was some degree of consensus among analysts and practioners about their usefulness. At the same time, particularly fresh approaches that appeared to have some potential to improve teaching were included; that is, opinion was not avoided so long as it was *informed* opinion.

Epistemological Beliefs of Students

For some time, Mike had been interested in the importance of epistemological beliefs of college students—primarily the degree to which the *nature* of knowledge was considered by students to be "naïve" rather than "sophisticated" (simple knowledge; certain knowledge) and the degree to which the *acquisition* of knowledge was considered by students to be "naïve" rather than "sophisticated" (fixed ability; quick learning). Using data collected from students in a large public urban university in the spring semester of 1996, he and Charles Wells (Paulsen and Wells, 1998) found that these dimensions of epistemological beliefs were related to the disciplinary contexts in which students select and experience their specialized course work in college.

For our next project, Mike and I wanted to study the learning strategies used by students by further exploring the importance of the four distinct components of a system of epistemological beliefs he had already begun to study. In early and preliminary studies, based on the experiences of students taking undergraduate courses in education, we examined the four dimensions of epistemological beliefs and their relationships with six measures of motivational learning strategies (Paulsen & Feldman, 1999b) as well as four measures of cognitive learning strategies and four measures of behavioral strategies (Paulsen & Feldman, 1999a). We eventually used a sample more than twice as large as that in the two earlier studies and examined students taking classes in a variety of disciplines representing the humanities, natural sciences, social sciences and education. We examined both the conditional and interaction effects of the four dimensions of epistemological beliefs

on motivational learning strategies in one article (Paulsen & Feldman, 2005) and, in a second article (Paulsen & Feldman, 2007), on cognitive and behavioral learning strategies.

The Importance of Academic Disciplines in Student's Lives: Collaborating with John Smart and Corinna (Bunty) Ethington

Some time during the mid 1990s, I received an e-mail from John Smart, asking if I would be interested in working on some piece of research that we would mutually choose. He had acquired a data set obtained from surveys done by the Cooperative Institutional Research Program (CIRP) sponsored by the Higher Educational Research Institute at the University of California, Los Angeles. He wondered if there were some portion of the data we could work on together that would meet both of our research interests. At that point, I would not say that I knew John well. I had had contact with him in his capacity as editor of *Research in Higher Education,* and we had had enlightening and enjoyable conversations at ASHE. Yet, being intrigued by his offer, I replied that indeed I would be interested in seeing if we could work something out.

We decided to try to integrate two analytic frameworks in analyzing the data. The first framework was brought by John based on his longstanding interest in John Holland's theory of careers (Holland, 1966, 1973, 1985, 1997), a part of which can be used to develop theoretically meaningful and empirically defensible clusters of academic disciplines or departments (Rosen, Holmberg, & Holland, 1989). I brought the second framework by returning to my earlier interest in "accentuation effects" as an aid in the study of complex student change and stability during college years. In a paper we published in 1998 (Smart & Feldman, 1998), we used the Holland-derived classification of major fields to explore all four kinds of accentuation: accentuation of initial group differences; accentuation of groups' initially prominent characteristics; accentuation of initial individual differences (within a group); and accentuation of individuals' initially prominent characteristics.

Our collaboration went smoothly, and as we were finishing our research, John inquired about my working with him and his wife, Bunty, on a book that he had in mind and hoped one day to write. I thought it was definitely worth a try. I knew Bunty at that point from talking to her at ASHE conferences. The roundabout way in which I first met her is worth telling. As I mentioned earlier, in the late 1980s I had begun to attend ASHE conferences regularly. I believe it was at one of these conferences, in 1989 or 1990, that I attended a session where a Corinna Ethington was one of the presenters. She gave what I thought to be an interesting paper— intelligent, nicely written and very well presented. I was much surprised when the discussant for the session offered what I thought were particularly ill-considered comments on the paper. At the end of the session, I went to the presenter (whom I had never met), not to talk to her about the comments of the discussant, but to

tell her about how clearly she presented the material of the paper. I remember my saying to her that she most likely was a wonderful teacher in the classroom. Little did I know at the time that Corinna Ethington was "Bunty" Ethington and was the wife of John Smart. And I obviously had no inkling whatsoever that 10 years or so into the future I would be agreeing to write a book with her and John. All I can say is that Bunty and I surely got off on the right foot.

It took a little while—but not as long as might be imagined—for the three of us to adjust to working with one another. We became a productive working team rather quickly. John was clear about the point of view he wanted to take and how he preferred to interpret findings, yet he was always open to suggestions and was usually willing to modify his position if a reasonable argument could be made to do so. Bunty was the methods/statistical expert for the team as well as the executor of the computer runs. But she was even more—a sort of gatekeeper. If there were a mistake in logic, or an implication not spelled out, or an unwarranted inference, or a fuzzy explanation, or a contradiction between different parts of the manuscript, she would find it. I took to calling this ability her X-ray vision, and often marveled at it (although I am no slouch myself at this sort of thing.)

Much of our collaboration could be done by exchanges through the Internet. But not all of it. Our collaboration entailed my making a half dozen (or so) 3-day weekend trips to Memphis where John and Bunty lived. We worked very hard during those weekends, but not every minute. When we were not working, usually at nights, John and Bunty showed me the sights and attractions in Memphis and surrounding areas. A few times, we even ventured to the casinos of Tunica, Mississippi—primarily for their diner buffets, I might note. I do like electronic poker, and would hand over $20 or $30 to the machines on the way either to or from dinner (the last of the big spenders, so to speak).

I believe it is fair to say that John does not have a demeanor that can be characterized as effusive. So I was not prepared to read the following sentence referring to our collaboration in his initial draft of the preface for our book: "A collaboration that works is a joyful experience." Feeling that this characterization was a little "over the top," I convinced him to dial down the emotion one notch by changing the word joyful to exhilarating, which is how the sentence now reads in the published preface. But I was wrong; John was right the first time.

Regarding the substance of the book (Smart, Feldman, & Ethington, 2000), working with John and Bunty let me reexplore my long-standing interest in the significance of major fields in students' lives as well the comparison between a psychological approach and sociological approach to the student change and stability of college students. I both respected and admired John's steadfast allegiance to the usefulness of Holland's theory (Holland, 1966, 1973, 1985, 1997)—originally developed to explain vocational behavior—as an illuminating, theory-based framework for research on college students and faculty. Following John's lead, I became convinced of the appropriateness of Holland's theory for exploring aspects of the professional lives of faculty and for examining both the choice of academic majors by students and their subsequent patterns of change and stability in abilities and interests.

The findings of our book generally supported, albeit with varying degrees of strength, the three basic assumptions of Holland's theory: self-selection assumption; socialization assumption; and congruence assumption. To examine the validity of the self-selection assumption that students search for and select academic environments that parallel their personality types, we explored differences in the self-rated abilities and interests of those who initially selected different kinds of academic environments and also sought information about the proportions of students who initially selected academic environments analogous with their dominant personality types. We examined the validity of the socialization assumption that academic environments reinforce and reward differential patterns of abilities and interests in students—irrespective of their personality types—by exploring longitudinal patterns of actual change and stability in the self-rated abilities and interests of students in the four academic environments we studied and by their estimates of self-growth over a 4-year period. Finally, our analyses to assess the validity of the congruence hypotheses also involved the longitudinal patterns of change and stability in the self-rated abilities and interests of students and their estimates of self-growth over a 4-year period. In this case, however, we focused on the congruence or fit based on the dominant personality type of students *and* their academic environments.

A particularly interesting and important finding of our research was that the congruent and incongruent students in the same academic environment made parallel gains in interests and abilities during their college years (though incongruent students started and ended lower than did the congruent students). We further explored this finding in a separate article (Feldman, Ethington, & Smart, 2001) in terms of the relative importance of psychological forces and social forces in their respective contribution to students' change and stability in college. We interpreted the results in terms of a socialization dynamic being more prevalent than a personality dynamic (though both dynamics were evident). We continued to reflect on and expand these results when we were commissioned by the National Postsecondary Education Cooperative (NEPC) to participate in (and prepare a report for) the 2006 National Symposium on Postsecondary Student Success (Smart, Feldman, & Ethington, 2006). This report formed the basis of a chapter we wrote for the 2008 edition of *Higher Education: Handbook of Theory and Research* (Feldman, Smart, & Ethington, 2008).

For both the report and the handbook chapter, we analyzed additional data (that did not figure into our earlier book) and also reframed our analyses in terms of "student success." We found support for both the traditional definition and an alternative definition of student success derived from Holland's theory. Support for the traditional definition, based on the *congruence* assumption of Holland's theory, was shown by the likelihood of students further developing their initially prominent characteristics was basically contingent on their selection of a congruent rather than an incongruent academic environment. Support for an alternative definition of student success, based on the *socialization* assumption of Holland's theory, came from the clear evidence of a consistent pattern of student growth in the distinctive set of abilities, interests and competencies required, reinforced and rewarded by each of the four academic environments we examined irrespective of the students'

dominant personality type. For each of the four personality types we examined, any appreciable growth in the four sets of abilities, interests and competencies was, for the most part, dependent on the academic environments of their major field of study (whereas students tended to remain stable or decline in the three other sets of abilities, interests and competencies that are not reinforced or rewarded by the academic environment of their major field of study).

Having analyzed additional data on student profiles for patterns of change and stability, we were able to conclude that, on the one hand, the more psychologically oriented component in Holland's theory, manifested in the congruence assumption, leads to a more peaked profile of student success in which students' initially prominent characteristics become more pronounced and their other sets of abilities, interests and competencies tend to remain essentially stable or to decline. This profile has more in common with the vocational or occupational perspective of student success in that it is wholly reflective of the most common application of Holland's theory, which intends to assist individuals in selecting careers where they have the greatest likelihood of success. On the other hand, the more sociologically oriented component in Holland's theory, manifested in the socialization assumption, leads to a more balanced profile of student success in which students remain stable or decline slightly in their initially prominent characteristics and grow considerably, sometimes dramatically so, in the set of abilities, interests, and competencies reinforced and rewarded by their chosen (albeit incongruent) academic environment. The more balanced profile of student success that emerges from greater attention to the socialization assumption of the theory has more in common with the liberal arts perspective of student success, which emphasizes the need for students to develop a broader repertoire of competencies and interests to function successfully as citizens of a democratic society. In either of these two cases—the more peaked profile or the more balanced profile—the environment of the academic discipline is absolutely central in importance.

Rounding Out the Picture (a Little)

Because of the selective focus of this memoir, I may have given the misleading impression that most of my adult life has been spent researching and writing. Even professionally, this is not true. If I were to count up hours, I would say that my teaching (and closely related) activities have actually taken up more of my time. This certainly is the case if I add in service/volunteer activities. Generally, my intensive periods of writing have been done during my winter and summer breaks from teaching. At other times, when I was not entrenched in my university, family and community life, rather than working on the first (original) draft of a piece I more likely would be engaged in background preparation for writing a piece or additional editing and re-writing an already carved-out first draft. A case in point is this memoir itself. I started it in the summer of 2013, put it mostly aside when the fall semester (2013) at the university started, worked a little on it during the winter

break between semesters, and again put it mostly aside during the spring semester (2014) of the university, and only now am completing it during the summer of 2014 (which has included re-writing parts of it and adding material I did not have time to consider earlier).

I will not be able to delve into my teaching, service and family activities in any great detail, but I do have some things to say about them. First off, I have greatly enjoyed teaching, and have done so (except for sabbatical semesters) every semester for the 46-plus years I have been at Stony Brook. I even taught during the summers for eight of my first 10 years at Stony Brook. In fact, one of the reasons I have not yet retired is that I want to continue teaching. I listed previously the courses that I taught in my early years at Stony Brook and have continued teaching them (introductory social psychology, sociology of youth, and sociology of identity). At some point, I dropped sociology of education from my repertoire of courses and at another point I added sociology of the "life course" (the term sociologists prefer over "life cycle"). I have taught other undergraduate courses, but each only infrequently, and I will not mention them further.

When my undergraduate courses are not large, I do my own grading as well as advising of students who need extra help or who just want to explore further the material of the class. When these undergraduate courses are large, I am assigned at least one graduate student assistant (TA) to help with grading and assisting students in the class. With very few exceptions, the graduate students with whom I have worked over the years have been excellent—hardworking, clearly enthusiastic about helping undergraduates, and conscientious in their grading of exams. Whenever I had good teaching assistants, I would try to arrange working with them (if possible) for more than one semester.

As for graduate courses, I continued to teach "Socialization and Self" after my early years at Stony Brook. I also began to teach "Sociology of Education" at the graduate level (for a while) and added a course called "The Three Faces of Social Psychology," based on an article of the same name written by James House (House, 1977), a fellow graduate of the University of Michigan's social psychology program. In the spring semester of 1992, I initiated a dissertation seminar in which I helped prepare graduate students in our department for their oral specialty exams and the defense of their dissertation proposals; I directed this seminar many times after that. Again I am skipping over some other graduate courses that I taught infrequently.

I should note what, perhaps, might be considered an "oddity": the substance of my teaching at both the undergraduate and graduate levels has had little overlap with the research topics I have pursued. Few readings in higher education appear in my syllabi, though there is slightly more about higher education in some courses than in others. I could argue that keeping my teaching and research largely separate has kept me "fresh" in both areas. This may well be an after-the-fact rationale, however. I am not quite sure. In any case, the relative lack of overlap has not bothered me.

Not only have I been active in the classroom, I also have been busy over the years mentoring students individually (especially graduate students) and working with graduate students on their dissertation (either as their main advisor or a member

of their dissertation committee). I feel honored that my teaching and mentoring activities were recognized by a 1994–1995 President's Award for Excellence in Teaching, Stony Brook University, a 1994–1995 Chancellor's Award for Excellence in Teaching, State University of New York, and the 2004 Dean's award for Excellence in Graduate Mentoring by a Faculty Member.

I should add some information here about four other awards I have received that are national in scope. The first one, which I mentioned earlier, was the 1994 Wilbert J. McKeachie Career Achievement Award of the Special Interest Group for Faculty Teaching, Evaluation, and Development (SIGTFED) of the American Education Research Association (AERA). I did expect that I might someday possibly receive this award because of my many integrative pieces on teacher evaluation. As for the next two awards—the 1995 AERA Distinguished Research Award for the Postsecondary Education Division (Division J) and the 1996 Research Achievement Award of the Association for the Study of Higher Education (ASHE)—I am honestly not being disingenuous in saying that they came as a surprise since they were not particularly on my radar as possibilities. Still, I felt most grateful to have received them. Although I did not know about my chances for receiving the fourth award, the Howard R. Bowen Distinguished Career Award of AHSE, I obviously was aware of its existence since this is one of the major awards awarded by ASHE. I did hope in the later years of my career that I had accomplished enough in the field of higher education to warrant the award. When, in fact, I received it in 2009, I was thrilled (and still am).

So far I have said little about a set of activities that has taken a large chunk of my time and energies over the years. I refer to my service on various local committees, councils, and boards. Being an active member of them has been a significant part of my professional life. There have been a lot of them over the years—too many of them even to list here. I will single out six of these committees—three in the sociology department and three outside of the department—to help further round out the picture of my professional life.

Regarding departmental committees, I was chair of the sociology department's Comprehensive Exams Committee for several years (from 1976 to 1978 as well as during the spring semester of 1982 and the school year of 1985–1986). When the department replaced the system of comprehensive exams to be taken by graduate students with a track-paper system for graduate students, I (eventually) became a member of the Track Paper Editorial Board (Fall 2003–Spring 2005), and have been the chair of this board since the fall semester of 2006. In addition to assigning faculty members to students writing their track papers, the board also is in charge of evaluating papers (whether or not they are track papers) submitted by students for departmental awards. To continue, a particularly important committee of the department is its Faculty Recruitment Committee, the committee that helps solicit applications for faculty positions in the department, reads the files of applicants (including their submitted papers whether published or unpublished), and hosts the visit to Stony Brook of the top three or four candidates. I was chair of this committee for 2 years (1983–1985) and a member of the committee for 12 of the subsequent 18 years (between the fall semester of 1983 to the spring semester of 2003).

In considering committees outside of the sociology department, I note first the Standing Committee of the Art and Sciences Senate known as the Committee for the Academic Standing and Appeals or CASA. The members of this committee primarily consider the appeals of students who have not received an approval of the College of Arts and Sciences through the Executive Officer of CASA of their petition for a change in academic standing or a related request. In submitting a new petition to the members of CASA the students usually give more information and greater documentation than they had in their original petition. I became a member of this committee in 1990 and have continued to be a member for 16 years of the past 24 years (and will continue to be a member of this committee for the school years of 2014–2015 and 2015–2016). I have been continually impressed by how well the members of this committee work together in granting or rejecting appeals by balancing out the circumstances and motivations of the student with the academic policies of the university.

As a prelude to mentioning my next service activity, I must start on a personal note. I have a great love of classical music. As only one of many indicators, whenever I am working at my home office, I have classical music playing—either from my extensive collection of vinyl records and compact discs or from my tuner set on one of the classical-music radio stations in the area. So it was "natural" for me to become involved in the fine arts organization at Stony Brook. Since opening in 1978 as the Fine Arts Center at Stony Brook University and transformed in 1988 as the Staller Center for the Fine Arts, the center has presented an ever-expanding schedule of music, dance, theatre, and fine art exhibitions. I was a member of the advisory council for the center from the spring semester of 1987 to the spring semester of 1998. I could not have been more pleased to be on this council, comprised of both university and community participants, as it helped expand the fine arts for Stony Brook University and the surrounding community.

In 1987, I joined the Board of the Stony Brook Child Care Services, Inc., and am still a member some 27 years later. This child-care center is loosely affiliated with Stony Brook University with a semi-independent status. It currently has about 160 children registered, roughly 80 infant/toddlers and another 80 pre-schoolers. The board is made up of both university and community members (including parents who have children in the center). This very active, hard-working board meets at least once a month during the year, and has various subcommittees that meet regularly. The board handles a wide variety of matters, including formulating policy, creating and maintaining the budget of the center, overseeing the administrative staff, fund-raising, and many other activities. Although I have been heavily invested in this child-care center over the years, I will not try to detail all the exact ways in which I have been involved. What I will point out, however, is that I have been known to say publicly—and jokingly (?)—that my activities on behalf of the child-care center may well be my ticket to heaven.

I have a little more to say about my personal life. Even as June has unfailingly supported me in my career, she has maintained a career of her own. From the beginning of our marriage we have had a two-career marriage. From the first day of our marriage June worked full time except when our children were small (when

she cut back to 3 days a week). When we moved from Ann Arbor to Long Island, she worked as a psychiatric social work supervisor at one psychiatric center for 9 years and then at a different psychiatric center for another 3 years. After that she was an Associate Director of Social Work Services at Stony Brook University Hospital from 1980 to 2005, and then for a year before she retired she was the Acting Director of Social Work Services. She also was a clinical assistant professor in the Department of Psychiatry (1979–1988) and the School of Social Work (1980–2006) at Stony Brook. Further, from 1988 to the present she has had a part-time private psychotherapy and counseling practice.

Since we both were intent on supporting each other's career, some "juggling" of our activities was involved, but we managed pretty well. To "unpack" further our strategies in doing so would take a second, more personal memoir, most likely requiring an assist from June in the writing. What I do want to note, however, is that a particularly important factor in making our two-career marriage possible was the services of an exceptional nanny/housekeeper. "Our" Ann was with our family for 40 years (1972–2012), anywhere from 3 or 4 days a week when the kids were very young to one day a week after they left for college. Our children loved her when they were growing up and still do. June and I continue to maintain close contact with her (as a part of our "family") by phone and mutual visits. [Sadly, I must report that about two months after the initial submission of this manuscript our beloved Ann passed away at the age of 94].

Although June has always been good about giving me a certain amount of "space," she also has expected me to be a full partner in our marriage. If this expectation is taken to mean an absolute "fifty-fifty" in all responsibilities, then I cannot claim to have gotten to my "fifty." I will say, however, that I have tried hard to get and keep my percentage fairly high. We have had a variety of parental obligations, community obligations, religious commitments (as members of the North Shore Jewish Center), cultural interests, and leisure activities (including concert going, museum attendance, theatrical visits, etc.). Moreover, June has always liked to travel, and sometimes needed to "encourage me"—a tactful, euphemistic phrase—to do so since much of this travel came during a couple of weeks of my working summers. In addition to our visiting various parts of the United States and Canada, we have spent some time overseas—with visits to Israel (three times) and to parts of England, France, Turkey, Italy, Sweden, Finland, Russia, Egypt, and Czechoslovakia. Once on these trips, I very much enjoyed them.

Like all of us, I have had times when things in my professional and personal life did not go as I had hoped or planned, which I call "bumps in the road": goals and needs deferred or not met at all; disappointments and frustrations; unexpected occurrences; personal and professional frictions, to name a few. I have already referred to a few of the *professional* "bumps" and do not intend to mention any others. How important can it be for me to report that I was upset that a merit increase I expected to be good-sized was pretty small? I realize that a discussion of some of these "bumps"—especially less trivial instances—conceivably could be somewhat informative about my personality and character as well as the workings of academia. Yet, too many of these instances now seem to me in retrospect to fall

into the category of personal gripes, perceived inequities, and the like. In any case, many of them worked themselves out or became moot. I just cannot see any great payoff in introducing them here.

There is one category of "bumps" in my *personal* life, however, that I do want to mention explicitly, even though I do not think it is appropriate to go into specifics. Like all families, June, my son and daughter, and I have faced and coped with various medical problems—some minor and some not so minor. Two or three of them turned out to be life threatening. We managed to get through them alive whether—depending on ones' perspective—by luck, the miracle of modern-day medicine, or the will of God. One uncontested positive factor, however, was June's unparalleled commitment to the physical health of the family. By activating her professional connections, her networking skills, and her own well-honed problem-solving ethos, she navigated the family through these medical crises. I remain amazed by her character, perseverance, success, and just plain "smarts" in this realm.

Wrapping It Up

The main thrust of this memoir has been to review my research and scholarly work—not only to present its substance but also to relate just how it came about. I embroidered this core by describing some of my teaching and service activities as well as by giving bits of information about my family and personal life. In thus reviewing my past, I have come to realize (more than ever) that the good parts of both my professional and personal life—of which there have been many—have been very good indeed. Also, I gained a renewed awareness of how much I am indebted to people who helped me along the way.

As I thought about how to end this memoir, Erik Erikson's well-known theory of eight stages of psychosocial development (Erikson, 1963) popped into my mind, and I could not will it away. This is ironic in and of itself since I have mixed feelings about the Eriksonian scheme. In class I caution students about its claim of universality, its insistence of a set sequence of stages with particular age ranges, its over reliance on internal laws of development and its under reliance on social and cultural forces (among other caveats). Yet, the scheme can be useful for descriptive purposes.

In each of the eight stages posited by Erikson, the person confronts and hopefully masters new challenges. That is, each stage is characterized by a conflict or psychosocial crisis that must be resolved by the individual. Even though I am still active in a work setting, I suppose at my age I have entered stage eight, the one that is labeled "ego integrity vs. despair." In this stage, people look back on their lives and accomplishments. On the one hand, if they believe that they have led happy and productive lives, they develop feelings of contentment and integrity. If, on the other hand, they have many regrets and see their lives as having been wasted or their life goals as having not been met, they are left with feelings of bitterness and despair. I am thankful to have landed—professionally and personally—on the positive side of this stage.

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Chapter 2
A Model of Critical Thinking in Higher Education

Martin Davies

Part 1: The Individual Axis

Introduction

"Critical thinking in higher education" is a phrase that means many things to many people. It is a broad church. Does it mean a propensity for finding fault? Does it refer to an analytical method? Does it mean an ethical attitude or a disposition? Does it mean all of the above? Educating to develop *critical intellectuals* and the Marxist concept of *critical consciousness* are very different from the logician's toolkit of finding fallacies in passages of text, or the practice of identifying and distinguishing valid from invalid syllogisms. Critical thinking in higher education can also encompass debates about critical pedagogy, i.e., political critiques of the role and function of education in society, critical feminist approaches to curriculum, issues related to what has become known as critical citizenship, or any other education-related topic that uses the appellation "critical". Equally, it can, and usually does, refer to the importance and centrality of developing general skills in reasoning—skills that we hope all graduates possess. Yet, despite more than four decades of dedicated scholarly work "critical thinking" remains as elusive as ever. As a concept, it is, as Raymond Williams has noted, a 'most difficult one' (Williams, 1976, p. 74).

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How should we account for these issues when we—i.e., academics, educators, employers, interested others—make bold claims about the importance of our students developing "critical thinking"? There is little doubt that critical thinking *in higher education* involves all of the elements noted above. But what sense can be made of this? Critical thinking cannot be all things to all people; this would mean the phrase does little useful scholarly work.

Traditional philosophical definitions of the concept of "critical thinking"—which I shall outline shortly—do not necessarily inform debates in these very different areas of critical thinking scholarship. Definitions of critical thinking are not central to areas such as critical pedagogy or critical feminism. Learning about them does not help one develop a critical attitude about the society in which one lives. Philosophical definitions of critical thinking do not assist in becoming a critical citizen. However, in another sense, the core attributes of critical thinking canvassed in these definitions will always remain fundamental to what we mean by "critical thinking". At a very basic level, critical thinking is about having skills of a certain sort (inference making, reasoning, and so on). Yet, critical thinking is also much more than this. Traditional philosophical definitions of critical thinking seem impotent in relation to these wider areas of critical thinking scholarship as they apply to the discipline of Higher Education.

Whether critical thinking can and should be taught is as contested as the concept of "critical thinking" itself. Again, any answer to these questions depends very much on what one means by "critical thinking". Many would concur that teaching the skill of recognizing and constructing arguments—i.e., critical thinking as reasoning skills—is valuable and important. However, educating for radical social and political change (i.e., "critical pedagogy") may be seen as less desirable. Others are not happy with the teaching of critical thinking in any form. Consider, for example, the recent Texas Republican Party policy that explicitly tried to ban the teaching of critical thinking in schools (Strauss, 2012). Banning something is premised on a clear understanding of the thing one is trying to ban. But what *exactly* did the Republicans want to ban? This was not obvious. Little progress on the topic of critical thinking in higher education can be made if the concept itself remains unmoored from any proper theoretical and conceptual grounding. Little progress can be made if "critical thinking" remains un-theorized. Perhaps this is why critical thinking is said to be 'one of the defining concepts in Western education which enjoys wide endorsement, yet we have no proper account of it' (Barnett, 1997, p. 1).

It is probably about time that we had such an account. Accordingly, this two-part paper aims to provide a holistic conception of the various theoretical approaches to critical thinking as it is used in the discipline of Higher Education. I develop a model of critical thinking in higher education that pays due recognition to the antecedent work done by others (in the so-called "critical thinking movement", and elsewhere), and yet which provides a place for work being done in a variety of fields residing at the periphery of traditional critical thinking scholarship in Higher Education.

Models of Critical Thinking

Building on the work of Barnett (1997), the suggestion is that critical thinking in higher education has at least six distinct, yet integrated and permeable, dimensions (see Part 2, "A model of critical thinking in higher education"). These range from: (1) core skills in critical argumentation (reasoning and inference-making), (2) critical judgments, (3) critical thinking dispositions and attitudes, (4) critical actions, (5) critical social relations, and (6) what I, and others (notably, Burbules & Berk, 1999), call "critical creativity", "critical openness", or *critical being*. Each of these, I submit, has an important place in an overarching model of critical thinking. The model I propose will demonstrate that critical thinking has both an *individual,* as well as a *socio-cultural* dimension—both comprising axes in the model—and admits of at least six distinct, dimensions of critical thinking: i.e., as skills, judgments, dispositions, actions, social relations and critical being. This helps in developing a theory of critical thinking in higher education, with due acknowledgment to past and present approaches to the topic. This has the potential to assist in making headway on the variety of critical thinking concerns that exist in the field of Higher Education today.

There are many well-developed extant models of critical thinking. They might be called "philosophical" models of critical thinking. They range from the tried and tested taxonomy of educational objectives, with its contemporary variations (Airasian et al., 2001; Bloom, 1956) to the Collegiate Learning Assessment, APA Delphi and Paul-Elder models (Facione, 1990; Paul & Elder, 2001; Sadler, 2010). There are also models of critical thinking in relation to cognitive decision-making (Ennis, 1991). However, these models are used mostly in educating *for* critical thinking; i.e., aiming to provide a solid cognitive foundation for judgment formation and decision-making. However, critical thinking *in* higher education is a different beast, serving as it does, the entire interdisciplinary field of Higher Education, and the wider concerns of educators' attitudes to criticality. Concerns about argumentation, judgment formation and decision-making that bears on educating *for* criticality also apply to critical thinking *in* higher education, but the latter has a wider brief.

It is the latter which is my main focus. Just as critical thinking has a different place in the various disciplines—critical thinking in the sciences is different from the professions—so too there is unique place for critical thinking in Higher Education. In this paper I attempt to locate this place. Any account of the place of critical thinking in higher education needs to make sense, for example, of how critical thinking is represented in debates about critical pedagogy, the role of education in leading to individual and collective socio-political activism, the place of critical thinking in educating for citizenship, the role of critical thinking in relation to creativity, and so on. Any such account of critical thinking must also account for the traditional focus of critical thinking as a composite of skills and judgments, and as a variety of dispositions as well. A model of critical thinking in higher education is needed that incorporates all these concerns.

These varied higher educational concerns, I suggest, are not well-served by present models of critical thinking. The latter have a very different, and circumscribed, purpose. While philosophical accounts of critical thinking may be necessary in relation to one important purpose in higher education (teaching important cognitive skills), they are not *sufficient* in accounting for the place of critical thinking in the discipline of Higher Education. The latter is what I aim to provide in this paper.

The Place of Critical Thinking in Higher Education

What is the place of critical thinking in higher education? At one level critical thinking is all about the development of certain sorts of skills. These include skills in argumentation, and skills in making sound judgments. Employers want evidence of critical thinking skills in their employees, and graduates are assumed to possess these skills. However, skills without the disposition to *use* them are not much use, so critical thinking is about dispositions as well. Critical thinking, as both skills and dispositions, is mainly about the development of the *individual*. We might call this the *individual dimension* of critical thinking.

Critical thinking in this sense is needed by industry as much as academia. But, of course, society also demands individual critical thinking skills and dispositions as these are important for employment and wider social and political engagement. Critical thinking is, therefore, both an individual attribute and beneficial to society. Can we say then, that critical thinking is a *social* aspiration as well, i.e., that it has a social dimension?

Theorists that promulgate views in what has become known as critical pedagogy think that critical thinking is as much about *changing* society, and conditions of social oppression, as much as demonstrating individual skills in reasoning, argumentation and judgments. They regard belief claims, for example, 'not merely as a propositions to be assessed for their truth content, but as part of systems of belief and action that have aggregate effects within the power structures of society. It asks first about these systems of belief and action, *who benefits*?' (Burbules & Berk, 1999, p. 47). Their focus is not on individual skills and dispositions as much as the social and political *relevance* of arguments and reasoning. Questioning power relationships in society must, they argue, be considered a central part of critical thinking (Kaplan, 1991).

Similarly, scholars that write about what has become known as critical democratic citizenship education have a very different account of critical thinking. Given that critical thinking has a social and political dimension, it is not unreasonable for it to have a dimension of inter-personal socially-appropriate *caring* as well (Noddings, 1992). In order to cultivate critical citizens, they argue, 'instructional designs are needed that do not capitalize on applying tricks of arguing, nor on the cognitive activity of analyzing power structures, but contribute … in a meaningful and critical way in concrete real social practices and activities'

(Ten Dam & Volman, 2004, p. 371). They argue that learning to think critically should—in part at least—be conceptualized as 'the acquisition of the competence to participate critically in the communities and social practices of which a person is a member' (Ten Dam & Volman, p. 375). This kind of educational aim, naturally, has an impact on the development of critical character and *virtue*. A good "citizen", they suggest, should be more than an individual, who is well-appraised of skills in argumentation with the capacity to form sound judgments, but a socially-adept and virtuous person, caring in nature, with the capacity to consider the interests and needs of his fellow man. Critical thinking therefore has *moral* as well as cultural characteristics. We might call this the *socio-cultural dimension* of critical thinking.

Both the individual and the socio-cultural dimensions can be given a place, and reconciled, in a single model of critical thinking in higher education. I see both dimensions as separate and distinguishable axes or vectors that account for very different, equally important, aspects of critical thinking. To date, much of the scholarly effort has been (rightly) expended on the individual axis, with its emphasis on the cultivation of skills and dispositions. This is understandable: being an (individual) critical thinker naturally has many personal and social benefits, not to mention its need in the workplace. Increasingly, however, more work is being done on the socio-cultural dimension. This too is important, albeit it is often neglected.

I begin by looking at the various, well-known definitions of the concept of critical thinking, and put these into a conceptual framework. Following this, I shall outline various views of critical thinking incorporating skills, judgments, dispositions, actions and social relations. In Part 2, I provide a model—a model of critical thinking in higher education—that incorporates all these dimensions.

What Is Critical Thinking?

The first thing to do is to gain an understanding of critical thinking as it applies in higher education. One way of doing this would be to take the strategy of isolating negative instances of critical thinking, i.e., to say what critical thinking is *not*. This helps to delimit the boundaries of the concept. Fortunately, there is little dispute on negative cases. Critical thinking is *not:*

- *Purposeless thinking:* Day-dreaming, musing and idle thinking is not critical thinking, 'they do not qualify for the adjective "critical"' (McPeck, 1981, p. 3). Instead, it is agreed that critical thinking must be goal-directed, aimed towards an end, and purposeful.
- *Random thinking:* Careless, misdirected and sloppy thinking is not critical thinking either. Using questionable evidence, failure to assess sources, and relying on dubious authority is contrary to critical thinking (Bailin, Case, Coombs, & Daniels, 1999). Critical thinking relies on meeting adequate *standards*.
- *Accidental or unintentional thinking:* Arriving inadvertently or unintentionally at the correct critical assessment of a position or the accomplishment of a goal is

insufficient for critical thinking. Critical thinking must be done in full knowledge and awareness of the standards of thinking expected (even if these "standards" cannot necessarily be verbalized) (Bailin et al., 1999, p. 287). To put it in other terms, critical thinking is necessarily an 'intellectually disciplined process' (Scriven & Paul, 1987). Mindless application of a set of logical principles "as an exercise" will not suffice. There must be some kind of *metacognitive awareness* as well (Mulnix, 2012, p. 465).

- *Good thinking:* Critical thinking *can* be exemplified in "good" thinking, but the relationship is asymmetrical: not all good thinking is an example of critical thinking. The concepts are not equivalent.
- *Independent thinking:* This can be seen in the same way as "good" thinking: the relationship is asymmetrical. One can think independently without thinking critically.
- *Rational thinking:* These are closely connected but not identical, and critical thinking is a facet of what it means to be "rational" (McPeck, 1981, p. 12).
- *Problem-solving:* While sometimes used interchangeably, critical thinking and problem-solving are not equivalent either. Not all critical thinking we do necessarily involves solving problems. The key here is that problem-solving involves making *judgments* in order to complete tasks. These judgments can either meet or fail to meet standards of critical thinking, so in solving a problem we may engage, or fail to engage, in critical thinking.
- *Decision-making:* This can be seen in the same way as "problem-solving": 'Problem solving decision making, etc., are best seen as *arenas in which critical thinking should take place* rather than other kinds of thinking to be contrasted with critical thinking' (Bailin et al., 1999, p. 288 italics mine).
- *Higher-order thinking:* This is a vague, umbrella term referring to 'critical, logical, reflective, metacognitive, and creative thinking' (King, Goodson, & Rohani, n.d.). As a term with a wider ambit, it is not, by definition, identical to critical thinking which is narrower in scope.
- *Logical, reflective, metacognitive thinking:* These are aspects or elements of critical thinking as we shall see, but on their own not equivalent to critical thinking which has a broader ambit (see below).
- *Creative thinking:* A number of things can be the product of creative thinking: dances, dramatic work, poetry, scientific innovation, and so on. The differences are best summarized as follows: 'creativity masters a process of making or producing; criticality, a process of assessing or judging' (Paul & Elder, 2008, p. 4). Creative thinking and critical thinking are (sometimes) inseparable kinds of thinking, but they not exactly the same. I shall return to creative thinking in Part 2.
- *'Intuitive' thinking:* This is an ambiguous term. It can be considered in some sense as a form of creative thinking (if used synonymously), or random thinking (if used to mean "without reasons"). Neither are the same as critical thinking for reasons already provided. Interestingly, however, "intuitive" might also mean "beyond" reasons, or *trans-critical*, as in the case (say) of an accomplished sportsperson's placement of a ball or understanding of game strategy, or a

mother's "intuition" that her child is unwell. This kind of "intuition" is often right, grounded in background knowledge, common lore, is evidence-based, rational (albeit not always consciously so), and so forth, and yet which does not seem synonymous with critical thinking, though an important part of it. (I shall return to this kind of thinking in Part 2.)

The second, more difficult, step to take would be to define critical thinking. This is not easy. Some years ago, one scholar remarked that: 'After reading the various definitions of critical thinking, it becomes clear that agreement upon a single, concise definition of this concept is difficult, if not impossible' (Skinner, 1976, p. 293). This led one theorist to claim that critical thinking was both "over-worked" and "under-analyzed" (McPeck, 1981, p. 2), and another to call the situation like being mired in a 'conceptual swamp' (Cuban, 1984, p. 686). However, the task of defining critical thinking has been attempted and the more well-known definitions of critical thinking proposed over the past few decades have included the following (in chronological order):

- '...correct assessing of statements' (Ennis, 1962, p. 8)
- '...the propensity and skill to engage in an activity to reflective skepticism' (McPeck, 1981, p. 8) ...'the intelligent use of all available evidence for the solution of some problem' (McPeck, p. 12)
- '...reflective and reasonable thinking that is focused on deciding what to believe or do' (Ennis, 1985b, p. 45).
- '...the ability to analyze facts, generate and organize ideas, defend opinions, make comparisons, draw inferences, evaluate arguments and solve problems' (Chance, 1986, p. 6).
- '...to detect and avoid fallacious reasoning and to analyze deductive and inductive arguments' (Kurfiss, 1988, p. iii).
- 'active, systematic process of understanding and evaluating arguments' (Mayer & Goodchild, 1990, p. 4)
- '...careful and deliberate determination of whether to accept, reject, or suspend judgment' (Moore & Parker, 1991, p. 4).
- '...Thinking about your thinking while you're thinking to make your thinking better' (Paul, 1993, p. 91).
- '...thinking aimed at forming a judgment' where the thinking itself meets standards of adequacy and accuracy (Bailin et al., 1999, p. 287), or 'fulfilling relevant standards of critical assessment in carrying out thinking tasks' (p. 291).

(For other definitions, see Fisher & Scriven, 1997; Halpern, 1997, p. 4; Lipman, 1988, p. 39; Scriven & Paul, 1987; Siegel, 1988, p. 25; Tama, 1989, p. 64). Over the years, the plethora of definitions and distinctions expounded on the topic of critical thinking were thought to be a hindrance to clarity. This applied especially to the myriad of definitions developed during the first and second "waves" of the critical thinking movement in the 1970s and 1980s (Paul, 2011). Something clearly had to be done.

The American Philosophical Association convened an authoritative panel of 46 noted experts on the subject, to produce a definitive account of the concept. It resulted in the production of the landmark Delphi Report (Facione, 1990). This led to the following definition of critical thinking; a definition which is as long and comprehensive as it is dense and hard to follow:

> We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation and inference as well as explanation of the evidential conceptual, methodological, criteriological or contextual considerations upon which that judgment was based. Critical thinking is essential as a tool of inquiry. Critical thinking is pervasive and self-rectifying, human phenomenon. The ideal critical thinker is habitually inquisitive, well-informed, honest in facing personal biases, prudent in making judgments, willing to consider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in selection of criteria, focused in inquiry and persistent in seeking result which are as precise as the subject and circumstances of inquiry permit. (Facione, 1990)

While of undeniable importance as a definition of critical thinking for educational philosophers, this account of critical thinking does not lend itself easily to educational decision-making. How would a Dean of a Faculty, for example, use this definition to further embed the teaching of critical thinking in the curriculum? How useful is it, in a practical sense, in a higher education context? It is not clear that higher education can benefit from such a definition in the form it is presented. Nor does it square with the wider concerns of higher education academics about the nature of criticality. It seems, on the face of it, a definition rooted in *one kind* of critical thinking (albeit an important one); namely, critical thinking as argumentation and judgment formation.

Of course, all definitions are limiting in some respects, and one definition will never satisfy everyone. It is not easy, it seems, to define critical thinking in a way which is both comprehensive and practically useful. As Facione (the Delphi report author) himself has wryly observed, defining "critical thinking" is something like trying to define "offensive violence". We may "know it when we see it", and be able to distinguish it from its opposite—i.e., illogical, irrational thinking—but refining our ideas further than this does not allow us to easily form a clear, and unambiguous definition that would be immediately helpful in a range of contexts (Facione, 1998) (See also Bailin et al., 1999, p. 285; McPeck, 1981, p. 1).

Others have claimed, however, that without clarifying the concept of critical thinking, educators risk 'shooting arrows at target we cannot see' (Mulnix, 2012, p. 464), so a definition of some kind—even if it is limiting—is better than none at all. All concur the task is difficult. (Mulnix herself takes the tack of defining critical thinking in its simplest, unadorned form as: 'acquiring, developing, and exercising the skill of being able to grasp inferential connections holding between statements' (Mulnix, pp. 464–465). This effectively *reduces* critical thinking merely to skills in logical reasoning—"logicality"—and nothing more. For reasons outlined earlier, this will not do as a definition for the purposes of critical thinking in Higher Education.)

The miasma of definitions of critical thinking cannot on their own guide the way to greater clarity. Some analysis and deconstruction of the definitions given above

is therefore in order. I shall take the Delphi definition as the authoritative account. From this, I shall explore what it might mean if critical thinking is taken beyond customary definitions to include wider considerations, and what it might mean if all such considerations could be encompassed in an overarching model of critical thinking (see Part 2).

Among the various threads in the above definition, we can distinguish the following: critical thinking as skills in inference-making and argumentation; critical thinking as (reflective) judgment formation, and critical thinking as a variety of dispositions and attitudes. These can be broadly defined into two broad categories: *cognitive elements* (argumentation, inference-making and reflective judgment) and *propensity elements* (dispositions, abilities and attitudes) (Halonen, 1995). Note, however, the phenomenon of *action* is not mentioned in the Delphi definition. It is, in principle possible to meet the stipulated requirements of the definition and not *do* anything, i.e., not engage in critical activity of a physical kind. This will become important later. For now, let us look in more detail at each of the elements of the Delphi definition under the headings: namely, *cognitive* elements and *propensity* elements.

Cognitive Elements to Critical Thinking

The following account of the cognitive and propensity elements to critical thinking constitutes the approach of looking at critical thinking through what we might call a "philosophical" lens. In Part 2, I turn to a very different way of looking at critical thinking; namely, critical thinking through a "higher education" lens. They are very different approaches, although complementary, as we shall see. Later I shall propose a framework for the various positions in the critical thinking literature that encompasses both philosophical and higher education considerations on the topic. These positions will lie along certain axes or vectors on my model. The model will hopefully contextualize, and make clear, some of the very diverse work currently being undertaken under the auspices of "critical thinking in higher education".

Critical Thinking as Argumentation (The "Skills" View)

Critical thinking as argumentation is an essential skill for the reflective citizen as well as the student. Although, as discussed, there are varying definitions of "critical thinking" (Ennis, 1985a, 1990; Lipman, 1988; McPeck, 1981; Paul, 1992b), and considerable discussion over those definitions, for most purposes critical thinking can be defined—in part at least—as a skill, which can be learned, involving the intellectual activity of identifying, analyzing and evaluating arguments and propositions. I shall call this the "skills"-based view, or critical thinking as "logicality" (Burbules & Berk, 1999). Ennis, at one point, defines critical thinking as 'correct assessing of statements' (Ennis, 1962, p. 8), later changing his definition to incorporate reflective judgment formation (see below, "Critical thinking as reflective thinking").

Identifying, analyzing and evaluating arguments and propositions is, of course, a fundamental skill that is increasingly expected of students by educators and employers in the "knowledge" economy and is thus of economic and social importance. A major theme of the recent text *Academically Adrift*, and the one that has received the most US media attention, is that higher education has not done enough for the improvement of students' critical thinking in the sense given above (Arum & Roska, 2011). Today's students, it seems, are not as well prepared as they might be in their capacity to isolate, discuss, analyze and evaluate arguments. But why is this so important?

Argumentation and Decision-Making

Critical thinking as argumentation is ubiquitous in all professional and academic areas, but is particularly important in higher education. Higher education prepares people for employment, and instills in individuals the capacity to make reasoned arguments of all kinds throughout our lives—both as a human being in a social or academic context, and later, as a member of a corporate or professional community as an employee.

As individuals, of course, we often face complex issues about which we must weigh evidence and come to conclusions. Eventually we might make *decisions* based on those conclusions. These need not be decisions about academic issues, of course, but may be fairly domestic and mundane, e.g., whether or not to send a child to a private or public school, whether or not to invest in property or shares, or whether to subscribe to a given social, political or sporting organization. In each case, as individuals we have to weigh competing arguments—i.e., propositions in support of a given contention, and/or objections to them—and arrive at well-reasoned decisions about the truth or falsity, or the likely plausibility of a conclusion. Critical thinking as argumentation also involves distinguishing validity of argument structure from the believability or soundness of premises, distinguishing fallacious reasoning from valid reasoning, and so on.

Corporations, similarly, also have to make decisions on the basis of strong and compelling arguments, e.g., whether, and on what terms, to make appointments or large purchasing decisions. Likewise, legal practitioners, compelled by arguments for or against a proposition, and underpinned by the weight of evidence, are often required to make judgments that affect the lives of others in a very dramatic way— for example, whether or not to make a plea bargain in a criminal trial, or how, and under which circumstances, to advise a client when asked to articulate their guilt or innocence in a court of law. Medical doctors face similar difficult decisions, for example, deciding upon a course of treatment that may slow the progress of a disease yet potentially decrease the quality of a person's life. Governments also make important choices; for example, in relation to acquisition of expensive military equipment; or when making difficult, yet influential, decisions in the areas of public or foreign policy. These issues involve many arguments on both sides of difficult debates. Skills in argumentation are clearly essential in all areas of life.

Strong skills in argumentation lead naturally to a sound basis for capable decision-making. This is because decision-making is based on judgments derived from argumentation. (As noted earlier, decision-making is best seen as 'an arena in which critical thinking takes place' i.e., as a forum for critical thinking, but not as critical thinking itself.) Such decision-making involves understanding and interpreting the propositions and arguments of others, and being able to make objections and provide rebuttals to objections. Broadly speaking, then, this sense of the term "critical thinking" is seen as involving skills in formal or informal *argumentation*. Critical thinking in this sense is a fundamental skill; a skill which—on the available evidence—universities have apparently not been teaching as well as they should.

The first and most basic form of cognitive critical thinking then is *skills in argumentation*. The aforementioned definition of critical thinking provided by Mulnix is most suited to this kind of skill. It is *unadorned* critical thinking as it were. It is critical thinking in its purest form.

Critical Thinking as Reflective Thinking (The "Skills-and-Judgments" View)

Critical thinking is often defined more generally than this, however, and in practical and instrumental terms, e.g., as: 'reflective and reasonable thinking that is focused on deciding what to believe or do' (Ennis, 1985b) or as 'thinking aimed at forming a judgment' (Bailin et al., 1999, p. 287) or as 'skillful, responsible thinking that facilitates good judgment' (Lipman, 1988, p. 39). This definition focuses less on the mechanics of the skill of argumentation, and more on the *reflective* basis for decision-making and judgment calls. We might call this the "skills-and-judgments" view.

These wider senses of critical thinking are not inconsistent with 'critical thinking as argumentation', of course, and are indeed, in some sense premised on it. Being able to demonstrate "reflective thinking" for the purposes of decision-making, of course, requires skills in argumentation. However, this account does put a slightly different emphasis on critical thinking, focusing less on mechanisms of argumentation *qua* inference-making, and more on judgment formation which is at a higher cognitive level. (The relationship seems asymmetric: one can engage in idle argumentation without making a judgment towards a decision, but not vice-versa—or at least not *ideally*.)

This twist in emphasis is not insignificant, however. It marks a distinction between critical thinking as pure "logicality" (critical thinking as argumentation) and critical thinking—potentially at least—as involving much more than this. This observation will important when I come to look at critical thinking through the "higher education" lens. The relationship between the argumentation view and the skills-and-judgments view is represented in the diagram below. (Note that the dotted lines represent permeability. As we have seen, Ennis for one has articulated definitions in both spheres (Fig. 2.1).
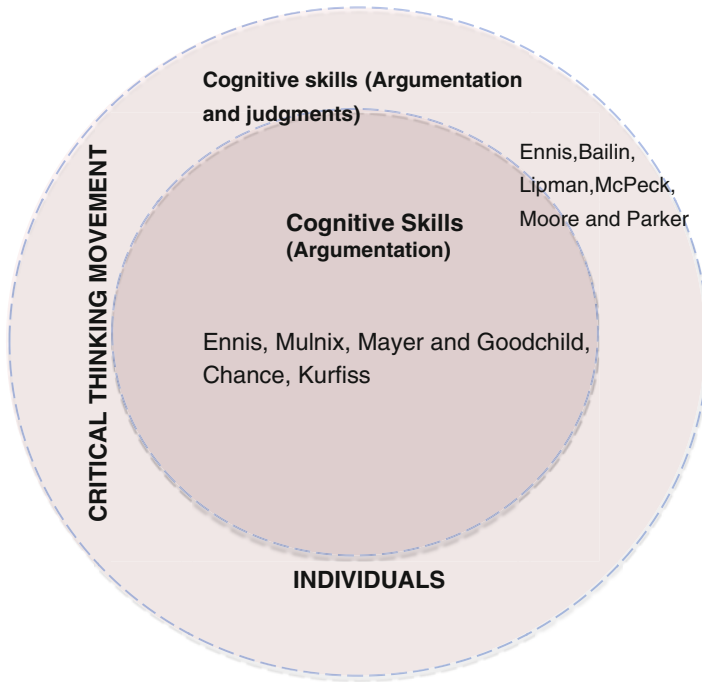
Fig. 2.1 The critical thinking movement

Both accounts are examples of critical thinking as it applies to *individuals*. They are also representative of work done as part of the so-called "critical thinking movement". A number of the aforementioned definitions provided earlier can be seen as amenable to this view of critical thinking as they all mention "skills" and/or "judgments" (see, for example, Bailin et al., 1999; Ennis, 1985b; Facione, 1998; Lipman, 1988; McPeck, 1981; Moore & Parker, 1991). Others in the list provided earlier focus more on skills in argumentation *simpliciter* (Chance, 1986; Ennis, 1962; Kurfiss, 1988; Mayer & Goodchild, 1990; Mulnix, 2012). Ennis is perhaps unique in having articulated published definitions of critical thinking encompassing both accounts (one being a development and an advance on the other).

The definition by Ennis, given above, i.e., 'reflective and reasonable thinking that is focused on deciding what to believe or do' is recognized as the established definition in the "skills-and-judgments" view. It is widely cited in the literature. However, note that Ennis' definition is somewhat limiting by not necessitating, for its application, any commitment to *action* on the part of the critical thinker. On Ennis' account, a person might exhibit critical thinking defined as 'reasonable and reflective thinking focused on deciding what to believe or do', without requiring that the decision actually be implemented (i.e., what philosophers, including Aristotle, call "weakness of the will") (Ennis, *pers. comm.* 2012).

On Ennis' account '"deciding" is assumed to lead relatively unproblematically to the "doing"' (Burbules & Berk, 1999; Ennis, 1987). However, the "doing" is not specified in his account. The same applies to the comprehensive, all-inclusive account in the Delphi report as we have seen. Clearly, however, critical thinking in higher education should involve more than judging and deciding; it should involve some actual or potential commitment to *action*. Reasonable decision-making by itself, it seems, is not sufficient for critical thinking—in other words, critical thinking in higher education is not critical judgment *in abstracto*. I shall return to this point (see "Critical thinking as action" below).

The cognitive element of critical thinking can be seen as a composite of the following related, but quite different, skills and abilities:

- *analysing arguments, claims or evidence* (Ennis, 1985b; Facione, 1990; Halpern, 1998; Paul, 1992b);
- *judging or evaluating arguments* (Ennis, 1985b; Facione, 1990; Lipman, 1988; Tindal & Nolet, 1995);
- *making decisions or problem-solving* (Ennis, 1985b; Halpern, 1998; Willingham, 2007);
- *inference-making* using a variety of standard reasoning patterns such as induction and deduction (Ennis, 1985b; Facione, 1990; Paul, 1992b; Willingham, 2007).
- *predicting* (Tindal & Nolet, 1995);
- *reasoning verbally* (Halpern, 1998);
- *interpreting and explaining* (Facione, 1990);
- *identifying assumptions* (Ennis, 1985b; Paul, 1992b);
- *defining terms* (Ennis, 1985b); and
- *asking questions for clarification* (Ennis, 1985b).

Bloom's famous six-category schema of *knowledge, comprehension, application, analysis, synthesis* and *evaluation*, can be seen in terms of a forerunner of a cognitive approach to critical thinking, with critical thinking as argumentation occupying the latter three descriptors, where "evaluation" gives rise to making reasonable, reflective judgments (Bloom, 1956; Kennedy, Fisher, & Ennis, 1991).

To this list we can add *metacognition* as a facet of critical thinking as cognitive skill. Although not a feature of argumentation per se, it is clearly necessary for it. People need to be 'brave enough to risk being wrong, and wise enough to realize that much can be learned from errors and failed solutions' (Nelson, 2005, p. xiv), and this involves *thinking about our thinking*. This can be defined as 'awareness of one's own thinking, awareness of the content of one's conceptions, an active monitoring of one's cognitive processes' (Hennessey, 1999, p. 3) or as 'the monitoring and control of thought' (Martinez, 2006, p. 696). Though there is some dispute as to the precise role played by metacognition in relation to critical thinking (some argue that it stands outside of critical thinking; others argue it is integral to it), there is little doubt that it is important for any adequate understanding of the concept (Halonen, 1995; Halpern, 1998; Kuhn, 1999; Kuhn & Dean, 2004; van Gelder, 2005; Willingham, 2007). A recent attempt has been made to devise a comprehensive taxonomy of metacognition (Tarricone, 2011).

To sum up the "skills and judgments" view in general terms, we can think of cognitive critical thinking skills as involving *interpretation, analysis, inference, explanation, evaluation*, and some element of *metacognition* or *self-regulation* (Facione, Sanchez, Facione, & Gainen, 1995, p. 3; Halonen, 1995, pp. 92–93). These facets of critical thinking are all in the Delphi list. This is sometimes collectively known as the "skills-based" view of critical thinking—as distinct from the "skills-plus-dispositions" view, which I will discuss shortly. While the "skills and judgments" view involves more than skills in argumentation (it also involves reasoned judgments as we have seen) it is sometimes known simply as the "skills-based" view in recognition of the fact that both skills and reflective judgments are both cognitive skills. Cognitive skills in critical thinking are at the core of the "philosophical" approach to the topic, and necessary—but not sufficient—to other accounts of critical thinking as well as we shall see.

An attempt has been made by the present author to plot the various skills proffered by various authors on the topic of critical thinking—from Bloom's taxonomy onwards—into a table and to cross-tabulate the results. This table is available online here **[add]**.

A Taxonomy of Critical Thinking Skills

At this point categorizing these skills would seem to be useful. I shall use the framework by Wales and Nardi (1984), and borrowed by Halonen (1995), for this purpose. Cognitive critical thinking skills can be seen as falling under four main categories: *lower-level thinking skills* (which might be called "foundation" thinking), *thinking skills* (or "higher level" thinking), *complex thinking skills,* and *thinking about thinking* or metacognitive skills. "Identifying an assumption" for example, is clearly less difficult—and requires fewer cognitive resources—than say "analysing a claim" or "drawing an inference". There might be debate about which skill belongs in which category, but there is little doubt some cognitive skills are demonstrably more sophisticated than others (Table 2.1).

There is considerable degree of unanimity in the literature on many the cognitive skills involved in critical thinking, if not the degree of importance accorded to each. In any event, the view that: (1) critical thinking is argumentation, and involves assessing statements, constructing and interpreting inferences, identifying flaws in

Table 2.1 Critical thinking skills

Lower-level thinking skills ("Foundation")	Higher-level thinking skills	Complex thinking skills	Thinking about thinking
Interpreting	Analyzing claims	Evaluating arguments	Metacognition
Identifying assumptions	Synthesizing claims	Reasoning verbally	Self-regulation
Asking questions for clarification	Predicting	Inference making	
		Problem solving	

reasoning, and so on; and (2) critical thinking is judgment formation, is a pervasive and important one. However as we shall see, despite its importance, when applied to the higher education context (as opposed to a philosophical context) critical thinking is defined far too narrowly.

Propensity Elements to Critical Thinking

A very different, but no less important, way to think of critical thinking is not just in terms of cognitive elements such as argumentation and reflective thinking, but also in terms of *propensity* (i.e., an inclination or tendency to behave in a certain way). I shall look at propensity elements in this section.

Critical Thinking as Dispositions (The "Skills-Plus-Dispositions" View)

One such propensity is the notion of a critical thinking *disposition* (Facione et al., 1995). It has long been recognized that the ability to think critically is very different from the attitude or *disposition* to do so (Ennis, 1985b; Facione, 1990), and this too needs to be considered in any attempt to define critical thinking. Dispositions have been described as 'at least half the battle of good thinking, and arguably more' (Perkins, Jay, & Tishman, 1992, p. 9).

Dispositions are sometimes defined as a "cast or habit of the mind" or "frame of mind" which is necessary for exercising critical thinking. Dispositions are not arguments or judgments, but *affective* states. They include critical thinking *attitudes* and a sense of *psychological readiness* of the human being to be critical. They are equivalent to what Passmore once called a 'critical spirit' (Passmore, 1967, p. 25), and have been defined as a constellation of attitudes, intellectual virtues, and habits of mind (Facione et al., 1995). They are internal motivations to 'act toward or respond to persons, events, or circumstances in habitual, yet potentially malleable ways' (Facione, 2000, p. 64). While not themselves skills or judgmental abilities, dispositions to think critically are seen by some to be a precursor to doing any critical thinking at all.

The notion of a disposition can be traced back to the work of the philosopher Gilbert Ryle who asserted that possession of a dispositional property was 'not to be in a particular state, or to undergo a particular change; it is to be bound or *liable* to be in a particular state' (Ryle, 1963). His classic example is glass which has a disposition to break even if it is not broken into pieces at a given moment. However, unlike glass, critical thinking is a *reflective* capacity, and is not automatic. It is the reflective capacity that qualifies a disposition as being a *thinking* disposition (Ennis, 1994; Tishman and Andrade, nd, p. 2). Dispositions, it should be noted, are different from *skills* or *abilities*—though obviously related to them—insofar as

a person might not be disposed to use their skills or abilities even if they possess them (a talented pianist might not be disposed to exercise her skill by playing, for example).

Researchers have identified the following dispositions as most important for critical thinking:

- *respect for alternative viewpoints* (Bailin et al., 1999; Facione, 1990);
- *inquisitiveness* (Bailin et al., 1999; Facione, 1990, 2000);
- *open-mindedness* (Bailin et al., 1999; Ennis, 1985b; Facione, 1990, 2000; Halpern, 1998); *fair-mindedness* (Bailin et al., 1999; Facione, 1990);
- the *propensity or willingness to seek or be guided by reason* (Bailin et al., 1999; Ennis, 1985b; Paul, 1992b);
- a *desire to be well-informed* (Ennis, 1985b; Facione, 1990).
- *tentativeness, skepticism, tolerance of ambiguity,* and *appreciation of individual differences* (Halonen, 1995).
- *seeing both sides of an issue* (Willingham, 2007). (The latter is not exactly the same as *tolerance of ambiguity*; and this, arguably, could have a cognitive element as well.)
- Paul (1992a) identified a list that includes *intellectual humility, intellectual courage, integrity, empathy, perseverance.*

Some theorists, according to Facione, consider *holding ethical standards* to be an important critical disposition, on the grounds that 'a defense attorney using critical thinking abilities and dispositions to get her guilt client acquitted would not be a critical thinker' (Facione, 1990; Halonen, 1995; Lai, 2011, p. 12). This seems plausible, and most researchers would concur with this assessment.

How Many Dispositions Are There?

The number of dispositions that are stated to exist varies widely. Ennis, for example, has distinguished between three critical thinking dispositions, and fifteen separate critical thinking abilities (Ennis, 2011); Perkins, Jay and Tishman, by contrast, identify five dispositions. Some theorists also identify an overarching thinking disposition, identified by some as *mindfulness* (Langer, 1989), *fairmindedness* (Paul, 1990), *critical-spiritedness* (Siegel, 1988), or just an overarching disposition to *think critically* (Facione & Facione, 1992). By the latter, it is meant that, not only should a person demonstrate the capacity (the cognitive skills) to seek reasons, truth, and evidence and so on—but they should also exhibit the *drive* or *tendency* to do so (Ennis, 1987, 1996). This drive or tendency is a critical thinking disposition. For Ennis, the critical thinking disposition is what *animates* or gives rise to the critical thinking skills discussed earlier.

Some scholars have gone to a great deal of trouble to provide extensive compendia of such dispositions (Facione & Facione, 1992). But the role these dispositions play in relation to the cognitive skills of critical thinking remain in dispute. Some scholars, for example, have argued that a critical thinking disposition

is not what animates or gives rise to the cognitive skills of critical thinking (as Ennis claims), but more a deep-seated *character attribute*. Siegel, for example, argues that Ennis fails to distinguish between the critical thinker as a person and their way of living from the critical thinking skills he or she exhibits. The former, according to Siegel (echoing Passmore) is a matter of "critical spirit" (Siegel, 1988).

Similarly, Paul distinguishes between critical thinking in the "weak" sense, and critical thinking in the "strong" sense (Paul, 1993). The former consists of the skills and dispositions already discussed; the latter consists of the *examined life* in which skills and dispositions have been incorporated as part of one's deep-seated personality and moral sense—in short, one's *character*. This distinction shall become important for us later as it highlights the importance of the relationship of critical thinking to personality, consciousness and one's moral sense, i.e., one's actions and behaviours in terms of relating to others. This, in turn, is less a function of, I have called, the *individual* dimension of critical thinking, and more a function of the *socio-cultural* dimension. In terms I shall refer to later, this is, I feel, an *axis dispute* about critical thinking, not a dispute about substance, i.e., it is a matter of where, on my model of critical thinking, one locates one's interest in critical thinking (and on which axis).

For now, it is probably less important to provide an authoritative list of dispositions, and to form an opinion on the role of dispositions in relation to skills, but to merely acknowledge that scholarly work is ongoing in this area and dispositions are an essential part of critical thinking research.

A Taxonomy of Critical Thinking Dispositions

To sum up this section: critical thinking dispositions might be broadly categorized as falling under (1) dispositions arising in relation to the *self*, (2) dispositions arising in relation to *others*, and (3) dispositions arising in relation to the *world*. Again, it might be debated which category a disposition belongs to (and some might belong to more than one) but it is fairly clear that there are at least three dispositional orientations (Table 2.2).

There are other ways of categorizing the dispositions. Another way of creating a taxonomy of dispositions is to divide them, as does Facione (and the authors of the Delphi report), into two categories: *approaches to life and living in general*, *approaches to specific issues/questions or problems* (Facione, 1990, p. 13). Unlike Facione, however, I suggest a forth category, that can be added to the schema given above, namely, "other", for dispositions that do not easily fit into one or other of the earlier categories (for example, "mindfulness", "critical spiritedness", etc.).

Again, like the critical thinking skills and abilities, an attempt has been made by the present author to plot the various dispositions proffered by various authors over the years on the topic of critical thinking—from Dewey's work onwards—into a table and to cross-tabulate the results. This table is available from the present author upon request.

Table 2.2 Critical thinking dispositions

Dispositions arising in relation to self	Dispositions arising in relation to others	Dispositions arising in relation to world	Other
Desire to be well-informed	Respect for alternative viewpoints	Interest	Mindfulness
		Inquisitiveness	Critical spiritedness
Willingness to seek or be guided by reason	Open-mindedness	Seeing both sides of an issue	
Tentativeness	Fair-mindedness		
Tolerance of ambiguity	Appreciation of individual differences		
Intellectual humility	Skepticism		
Intellectual courage			
Integrity			
Empathy			
Perseverance			
Holding ethical standards			

A preliminary network analysis of dispositions is provided below (Fig. 2.2). The larger circles indicate the number of dispositions noted, and the cross-linkages indicate the level of agreement between authors. On this analysis, considerable agreement exists in the dispositions suggested by Ennis, the authors of the Delphi Report, and the work of Halpern, Bailin and Facione. A number of "outlier" dispositions exist as isolated nodes (e.g., by Halonen, Siegel, Jay and Tishman, Noddings, and others), which seem to have no corresponding agreement with other authors. An account of dispositions along these lines helps to establish, by general agreement, which dispositions are more important by means of democratic consensus. However, it does not establish that "outlier" dispositions are wrong or ill-conceived.

Unlike the list of cognitive elements to critical thinking discussed earlier, there is a great deal of diversity of opinion as to what constitutes critical thinking dispositions and how they should be configured.

What Is the Relationship Between Dispositions?

Advancing what they call, a "triadic account" of critical thinking dispositions, Perkins, Jay and Tishman identify the following dispositions: the disposition to be *being broad and adventurous*; the disposition toward *wondering, problem-finding and investigating*; the disposition to *build explanations and understandings*; the disposition to *make plans and be strategic*; the disposition to be *intellectually careful*; the disposition to *seek and evaluate reasons*; the disposition to be *metacognitive* (thereby identifying metacognition as not a thinking skill, per se, but a disposition to be so inclined). They also identify three components or elements to a disposition: *sensitivity* (a perception of appropriateness); *inclination* (the felt impetus toward
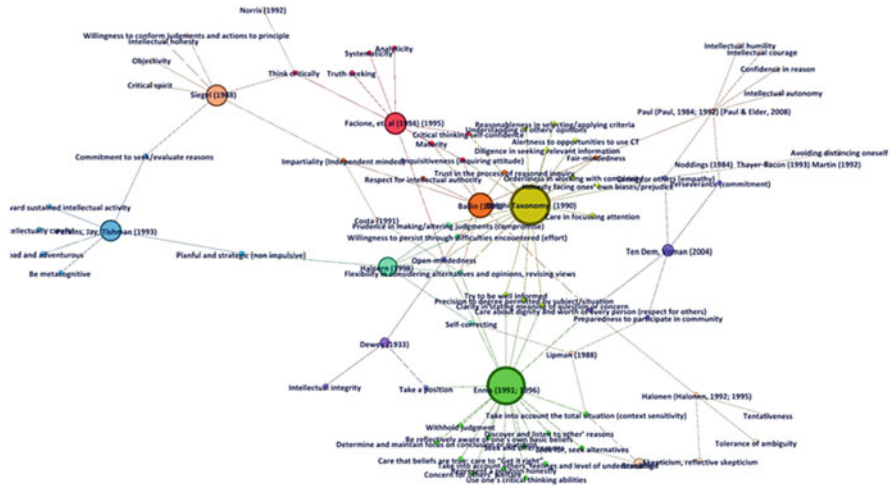
Fig. 2.2 Network analysis of dispositions [NB: This is a work-in-progress by the present author]

a behaviour), and *ability* (a basic capacity to follow-through with a behaviour) (Perkins et al., 1992). Some empirical studies have attempted to isolate which are most important, and there is ongoing research into this area (Facione et al., 1995; Ip et al., 2000).

The general point here, however, is this: there is clearly a difference between demonstrating cognitive skills in critical thinking (*qua* argumentation and judgments), and being critically *disposed* toward someone or something. In keeping with the analogy mentioned earlier, a lawyer might demonstrate impressive skills in argumentation and reflective thinking (judgments). For example, he or she could marshal clever arguments in order to acquit his or her client. Yet they might not be critically disposed towards their client, nor necessarily see his or her case as something that is important, interesting or worthwhile. Again, such a case would scarcely be a model of critical thinking.

Without critical thinking dispositions, it seems, any adequate understanding of critical thinking is not complete. And yet, broadening critical thinking beyond the confines of critical thinking-as-argumentation (critical thinking as "logicality") to include dispositions—i.e., moving from a "skills-based" view to a "skills-plus-dispositions"-based view—also holds the prospect for extending the notion of critical thinking even further. This is what I shall do in Part 2.

Critical Thinking as a Composite of Skills and Attitudes

Critical thinking has naturally been seen in terms of a composite of skills, knowledge and attitudes too—including argumentational, reflective and affective features (Boostrum, 1994; Brookfield, 1987; Facione, 1990; Kurfiss, 1988; McPeck, 1981;

Paul, 1981; Siegel, 1988, 1991; Watson & Glaser, 2008). Most theorists hold a composite account. The composite view includes both the cognitive and propensity elements discussed above. While the ability to argue and make inferences, to reflect and make judgments, and be critically disposed is all important, it is also crucial to recognize that each of these do not occur in isolation. In the case of McPeck, critical thinking involves a disposition and a skill, and 'one must develop the disposition to use those skills' (McPeck, 1981, p. 3), hence, his definition of critical thinking as 'a propensity [disposition] *and* skill to engage in an activity with reflective skepticism' (McPeck, p. 8). Similarly, Kurfiss claims that argumentation is the 'vehicle by which justification [of beliefs] is offered' (Kurfiss, 1988, p. 13).

How the cognitive and propensity elements relate to each other in any definition of critical thinking is subject to much discussion. Facione, et al., for example, postulate an interactionist hypothesis where 'the disposition toward critical thinking reinforces critical thinking skills and that success with critical thinking skills reinforces the disposition' (Facione et al., 1995, p. 17). They also claim that cognitive skills and dispositions are "mutually reinforced" and should be explicitly taught and modeled together (Facione et al., p. 4). These are complex issues, the details of which will not concern us here.

Critical Thinking as Emotions

Another propensity element that is sometimes overlooked in discussions about critical thinking is the emotions. Brookfield has noted that critical thinking is as much an emotional concept, as a cognitive one (Brookfield, 1987). Emotions are a part of our propensity toward critical thinking. He argued that both positive and negative emotions can lead to critical thinking; such as, for example, when an element of surprise leads to a state of disequilibrium, and thence to critical thinking that tends toward overcoming the state of uncertainty. This is as important to critical thinking as the cognitive and affective elements identified by others. According to Brookfield, 'joy, release, relief, and exhilaration' allows critical thinkers to 'break through to new ways of looking at our … world' (Brookfield, p. 7). The importance of emotions to critical thinking has been noted by others (Halonen, 1986). I include several dispositions in our earlier table which might be thought of as emotion-based dispositions.

Critical Thinking as Action

In a wider sense, of course, adopting a stance of *critical action* is also very important. It is not enough, for example, to be critically disposed and to have a reasonable and rational inclination "to believe or do" something, it is also important to *act* accordingly. This too is part of what we mean by "critical thinking". Being actively critical of government actions and political decision-making is a clear example of this. This might include—to take a topical example—attitudinal or

physical rebellion against the use of tax-payers money to subsidize errant corporate greed (e.g., the under-writing of the US banking system following the recent economic crisis), or actions in relation to topical issues such as globalization (witness the recent anti-government protests around the world) or protests at government inaction in relation to the challenge of climate change. To take a recent example, it could consist of the protests against military coups (e.g., in Egypt). How can this latter sense of critical thinking be distinguished and reconciled with the cognitive and propensity elements of critical thinking given earlier?

Definitions of critical thinking as they are applied in the discipline of philosophy, or the philosophy of education, and as they are applied in higher education, seem to diverge at this point. However, they remain consistent in any comprehensive interpretation of "critical thinking" as we shall see (see "A model of critical thinking in higher education").

To conclude this section: As it has been traditionally defined, by Ennis, Paul, McPeck, Lipman, and others in the critical thinking movement, critical thinking has been seen largely in terms of cognitive elements, e.g., as 'reflective and reasonable thinking that is focused on deciding what to believe or do'. However, this definition is remiss by not including in its scope any sense of actual or potential *action*. And, as noted earlier, higher education is, amongst other things, a defining feature of how we live our later lives as agents of *change*. Higher education provides us, as students, a basis upon which we not only make judgments, and construct and evaluate arguments, but also a basis upon which we live in the world as practical beings (not merely "reflecting" beings). Higher education forces us to confront the world. It educates us into *participating* in the world as an engaged citizen. While philosophers of education have their own justifiable reasons for narrowing the scope of critical thinking to cognitive and affective factors—and this narrowing has important advantages in terms of shedding light on the nature of critical thinking—it is essential that critical thinking is defined more broadly for a higher education context. This definition—for a higher education context (as opposed to a philosophical context)—would include what is sometimes called "criticality", "critical citizenship" and "critical pedagogy" (see Part 2).

A Framework of Critical Thinking Skills and Propensities

Before turning to this, however, I should place the various features of critical thinking thus far described into a conceptual framework. Fortunately, others have already done this work. The following diagram has been adapted from Halonen (1995), and isolates the two main elements of critical thinking—i.e., both cognitive and propensity elements—along with the previously outlined features of metacognition, emotions, a selection of various cognitive attitudes or dispositions, and a state of personal physiological readiness (Fig. 2.3).

On this model, the latter (physiological readiness of the person, their critical dispositions and attitudes, and their emotions) all modulate and have the capacity
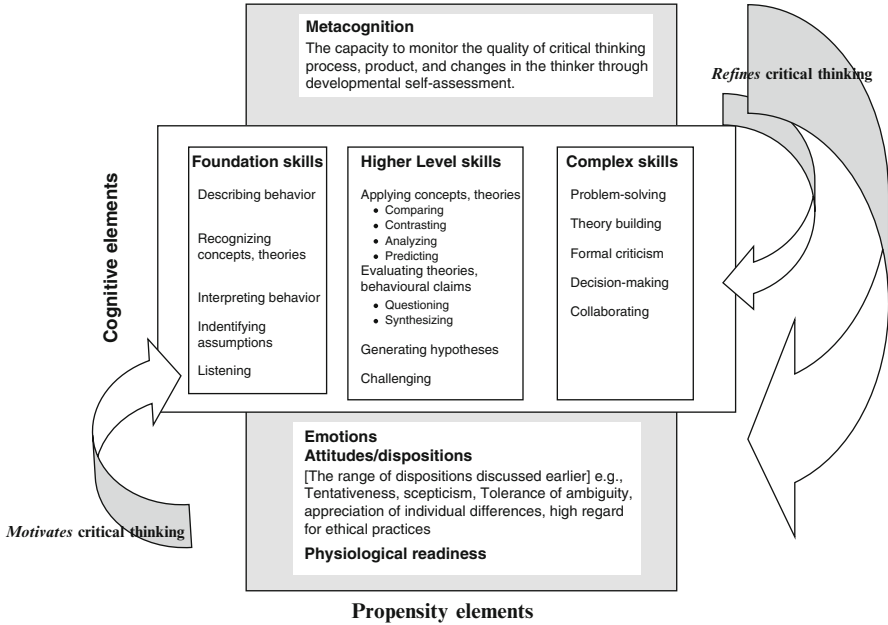
Metacognition
The capacity to monitor the quality of critical thinking process, product, and changes in the thinker through developmental self-assessment.

Refines **critical thinking**

Cognitive elements

Foundation skills	**Higher Level skills**	**Complex skills**
Describing behavior	Applying concepts, theories	Problem-solving
	• Comparing	Theory building
Recognizing concepts, theories	• Contrasting	Formal criticism
	• Analyzing	
	• Predicting	Decision-making
Interpreting behavior	Evaluating theories, behavioural claims	Collaborating
Identifying assumptions	• Questioning	
	• Synthesizing	
Listening	Generating hypotheses	
	Challenging	

Emotions
Attitudes/dispositions
[The range of dispositions discussed earlier] e.g., Tentativeness, scepticism, Tolerance of ambiguity, appreciation of individual differences, high regard for ethical practices

Physiological readiness

Motivates **critical thinking**

Propensity elements

Fig. 2.3 The cognitive and propensity influences on critical thinking (Adapted from Halonen, 1995)

to motivate and influence cognitive critical thinking skills. As previously discussed, the role of metacognition is to refine and monitor critical thinking in both cognitive and affective forms. Halonen helpfully identifies three types of cognitive critical thinking skills as we have done, i.e., "foundation", "higher level" and "complex" in the diagram below. Using the list of Delphi skills and abilities provided earlier, these are roughly equivalent to *interpretation* and *descriptive* skills ("foundation"), *explanation* and *evaluation* skills ("higher level") and *analysis* and *inference* ("complex") skills respectively. Again, the tripartite distinction in skill level is indicative that some cognitive capacities are more complex—and require more skill—than others.

In the online tables referred to earlier, I provide an extensive list of (a) the skills of critical thinking and (b) the critical thinking dispositions as noted by several authors in the field. The diagram above sums all of these in one framework (Fig. 2.3).

Dimensions of Criticality: An Axis Diagram

Another way of representing these concerns in a more general way is by using an axis diagram. I begin to build the components of this diagram below, and will add to the diagram in Part 2. The first stage of the diagram indicates the general concerns of the critical thinking movement just outlined (the shaded block) occurring along what might be called an individual "axis of criticality" (the "Y" axis). The term

"criticality" is used here deliberately as a neutral word, unlike historical loaded uses of the phrase "critical thinking". The latter has become accreted with various meanings over time, and has become hard to define as a result. "Criticality", happily, implies no particular account of critical thinking or theoretical emphasis. As we shall see in the next section, this word is becoming currency among higher education academics, and others. As we also shall see later—when I come to expand on this axis diagram—this axis will be important, as other dimensions of criticality have a quite different focus and lie on a different axes. But I submit that all, in their own way, inform our understanding of critical thinking in higher education.

The diagram below represents the critical thinking movement which I have just outlined in some detail (Fig. 2.4). This movement is largely concerned with *individual* qualities, i.e., cognitive elements or "inner" skills (argumentational skills, skills in thinking) and propensity or character attributes of the *person* (dispositions and abilities). These are inclusive of all the skills and attributes mentioned in the diagram provided above (i.e., foundation, higher-level, complex, metacognitive skills, as well as the much discussed critical thinking abilities and dispositions). These skills and dispositions are represented by separate lines radiating out from the bottom of the Y axis. This account of criticality is what we might call "critical thinking proper" or critical thinking in its traditional senses. This represents the concerns of the critical thinking movement. The "X" axis, the 'socio-cultural axis of criticality', will be expanded on in Part 2 of the paper.
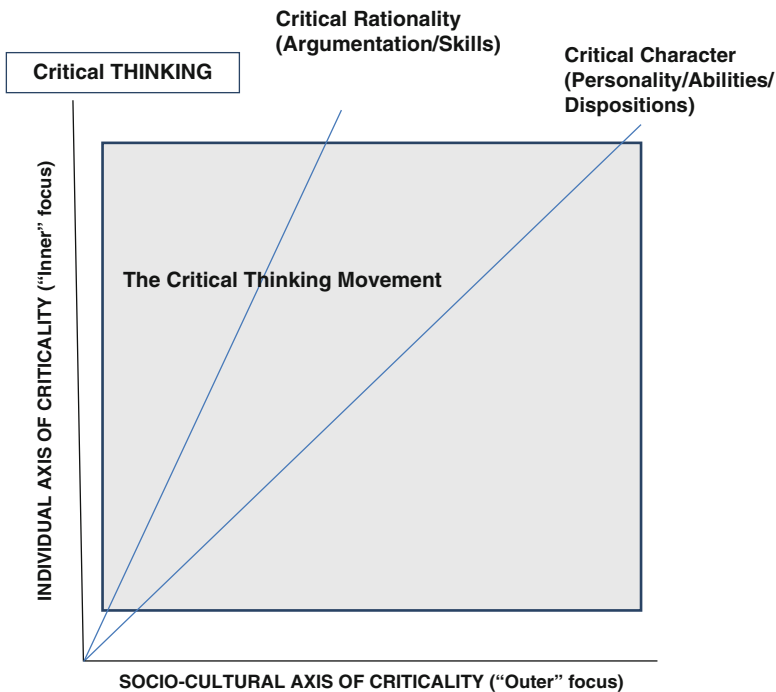
Fig. 2.4 Axis diagram: the critical thinking movement

Conclusion

Part 1 of this paper outlined the philosophical account of critical thinking in some detail, including the critical thinking movement and its emphasis on critical thinking as skills, judgments and dispositions. An inclusive framework for cognitive and propensity elements of critical thinking was provided. It was suggested that these aspects of critical thinking can be seen as dimensions of criticality. Moreover, they can be considered as "axes" in an overarching model of critical thinking in higher education. In Part 2, I develop the model further by turning to critical thinking as it is discussed, not amongst philosophers, but amongst educators; in particular, educators and professionals in Higher Education.

Part 2: The Socio-cultural Axis

Ron Barnett has defined critical thinking in terms of taking a "critical stance". He claims: 'Critical persons are more than just critical thinkers. They are able to engage with the world and with themselves as with knowledge' (Barnett, 1997, p. 1). Elsewhere, he refers to a critical stance as a disposition, as 'the ability to size up the world in its different manifestations and the capacity to respond in different ways. . . . a willingness to evaluate the world, howsoever it appears. A disposition, after all, is deep-seated. It suggests that we are in the presence of a person of a certain kind. The critical spirit, therefore, involves persons fully; it involves and takes over their being' (Barnett, p. 87).

This might seem, on the surface, to be vague and unhelpful as a wider definition of critical thinking, and seems to conflate skills and dispositions (see Part 1). However, the definition requires some unpacking in the context not of "critical thinking" per se, but of "criticality". This leads us to yet another account of critical thinking to those previously discussed; one which broadens the notion of critical thinking even further from both the "skills-based" view and the "skills-plus-dispositions" view. This is the "skills-plus-dispositions-plus-actions" view.

This part of the paper will outline this and two other accounts of critical thinking in Higher Education before articulating a formal model of critical thinking in higher education.

Critical Thinking as "Criticality"
(The "Skills-Plus-Dispositions-Plus-Actions" View)

The interpretation of "critical thinking" used amongst higher education scholars is sometimes expressed in terms of the term *criticality*. "Criticality" is a term of fairly recent origin; a word deliberately distinct from the traditional expression

"critical thinking", which—after half a century of debate and discussion—is now a loaded and over-used. The term "criticality", by contrast, attempts to provide an ambit perspective of the concept of critical thinking incorporating argument, judgment/reflection and critical action. It also extends beyond the individual to the individual's participation in the world, i.e., in the form of responsible citizenship. This is a concept of critical thinking involving students reflecting on their knowledge and simultaneously developing powers of critical thinking, critical self-reflection and critical action—and thereby developing (as a result) critical *being* (Barnett, 1997, 2004; Johnston, Ford, Mitchell, & Myles, 2011). "Criticality", not unlike, "critical thinking" is, in some quarters, gaining its own scholarly industry.

"Criticality", although not an established definition of critical thinking in use by the critical thinking community, and rarely used at all by philosophers (although see Burbules & Berk, 1999; Paul & Elder, 2001) nonetheless constitutes a unique sense of "critical thinking" increasingly in use and widely discussed in higher education circles (see, for example, the number of publications arising from "The Criticality Project") (The Criticality Project, 2013). It is important therefore that it is explained clearly.

What Is "Criticality"?

What is "criticality"? Broadly speaking, criticality comprises—and is a composite of—three things: *thinking, reflecting* and *acting*. In emphasizing "action" in addition to thinking (in the form of argumentation and reflective judgment), "criticality" might thus be seen, and conceived of in relation to established definitions of critical thinking as *trait:* the exercise of which is critical thinking as customarily defined, say, as 'reasonable reflective thinking focused on deciding what to be or do' (Ennis, 1985b, p. 45). That is, while a critical thinker can be disposed to think critically, in practice this assumes that he or she exhibits a *trait* to do so, and to act accordingly. This trait is criticality. "Criticality" requires that one be moved to *do* something (Burbules & Berk, 1999, p. 52). Ennis himself has acknowledged that this concept is missing in his well-known definition of critical thinking (Ennis, *pers. comm.* 2012) While skills and dispositions are crucial for critical thinking, they are not sufficient unless action is added. To adapt a famous line from Kant: critical thinking without skills is empty; criticality without action is blind.

An Example of "Criticality"

The concept of criticality as a trait—as composite of critical thinking, critical reflection and critical action—has been made concrete by the use of a famous photograph as a frontispiece of Barnett's book *Higher Education: A Critical Business* (1997). The photograph depicts a student in front of a line of tanks in Tiananmen Square in 1989. Most people have seen this photograph; indeed, it is

one of the defining photographs of the latter part of the twentieth century. How does the photograph demonstrate critical thinking as "criticality"?

Using this photograph, Barnett implies that higher education should be (if not always in practice) an educational process involving a composite of *thinking, reflecting* and *action*. "Critical thinking", in the established cognitive sense proposed by philosophers such as Ennis, Siegel, Lipman, McPeck and others, is an important, but by itself inadequate, as a way of capturing what higher education can be *at its best*. Barnett describes this established sense of critical thinking as 'thinking without a critical edge' (Barnett, 1997, p. 17). Higher education can potentially do more than teach students how to demonstrate (for example) 'reasonable reflective thinking focused on deciding what to believe or do' i.e., critical thinking as skills and judgments. It can also prompt students to take *action*, and to demonstrate a socio-political stridency against established norms or practices with which they are confronted. This, it is argued, is more than what is offered by the critical thinking movement in relation to skills in critical thinking; it is tantamount to the development of critical *beings*.

This is most dramatically demonstrated in the photograph of the student protester in China, who was, against all odds, acting as a critical being. Critical thinking, in this very broad sense, *qua* criticality, is an emerging concept in higher education scholarship. It expresses the yearning that higher education—in its most developed form at least—functions to educate citizen to "do" something critically as well as "be" a critical thinker, and not merely to "reflect" or "judge" critically (still less merely to "argue" critically). In embracing criticality, higher education attempts to embrace a higher-order sense of "critical thinking".

This is a sense of "critical thinking" that—while not inconsistent with established definitions—strives to extend them from the philosophical sphere of cognitive skills and dispositions, to the sphere of practical application—i.e., critical thinking as a trait. It extends beyond the individual and his or her cognitive states and dispositions to the individual's participation in society as a critically-engaged citizen-in-the-world. Note that it also includes a *moral* and *ethical* dimension to critical thinking. After all, a critical thinker does more than reason; they also *act ethically* on the basis of their reasoned judgments. The Chinese student in front of the tank was doing something that he thought was morally *right*. Moreover, it was moral rightness that was beyond deliberate weighing of pros and cons to arrive at a decision; in fact, his action was *trans-critical*. Had the student rationally considered for a moment what he was about to do, he would almost certainly had not done it. This action could be considered an *instinctive* action in response to the perceived "wrongness" of the situation. I shall return to this towards the end of the paper.

In developing this argument for the criticality dimension, Barnett claims that *critical thinking, critical reflection*, and *critical action* could be thought of as three interlocking circles in the form of a Venn diagram (see below). It is important, according to Barnett, that they be regarded as interlocking—but not as entirely congruent with each other; otherwise, the space for each of them to work (including "critical thinking" in the cognitive sense) would be lost (Fig. 2.5).

Fig. 2.5 The intersection between critical reason, critical self-reflection and critical action (Barnett, 1997, p. 105)
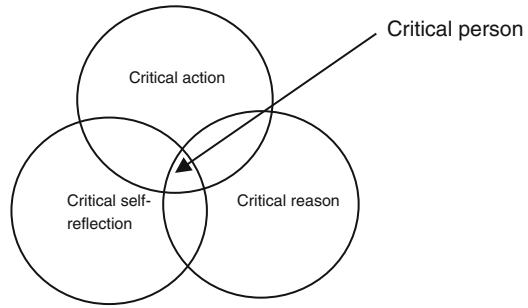
"Thinking" critically, "reflecting" critically, and "acting" critically (and being "critically disposed") are subtlety different concepts, and require a different emphasis; and one can be a "critical thinker" in all of these ways jointly, or in each of these ways separately. Just as we saw in Part 1 that a lawyer could demonstrate critical thinking *qua* argumentation and reflection without having a critical disposition, so could a lawyer demonstrate cognitive skills in critical thinking and reflecting, and critical dispositions, without the necessary and appropriate commitment to *action*. That is, he or she might be disposed to think critically about their client, but not be willing to do anything about it. Without action, however, it is not clear that it would be a wholly satisfactory case of critical thinking. Just as the importance of skills and dispositions was an important insight of the critical thinking movement, the *centrality of action* is the fundamental insight provided by "criticality" theorists. In Part 1 we saw the importance placed on critical thinking in terms of skills and dispositions. Now we see the importance of including critical *action*.

The multi-faceted nature of critical thinking is, I suspect, part of the reason that the concept of critical thinking is confusing, and hard to define. Perhaps this is why—in the context of the discipline of Higher Education—critical thinking is often seen as a "wicked" competency, that 'cannot be precisely defined, takes on different shapes in different contexts, and is likely to keep on developing' (Knight, 2007, p. 1). Another reason is that "critical thinking" is used as a concept in very different ways, and for different purposes. Indeed, even within the sphere of critical thinking in higher education, the term is used differently by philosophers and higher education professionals, as we have seen.

The respective concerns of educational philosophers and higher education scholars in relation to the topic of critical thinking are different, and have a quite different explanatory purpose. The work of Ennis, Paul, McPeck and others aims to identify the philosophical elements of what a critical thinker *is* or *should be*; the work of Barnett—and those interested in criticality—aims to identify what a critical thinker *does* and can *become*. In turn, the implications for higher education on producing critical beings—prepared to act and critique social norms—also holds out a promise for what *higher education* can be—which, demonstrably, given the "corporate" nature of the university, it is not at present (Cowden & Singh, 2013). Together, as we shall see, these separate and complimentary accounts provide a potentially insightful view of the nature and concerns of critical thinking in higher education.

Educating for Criticality

"Criticality" then is a wider concept than "critical thinking", as it is customarily defined by educational philosophers. To some extent it subsumes it. One outcome of this wider concept being taken up, of course, is that it suggests a wider set of responsibilities on higher education professionals, i.e., teachers and academics, than that of (simply) imparting skills in argumentation, or developing in students a capacity for rational "reflection" or decision-making, or cultivating critical thinking dispositions. Educating for criticality—as opposed to education merely for critical *thinking*—holds out a sense that higher education can become (more) a process of *radical* development than merely a process of education; it captures a sense of enabling students to reach a level of what Barnett calls "transformatory critique" (i.e., to live and breathe as a critical thinker; to become an *exemplar* of what it means to be a "critical being"). (see Barnett, 1997, pp. 103–115)

Regardless of the various terminology and definitions used throughout history, "critical thinking"—however it is defined—is recognized by all as vitally important in terms of developing the skills necessary for individuals to appropriately understand, reflect on, and engage with important issues. This, it is hoped, leads towards the ultimate end of developing and enabling effective and responsible citizenship, i.e., to become an upstanding, engaged, and fully participating, and flourishing member of society (Ten Dam & Volman, 2004). As noted in our discussion of the Chinese student, educating for criticality, to produce a *critical being*, not merely a critical thinker, also has a *moral* and ethical dimension. In educating for critical citizens, we take it for granted that critical citizens will behave justly, will respond to situations morally, and will act responsibly (albeit critically, in reaction to perceived wrong-doings). This, criticality theorists argue, is as much a part of critical thinking—and a consequence of critical thinking—as argumentation, dispositions and attributes. Indeed, it might be seen as the preeminent role and function of higher education. I return to *critical being* later.

The Axis Diagram Revisited

We can now see the place of the "criticality" dimension in our axis diagram and its relationship to the critical thinking movement. The criticality dimension is represented below as a shaded block in relation to the concerns of the critical thinking movement (CTM). For simplicity, I shall call this new dimension "The criticality movement" (CM). However, this is an attenuated sense of the word "movement". The criticality movement, as I am calling it, is less a formal movement—understood as a wide-spread "call to action"—as a set of concerns held by a number of higher education academics in reaction to traditional accounts of critical thinking (i.e., the CTM). It could be considered part of "third wave" theorizing (Paul, 2011). Nonetheless, it is helpful to consider it a movement, albeit a movement with a much smaller, through growing, influence.

The concerns of the criticality movement arise in reaction to the narrow emphasis of previous accounts of critical thinking. These previous accounts view critical thinking in terms of individual skills, dispositions and abilities. While proponents of the criticality dimension certainly do not eschew these important individual facets of critical thinking entirely (indeed, they endorse their importance), the "criticality" perspective adds something new. It adds the dimension of *action* to the mix. This is represented by the addition of the social-cultural axis (the "X" axis) of critical thinking shown below, and in what I note here as "Critical Doing".

However, given our earlier discussion, there is more to it than action. Unlike the views of critical thinking as adumbrated by proponents of the critical thinking movement—what I might call—Critical Thinking proper (e.g., the work of Ennis, McPeck, Siegel, Paul and others), for the criticality theorists the *ethical* dimension is also important to critical thinking. Ethical decisions are, of course, usually (if not always) accompanied by ethical *actions*. This is represented by the *critical virtue* axis below. Note in the diagram that the CTM, with few exceptions, does not include the action and morality dimension in their considerations of critical thinking. Therefore these axes do not intersect with the CTM, though they do intersect with the CM.

It is important to stress that those sympathetic to criticality do not disregard argumentation skills, and critical thinking dispositions as in any way unimportant, dispensable, misleading or redundant. These, they agree, are central features of critical thinking. Indeed, the shaded bloc representing the criticality account below overlaps these axes of critical thinking in the diagram. However, "criticality", as they understand it, comprises far more than critical *thinking*, it also involves *doing*. This, they feel, is under-reported and not acknowledged as it should be. Unlike the CTM, the CM includes critical actions and critical virtue as additional facets of criticality. These dimensions too must be included in any adequate account of critical thinking as it applies to higher education. I shall revisit the axis diagram below yet again following a brief discussion of another facet of critical thinking in higher education, namely, critical pedagogy (Fig. 2.6).

Critical Thinking as Critical Pedagogy (The "Skills-Plus-Dispositions-Plus-Actions-Plus-Social Relations" View)

Critical pedagogy is defined as the use of higher education to overcome and "unlearn" the social conditions that restrict and limit human freedom. According to one of its major proponents, it is 'an educational movement, guided by passion and principle, to help students develop consciousness of freedom, recognize authoritarian tendencies, and connect knowledge to power, and the ability to take constructive action' especially in relation to education and society at large (Giroux, 2010).
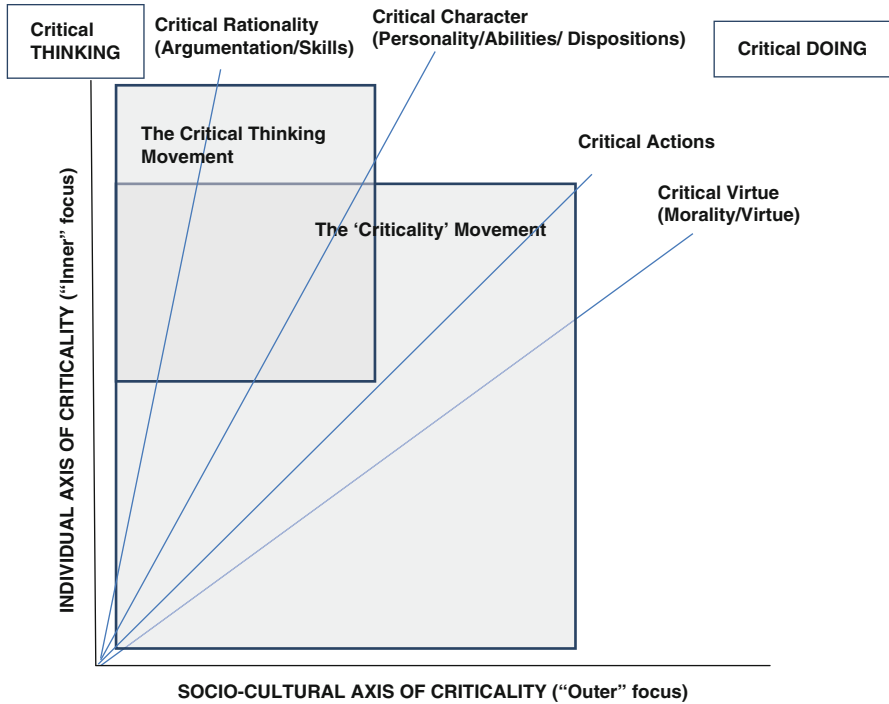
Fig. 2.6 Axis diagram: the critical thinking and "Criticality" movements

Like the approach taken by Barnett, Johnston, and others in their account of "criticality", critical pedagogy takes the view that critical thinking needs to be broadened beyond skills and dispositions. It sees the account of critical thinking as comprising skills-plus-dispositions as a view very much concerned with the individual. Like the adherents of the criticality approach, however, the critical pedagogues include the importance of *action*. However, unlike adherents of the criticality approach, they consider *social relations*—not merely actions—to be a vital factor for critical thinking. This broadens the notion of critical thinking even further than any of the views previously discussed. This broadening, depending on one's perspective, either illuminates or confuses the discussion about the nature of critical thinking as we shall see.

This is clearly an extension of Barnett's account of the radically transformed student; indeed, it extends radical educational transformation to *society at large*. The critical pedagogues see critical thinking to be not about argument analysis, nor dispositions, nor individual actions (although these too are important). They see critical thinking to be principally about 'the critique of lived social and political realities to allow greater freedom of thought and action' (Kaplan, 1991, p. 362). From Marxism, they borrow the concept of political and economic oppression, and the need to liberate human freedom; from psychoanalysis, they take the importance

of the decoding of cultural forms of knowledge; from phenomenology, the imbibe the idea of "lived experience" (Kaplan, 1991). This concatenation of theories and ideas results in a view of critical thinking that is a further extension and corrective to earlier accounts described in this paper.

The key theorists in this area are Freire (1972), McLaren and Hammer (1989) and Giroux (1994, 2005). In an illuminating article by Burbules and Berk (1999), the following distinctions are made between the critical thinking movement (incorporating the "skills-based" view of critical thinking and the "skills-plus-dispositions" view), and the critical pedagogy movement. I will overview these distinctions before returning to my developing model.

The Aim of Critical Thinking

The critical thinking movement begins from a view of seeing the critical person as a 'critical consumer of information' (Burbules & Berk, 1999, p. 48). This involves using his or her rationality to adjudicate between truth and falsehood, identify hasty generalisations, expose unreliable authority, distinguish between reliable and unreliable information, to carry out argument analysis, and so on. The aim of the movement is to create taxonomies of the skills and dispositions required to achieve the aim of being critical thinkers and to use and inculcate those skills and dispositions in teaching. This naturally emphasises the role that higher education can play in incorporating these skills, and cultivating these dispositions in the classroom. The aim of the critical thinking movement—at least during its first "wave"—was to put formal and informal logic at the service of pursuing clear and dispassionate thinking (Paul, 2011).

The critical pedagogy movement (CPM) begins from a very different starting point. The first-wave theorists took the adjective "critical" to mean "criticism" (i.e., pointing out weaknesses with a view to correcting some claim or argument). Their aim was putting logic at the service of clear thinking. The critical pedagogues, by contrast, took "critical" to mean "critique" (i.e., identifying other dimensions of meaning that might be missing or concealed behind some claim or argument) (Kaplan, 1991, p. 362). Their aim puts logic at the service of transforming undemocratic societies and inequitable power structures. Their aim is not simply educating for critical thinking, but educating for *radical* pedagogy. They see the critical person as a reactionary against the ideological hegemony of capitalism; a hegemony which foists conditions favourable to the maintenance of the capitalist system onto unwitting members of society. They see advertising, for example, as encouraging and fostering increased material consumption whilst simultaneously reinforcing the myth that large corporations are there to serve their customers, when they are, in fact, serving their own interests, and maximising profit, often at the expense of both customers and the social good (Burbules & Berk, 1999, p. 50).

The critical pedagogy movement sees higher education, as it stands, as part of the entrenched capitalist ideology that reinforces and legitimizes these social conditions. This occurs in a number of ways, most obviously in "the banking

concept of education" in which 'education ... becomes an act of depositing, in which the students are the depositories, and the teacher is the depositor' (Freire, 1972, p. 363; Kaplan, 1991). On this account, the student is assumed to be both ignorant and a supplicant. It can also be seen in the emphasis of higher education in producing—not intellectually-challenged—but vocationally-trained workers ready-made for a capitalist social system; i.e., pliable minions conforming to social expectations and meeting socio-political ends.

It can also be seen in the direction taken by the "corporate" university of the twenty-first century in viewing education as a marketable "product" and seeing students as "consumers" or "clients" The emphasis on "accountability" and renewed emphasis on testing in the contemporary higher education can also be seen as a feature of a consumer-driven model of the modern university. This has recently been disparagingly described as a "Sat-Nav" educational system: a commoditized system of exchange between universities and their "customers" that results in a failure of tertiary institutions to provide real intellectual challenges to students in a way which erodes institutional educational integrity (Cowden & Singh, 2013).

The critical pedagogues are stridently opposed to such moves, and see critical thinking as a means of reacting to this direction in higher education today. They believe that the aim of education should, instead, be about turning students against the idea of being trained for the economic needs of large corporations. This can be achieved by making students and their teachers more *reactionary*—to create "critical intellectuals" (Giroux, 1988). This is clearly a very different, although no less important, sense of "critical thinking" than we have looked at to date.

This attitude toward the corporate university, i.e., its serving an entrenched capitalist, socio-political agenda, is no mere socialist paranoia on the part of the critical pedagogy movement. It is worth noting again that as recently as 2012, there was strident opposition to the teaching of critical thinking skills, and any other higher order thinking skills: 'which focus on behaviour modification and have the purpose of challenging the students' fixed beliefs and undermining parental authority'. This opposition to critical thinking in the classroom was part of the Texas-based Republican party platform, an official policy that was widely condemned and quickly retracted (Cuban, 1984, p. 12; Morse, 2012; Strauss, 2012). So there is some basis for the critical pedagogy moment as being concerned about the existing political aims of higher education. They see it as already serving a fraught socio-political agenda. They would see the recent republican attack on critical thinking is evidence of it.

The critical pedagogy movement sees the role of higher education, not as reinforcing, but as dispelling these uncritical attitudes and questioning these assumptions. They see the role of higher education as working within higher educational institutions to identify and critique power inequities in society, the myths of opportunity in capitalist economies, and 'the way belief systems become internalized to the point where individuals and groups abandon the very aspiration to question or change their lot in life' (Burbules & Berk, 1999, p. 50). "Thinking critically", for them, is not principally a matter of cultivating certain skills and dispositions, but recognizing, and critiquing, *pedagogical relations* in society that maintain the capitalist *status quo*.

Critical Thinking for Action

Another difference between the critical thinking skills movement and the critical pedagogy movement is the commitment to action. I have already identified the importance of action in the previous section.

As we have seen, the authoritative definition of critical thinking widely adopted by many in the critical thinking movement assumes—but does not formalise— a commitment to action. Ennis' definition of critical thinking as 'reasonable reflective thinking focused on deciding what to believe or do' assumes 'an overly direct connection between reasons and action', and that "believing" will lead unproblematically to "doing" (Burbules & Berk, 1999, p. 52). We have seen that this point highlights strains within the critical thinking movement, and a launching point for the work of Barnett (1997) and his analysis of the tripartite account of critical thinking, critical reflection, and critical action.

Like Barnett, the critical pedagogy movement sees action as an intrinsic, not separable, aspect of critical thinking. However, they take critical action much further. They see action as important not merely for encouraging personal individual reaction to events before one, but as a justification for wholesale social and political *change*. As Burbules and Berk put it, for them: 'challenging thought and practice must occur together ... criticality requires *praxis*—both reflection and action, both interpretation and change ... Critical Pedagogy would never find it sufficient to reform the habits of thought of thinkers, however effectively, without challenging and transforming the institutions, ideologies, and relations that engender distorted, oppressed thinking in the first place—not an additional act beyond the pedagogical one, but an inseparable part of it' (Burbules & Berk, 1999, p. 52).

Teaching for a Critical Mindset

Another difference between the two movements is this: The critical thinking movement sees the objective of teaching critical thinking skills and dispositions as conditions for fermenting a critical mindset among students as part of a general agenda for improving the aims of higher education. They see teaching critical thinking as allowing students to distinguish between truth and falsity; misleading and doctrinal information; and alerting them to fallacies of thought and flawed assumptions. They see critical thinking as an emancipatory practice of providing tools for students to "think for themselves" and "form their own conclusions".

The critical pedagogy movement, however, sees the teaching of critical thinking very differently. They see it as a way of alerting students to their indoctrination and their role in serving an entrenched capitalist political system. Moreover, they see the role of teaching critical thinking as alerting them to the social conditions that have led to this.

For the critical thinking movement, this is a flawed attitude. It amounts to taking for granted and prejudging the conclusions to an issue. It is itself equivalent to indoctrination. However, for the critical pedagogy movement, raising the issue of the

social conditions of freedom is *essential* to critical thinking. "True" critical thinking, for them, involves liberation from an oppressive system as a condition of freedom of thought. As Burbules and Berk put it: 'Critical thinking's claim is, at heart, to teach how to think critically, not how to teach politically; for Critical Pedagogy, this is a false distinction ... self-emancipation is contingent upon social emancipation' (Burbules & Berk, 1999, p. 55). In the words of the "Critical Pedagogy Collective" (echoing Dewey): 'Education is not preparation for life—education is life itself' (The Critical Pedagogy Collective, 2013).

Critical Thinking as Conformity

It will be clear by now that the aims of the critical thinking movement and the critical pedagogy movement are very different. They form different axes on our diagram as we shall see. These differences mean that the one movement sees the other in often hostile terms (Burbules & Berk, 1999, pp. 53–54). However, I suggest that these hostilities amount to being *axis disputes*. They amount to seeing alternative perspectives of critical thinking from the vantage points very different from one's own. More on this later.

   In not directly addressing political concerns, the proponent of critical pedagogy sees the objectives of the critical thinking movement as being evidence for (uncritical) conformity to a certain social system. In their view, by being politically and socially impartial, the critical thinking movement ignores one of the central reasons for the *necessity* of critical thinking. According to the critical pedagogy movement, the critical thinking movement 'enshrine[s] many conventional assumptions as presented by the popular media, traditional textbooks, etc., in a manner that, intentionally or not, teaches political conformity' (Burbules & Berk, 1999, p. 56). By contrast, the critical thinking movement sees the critical pedagogy movement as dogmatically "uncritical" about their own major assumption, i.e., that the sociopolitical system is the reason for the oppression of the working class, and evidence of many of the social ills in society today.

   The following table summarises and clarifies some of the differences between the two movements in relation to critical thinking (CT) (Table 2.3).

The Axis Diagram Revisited Again

Now we have looked at the critical pedagogy movement (CPM) and distinguished it from the tradition of the critical thinking movement we can position it too on our axis diagram (see below).

   The critical pedagogy perspective clearly comes under our category of "Critical Doing" as does the criticality movement. The reason for this is that both emphasize *action*. However, unlike the criticality movement, which has a non-specific and undirected use of the term "action", the critical pedagogy movement is strident in

Table 2.3 A comparison between the critical thinking movement and the critical pedagogy movement

	Critical thinking movement (CTM)	Critical pedagogy movement (CPM)
Aim of CT	To use reasonable and rational reflection to interpret the world, resulting in the liberation of the intellect	To emancipate people from oppressive conditions of the capitalist system, resulting in the liberation of political consciousness, leading to political *praxis*
Scope of CT	To cultivate critical thinking skills and dispositions, e.g., to bring about 'reasonable, reflective thinking focussed on deciding what to believe or do'	To bring about social action to overcome—or at least question and critique—oppressive social conditions ("relations of domination")
Involvement	To use others (teachers, fellow students, resources) as a means to cultivating cognitive skills and critical dispositions	To use dialogue as a means of developing confidence, literacy, and thereby eliminating powerlessness
Purpose of teaching CT	To teach critical thinking skills and dispositions with a view to creating better thinkers	To bring about social justice: to make students aware of indoctrination, and the social conditions that led to this, with a view to allowing them to escape them
Agenda of CT	None: cultural, moral, ethical, political issues are precluded as necessary topics for discussion (Critical thinking can be done in principle using abstract formal mathematical entities and variables, e.g., 'p' and 'q'.)	Political issues are essential to critical thinking and are the reasons why it is vital to do and promote critical thinking
Attitude	"Impartiality" on issues is a key virtue and is itself a critical thinking disposition	"Impartiality" on issues is evidence of domination and oppression
Wider context	Non-relational. Social and political context is independent of critical thinking (though of course proponents of the CTM are concerned about social conditions)	Relational. Social and political context is intrinsic to critical thinking
Criticism of the other	CPM is blind to critical thinking about own premises and assumptions	CTM is insufficiently aware of its own political conformity

Adapted from Burbules and Berk (1999)

its calls for a specific form of action (and specifically, action in relation to social conditions). I shall call this "Critical Participation". "Doing", in an abstract sense, might be merely undirected, or pointless. "Participation" carries with it a sense of *purposeful* doing. It carries with it more of a sense of engagement than simply critical *doing*. It requires *engagement* with the thing one is acting for, in relation to, or on behalf of. As we have seen, in the case of the critical pedagogues, this "doing" is related to the questioning and reconfiguration of oppressive social conditions. This is central to the aim of theorists such as Freire, Giroux, McLaren and others. But it is also central to related socio-cultural agendas. "Critical participation" is also the natural home for the *critical citizenship* theorists, and those sympathetic to *critical feminist* approaches to critical thinking, with their emphasis on criticality as a socially constructed phenomenon, which is inextricably connected to the process of becoming a member of a certain community. Indeed, the metaphor of "participation" is often used in this connection (Salomon & Perkins, 1998; Sfard, 1998; Ten Dam & Volman, 2004).

Note that "Critical Participation" is oriented on our diagram spatially closer to the category of "Critical Doing" compared to the category of "Critical Rationality" (it has a stronger "outer" than an "inner" focus). It is positioned closer to the "X" axis. However, again, there is a difference in the degree of commitment here. The "participation" facet of criticality, in turn, has two dimensions: (1) *awareness* of oppression (known in the literature "critical consciousness" or—as it is known in the critical pedagogy literature—*conscientization* (Freire, 1972, 1973); and (2) a more practical dimension, the *resistance* to oppression (demonstrably, to "resist" something one needs to be aware of what one is resisting). This is sometimes known in the critical pedagogy literature as *praxis*. Both these vectors are represented in the diagram below (Fig. 2.7).

To the critical pedagogues, the action of resistance to oppressive conditions, by means of action against (amongst other things) educational indoctrination is essential. However, this commitment is foreign to the aim of proponents of the critical thinking movement (even if they happen to agree with it in principle). The CTM (the "Y" axis), in fact, appears *neutral* with respect to social conditions. Reactionary views on educational oppression have little, if anything, to do with the literature on critical *thinking* per se. Discussions of the cognitive and propensity elements of critical thinking, it seems, can and is often discussed independently of the socio-cultural axis of criticality.

However, this separation of concerns belies deep similarities. As Burbules and Berk note: 'each invokes the term "critical" as a valued educational goal: urging teachers to help students become more skeptical toward commonly accepted truisms. Each says, in its own way, "Don't let yourself be deceived". And each has sought to reach and influence particular groups of educators ... They share a passion and sense of urgency about the need for more critically oriented classrooms. Yet with very few exceptions these literatures do not discuss one another' (Burbules & Berk, 1999, p. 45).

The fact that the respective literatures do not "discuss each other" is no reason not to include them both in a comprehensive overview of the relative concerns of those interested in critical thinking. I have tried to do this in this paper. Seeing these
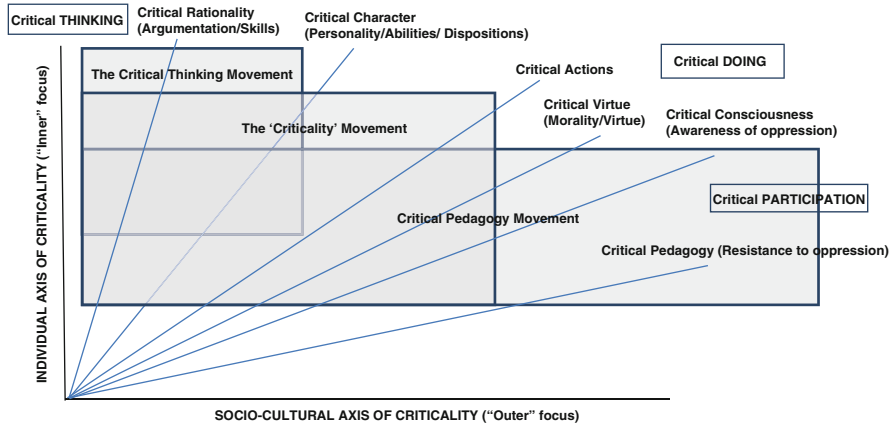
Fig. 2.7 The critical pedagogy movement

respective concerns as different axes or dimensions on one model of critical thinking in higher education, in fact, has intrinsic benefits. It helps in understanding where—in the panoply of possible positions on critical thinking on offer—various theorists are located. It also helps in unraveling axis disputes and axis alignments. For example, note that the critical pedagogy movement is largely disinterested in the concerns of the critical thinking movement, and vice-versa (the shaded sectors in the diagram do not overlap). However, there are synergies between the CPM and the criticality movement as indicated by their focus on action. All these concerns are demonstrably relevant to critical thinking in higher education, broadly conceived even if there may be dramatic differences in matters of detail. The model helps us see these differences. I shall consider another important axis dispute at the end of the paper.

Critical Thinking as Thinking Differently (The "Creativity" View)

Where to from here? Burbules and Berk, interestingly, see the widening and deepening of critical thinking in terms of "criticality", and thence "critical pedagogy", to hold promise for yet another important sense of "critical thinking". In a section of their paper headed 'Towards an alternate criticality', they attempt to articulate such an account by focusing on the phenomenon of critical thinking as *practice*. They call this account "Critical thinking as thinking differently". I shall call it critical thinking as *creativity* or *openness* (CAC/O). This account is necessarily rather speculative, but it seems to hold promise of a unique and coherent account of its own. As I am aiming to provide a comprehensive model of critical thinking in higher education, I should include it.

Burbules and Berk see various movements in the critical thinking literature in terms of any other ideology, e.g., Marxism, fascism, and so on. They claim that all ideologies have an unavoidable appeal and presence; a presence which has a hold over people who are sympathetic to their world-view. All ideologies influence us to the extent that they make us prepared to ignore features of phenomena that lie outside the purview of a given ideology. This, they rightly note, is the main characteristic of ideologies.

Burbules and Berk claim that both the critical thinking movement and the critical pedagogy movement are each themselves examples of an "ideology". Neither is willing to acknowledge the virtues and place of the other as legitimate contenders in any discussion about the nature of critical thinking. Both are concerned with their own preservation. Both are concerned with their own 'reification and stasis' and lack reflective criticism about their limitations. They 'lack . . . opportunities to think differently . . . and are less able—and less motivated—to pull up their own roots for examination' (1999, p. 61).

They suggest that this recognition—i.e., that theories about critical thinking are themselves ideologies—is a basis for a new way of thinking about critical thinking. The potential for doing so opens the prospect of seeing critical thinking as 'a way of *being* as well as a way of thinking' (1999, p. 62 italics added). By this they mean that critical thinking is as much a way of thinking about arguments, dispositions, actions and social relations, as a way of being creative and "open to challenges" of thinking anew (1999, p. 60). True critical thinking, for them, is about not being "closed off". It, instead, begs a requirement for "openness". This, for Burbules and Berk, does not amount to a relativist thesis (the view that all perspectives are equally valid) it amounts to appreciating that un-reconciled (and irreconcilable) tensions exist between different perspectives on critical thinking. Critical thinking as creativity, in their view, also means finding these tensions agreeable, and not being perpetually unsatisfied by them. It is in 'remaining open to challenges without seeking to dissipate them that criticality reveals its value as a way of life' (1999, p. 62). It requires a willingness to 'move against the grain of convention' (1999, p. 62). Hence, they use the phrase "critical thinking as thinking differently", thinking creatively, or—as it might also be termed—critical thinking as *openness* (CAC/O).

This kind of thesis might be rejected out of hand as being unclear. However, I shall embrace their exhortation to think differently on the question of critical thinking as it applies to higher education. I believe coherent sense can be made of their suggestion by adopting insights from the cognitive sciences. Perhaps a case can be made that *true* critical thinking only occurs if the whole fibre of one's personality/physical body/consciousness/emotions as well as actions are involved. That is, critical thinking is not merely rational/intellectual/definitional/judgmental, but nor is it simply disassociated bodily actions in response to reasoned decision-making. "True" critical thinking might be all of these things and more. In particular, it might include thinking that involves a number of facets of cognition not easily understood in terms of the axes of skills, judgments, dispositions and actions as previously outlined. These features of thinking include expertise in pattern and similarity recognition, common sense understanding, skilled "know-how" (in the

Rylean sense), an ability of seeing situational salience (where some real-world events are instantaneously, and unconsciously, perceived as more important than others), and what is known as deliberative rationality (i.e., the ability to use expertise to interpret new events in terms of past experience and to make instantaneous, unconscious, confident decisions based on them). All of the above are familiar in the cognitive science literature as the "six aspects of intuitive judgment" (Dreyfus & Dreyfus, 1985). This kind of thinking, in short, is *intuitive* thinking, a very different kind of thinking to that discussed earlier. This, along with *creative* thinking, surely has a strong relationship to critical thinking (Paul & Elder, 2008). Unfortunately, however, there has been very little work done on this.

Intuitive thinking occurs only when a great deal of reasoning, and practice with reasoning, assessment of evidence, and so on has already occurred. Intuitive thinking is based on past decisions grounded in sound, well-established principles of critical thinking. However intuitive thinking is marked by the thinker having gone *beyond* conscious intellectual consideration of their judgments and decision-making. This kind of thinking involves having constructed a large number of cognitive patterns from which to make immediate, unconscious "intuitive" calls to action. This phenomenon is common amongst "expert" thinkers in a range of professions (Ericsson, 2008; Ericsson & Lehmann, 1996). For experts, intellectual consideration has become incorporated into bodily consideration and action as an intuitive response. A sportsman effortlessly and unconsciously "knows" how to play the ball, or take a tackle; the musician just "knows" how to phrase the passage, and so on.

In this sense, "true" critical thinking must necessarily be "open" in relation to all influences. It involves thinking differently—being *trans-critical*—i.e., thinking with the core of one's body and being—not merely thinking intellectually. This does not mean *trans-rational* (beyond reason), rather, it means rational thinking albeit not thinking that involves conscious analytical methods of decision-making (Franz, 2003). As noted, this phenomenon has a parallel in the area of sports, music and other areas, and is sometimes known as "the Zone" or the phenomenon of "flow" (Cooper, 2009; Csikszentmihalyi, 1990). Its characteristic features are a heightened sense of mastery and emotional buoyancy.

At first blush this might seem completely counter to critical thinking. However, in outlining the perspectives of the various traditional accounts of critical thinking in this paper, it might be noted that all of them to date (with possible exception of the account by Burbules and Berk) neglect the importance of the role of the intuition and creativity in critical thinking. This seems to us to be an oversight. The importance of intuitive thinking, intuitive reasoning—thinking *trans-critically*—is becoming increasingly important to the cognitive sciences and brain science research, with published studies arising on the role of intuitive reasoning in areas as diverse as expert sports performance, chess-playing, judgment-making in nursing and other professions, management decision-making, and solving physics problems (Benner & Tanner, 1987; Dane & Pratt, 2007; Effken, 2000; Ericsson, 2008; Larkin, McDermott, Simon, & Simon, 1980; Lieberman, 2000).

Intuition is sometimes defined as 'understanding without a rationale' (Benner & Tanner, 1987, p. 23). But this would be to underplay its significant role in brain processing. The evidence so far adduced from the cognitive sciences seems to indicate that creative "intuition" is no mysterious process as it is often assumed to be, but a process involving the cognitive agent being able to unconsciously search across knowledge domains and indexed patterns of reliable information in a fraction of a second to access relevant parts of an established information store (Franz, 2003). It involves the expert's body being part of *engagement* in the world; a form of "knowing how" in which tools and objects become—in a Heideggerian sense—extensions of the their own body (as when a nurse, for example, feels an intravenous catheter to be 'an extension of her fingers, not an unwieldy foreign object' (Benner & Tanner, p. 26)). Evidence suggests that this form of thinking—intuitive thinking—is more efficient, and accurate, than conventional thinking involving reasoned weighing up of alternatives (Lieberman, 2000, p. 109). A more accurate definition suggests that intuitive thinking be considered 'the subjective experience associated with the use of knowledge gained through implicit learning' (Lieberman, p. 109), or as a 'phenomenological and behavioural correlate of implicit learning' (Lieberman, p. 126). Sometimes intuitive thinking is seen in terms of "thin slicing" (Gladwell, 2005). This is the remarkable capacity of humans who, instantaneously, and without conscious effort, can sift through a situation, zero in on what is salient, throw everything out that is not relevant, and act accordingly. It would be remiss of researchers not to consider the importance of intuitive thinking for any complete account of critical thinking.

Moreover, there is a point of consistency to consider. We have seen, in the taxonomy of the various positions I have provided, how the framework of criticality has been be extended from (initially) a very narrow account of skills in argumentation, to the importance of including broader cognitive skills, actions and emotions, and then the inclusion of dispositions, actions, social relations, and now creativity. Each development has consisted of an *expansion* of the conception of critical thinking for higher education. It is not a difficult step to imagine the need to include creative *intuitions* as well. However, I am not suggesting this as an additional account of criticality to that already proposed. I am suggesting that intuitive critical thinking is already implicit in the account of *creative* critical thinking (CAC/O).

The CAC/O view just outlined can be compared with Barnett's example of the Chinese Tank Man provided earlier as an exemplar of *critical being*, and noted also as an example of critical *action* (see p. ?). As noted then, the man's actions clearly were not entirely intellectual in nature (indeed, had he had *thought* critically about it he surely would not have done it). His sizing up of the situation and acting was an intuitive act—an *organic critical response* to the context. His action was the opposite of weighing an argument, assessing it dispassionately, etc. It was in another vector space to critical thinking as argumentation (the "Y" axis in our axis diagram). Just as a mother would not even think about a brave, unself-serving action to protect her off-spring in response to a perceived danger—or an accomplished sportsperson would not even need to think how to make the play—so too, a "true" critical thinker responds intuitively with organic, bodily responses. Conscious intellect is

suspended: they are not convinced of the rightness of their actions, intellectually-speaking, as much as responding instinctively and intuitively to what they need to do. The cognitive science literature suggests this is a real phenomenon.

To what extent this idea is a coherent notion, and to what extent it constitutes a valuable contribution to critical thinking theory remains to be seen. However, it has clear similarities to Barnett's valuable notion of *critical being*. I therefore propose this as having a location in the final contribution to our axis diagram below (as the "X" axis in our diagram). It shows how critical openness is premised on the importance of *intuition* as part of critical thinking, i.e., criticality as *critical being*. The latter is represented in the model as a diametrically opposed vector space than the CTM.

The location of *critical creativity* on the diagram shows how the perspective of critical thinking and openness keeps "open" all previous views of critical thinking (hence the lines representing all forms of critical thinking intersect through the shaded block). By contrast, the CTM only has argumentation/skills and abilities/disposition lines intersecting in its shaded block. Thus, while the CTM is very narrow in its focus the alternative, (CAC/O), is open to all influences. This makes the CTM more easily understood as an account of critical thinking and more productive in its output. It also means that the alternative—critical thinking as creativity or openness (CAC/O)—seems, on the surface, to be woolly and less clear. But this does not make the latter wrong. To suggest otherwise is another potential axis dispute from the narrow perspective of protagonists aligned with, and sympathetic to, a different dimension of critical thinking, a different critical thinking "ideology".

It is for future work to determine whether this account of the various positions on critical thinking can be maintained. I submit it as part of a model of critical thinking that helps to make sense of a variety of considerations in the critical thinking in higher education literature. The final iteration of the axis diagram is given below (Fig. 2.8).

A Practical Example

How can these various positions on critical thinking be explained using a simple example? By using and extending the example of a lawyer, used earlier, we can see a number of discrete stages involved in the process of being a critical thinker. For completeness sake, I include the first six stages representing Bloom's famous taxonomy (the final three stages approximating cognitive critical thinking skills). In addition, we can see the locus of interest of all the major views about critical thinking. Given what has been outlined earlier, it is important to note that the examples below are not indicative of discrete "stages" or "levels", but rather overlapping dimensions. What I have called "axis disputes" can occur between dimensions (Table 2.4).
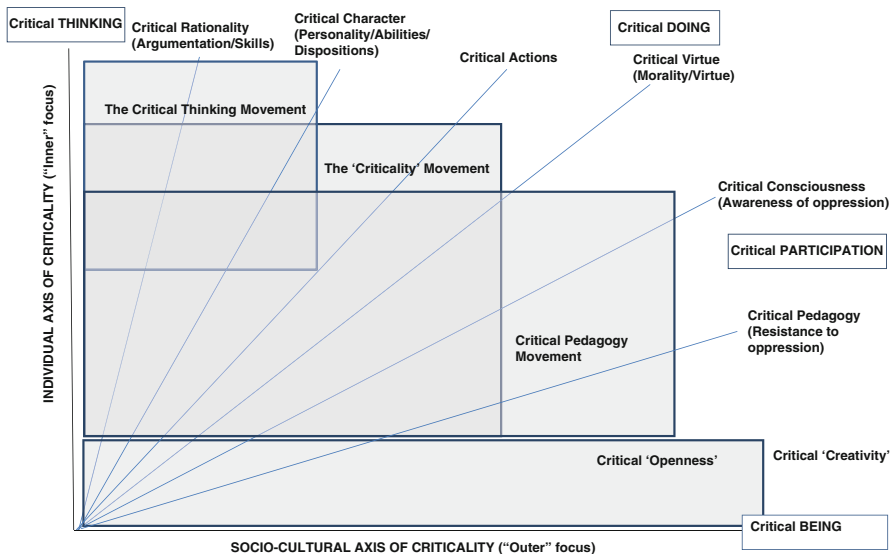
Fig. 2.8 The individual and socio-cultural elements of critical thinking

A Model of Critical Thinking in Higher Education

The enterprise of critical thinking in higher education, I submit, can be seen in terms of a series of concentric circles (see Fig. 2.9). I propose this as a model for critical thinking in Higher Education.

Explaining the Model

What is the relationship between the axis diagram and the circles diagram? The circles diagram constitutes my model of critical thinking in higher education. The axis diagram was necessary getting us to that point. It was important as a preparatory stage in outlining, in a visual way, the various accounts of critical thinking; it showed the *geography* or terrain of the various positions in relation to one another. Ideally, the model proposed should be 3D, including the various axes. However, it is also important that the model of critical thinking represents the disparate perspective as of a piece; as comprising Wittgensteinian "family resemblances" as it were— aspects of a single concept in *use*. This is because critical thinking, while complex, is *one* phenomenon. All the positions on critical thinking, while occupying different vector spaces on the model, contribute something different to our understanding of critical thinking as a single, undifferentiated (although multi-faceted) concept. The axis diagram then can be considered a useful fiction. In a similar way, the Bohr-Rutherford model of an atom is a useful fiction. However, both point to way to understanding the phenomenon under investigation.

The circles of critical thinking radiate out from a focus on the individual and his or her cognitive skills and dispositions (the *individual* dimension or axis); to a focus on the individual and his or her actions; to a focus on the individual in relation to others in a wider social and educational context; and finally, to a focus of the social context itself in which the individual thinker operates in a critically engaged citizen (the *socio-cultural* dimension or axis). It is the latter which critical pedagogues see as constituting oppressive social conditions in need of critique.

The "inner" circles constitute the "critical thinking movement" as it is broadly understood to include cognitive factors and propensity elements (these are shaded to indicate their centrality and importance to critical thinking theory as it is understood historically). All the circles are drawn with dotted lines indicating a degree of permeability between each level. Thus, a major figure in the CTM such as

Table 2.4 The relationship between different accounts of critical thinking in higher education

	Level of Criticality	Sample Case
Bloom's taxonomy	Knowledge	A lawyer can **define** a legal principle such as "innocent until proven guilty".
	Comprehension	A lawyer can **explain** the purpose of a legal principle such as "innocent until proven guilty".
	Application	A lawyer can **give a concrete example** of a legal principle such as "innocent until proven guilty".
	Analysis	A lawyer can **compare and contrast** the application of a given principle such as "innocent until proven guilty" in relation to a number of legal cases.
Critical Thinking Movement	Synthesis	A lawyer can classify and assess the likely or probable outcome of a legal case as a result of the application of a legal principle such as "innocent until proven guilty".
	Evaluation	A lawyer can **make a judgment** about, and **draw conclusions** about, the outcome of a legal decision in relation to the application of a legal principle such as "innocent until proven guilty" and **can deliberate** on the value and worth of the principle itself.
Criticality Movement	Critical action	A lawyer can *act* on a legal principle such as "innocent until proven guilty" (i.e., the lawyer can do more than analyse, synthesise and evaluate, they can engage in **concrete actions** in relation to the principle). This demonstrates more than critical *thinking,* it demonstrates critical *character* (acting on principle). However, these actions need not necessarily be in relation to a fair and just cause.
	Critical virtue	A lawyer can *act virtuously* on a legal principle such as "innocent until proven guilty" by defending a client whom they believe is truly worthy of defence, and refusing to act in relation to unworthy cases. This is to be distinguished from merely engaging in concrete actions in order to win cases (i.e., with no moral compunction at all).

Table 2.4 (continued)

Critical Pedagogy Movement	Critical consciousness	A lawyer can be **cognisant of wider inequities** beyond legal principles such as "innocent until proven guilty". These wider inequities are a result of social conditions occurring beyond the case in question that might have an impact on the clients' case. The lawyer is thereby concerned about the **root causes of the situation** that led to the case as much as the case itself.
	Critical pedagogy	A lawyer **is prepared to take a stand on the wider social injustices**/root causes that arise in relation to legal principles such as "innocent until proven guilty" as they might apply in relation to his/her client. The lawyer does not thereby merely act virtuously in relation to his/her case. Instead, he/she is prepared to act virtuously in relation to **wider social concerns.** In particular, this means **changing the educational system** that lead to the inequities.
Critical 'Openness'	Critical Being	A lawyer no longer sees his/her case as merely acting in relation to an application of legal principle such as "innocent until proven guilty" in relation to a client. He/she is past the stages of critical analysis, synthesis and evaluation and action. He/she is **convinced of the rightness of his/her judgments** and the **urgency of doing something** about it. He/she is **wholly absorbed in the fullest sense** in the wrongfulness of the situation. He/she is **instinctively responsive** to the situation and is **prepared to do anything** to remedy it. The clients' case has become a secondary concern. The issue has become central to the lawyer's life.

R. H. Ennis, who initially focused on defining critical thinking as a cognitive skill, 'as the correcting assessing of statements' (the innermost circle), has modified his stance to incorporate critical thinking judgments and dispositions, i.e., 'reasonable, reflective thinking focused on what to believe or do'. Thus, his account has shifted from the inner-most circle to the second. This indicates some natural evolution in his perspective. (He also countenances dispositions, and therefore can be located in the third circle as well.) Similarly, other theorists have modified their initial views, usually adopting "wider" perspectives from that they held originally.

These different concerns of the various critical thinking movements are, respectively:

1. Critical thinking as (a) cognitive skills and (b) judgments, i.e., critical thinking as argumentation and reflection (The *cognitive* dimension);
2. Critical thinking as each of these in addition to affective factors, i.e., dispositions, emotions, attitudes and state of readiness (the *propensity* dimension);
3. Critical thinking as all of these in addition to actions (the *"criticality"* dimension);
4. Critical thinking as all of these in addition to social relations (the *"critical pedagogy"* dimension).

Finally, Burbules and Berk (1999) offer the prospect of a fifth dimension—a sixth circle—of critical thinking as creativity (CAC/O). This account of critical thinking in higher education, however, is highly speculative and undeveloped at this point. I suggested a naturalist reading of this suggestion consistent with their notion of

Cognitive skills, judgments, dispositions, actions, social conditions and creativity

Cognitive skills, judgments, dispositions, actions and social conditions

Cognitive skills, judgments, dispositions and actions

Cognitive skills, judgments, and dispositions

Barnett, Johnston

Cognitive skills (Argumentation and judgments)

CRITICAL PEDAGOGY MOVEMENT

"CRITICALITY" MOVEMENT

CRITICAL THINKING MOVEMENT

Paul

Cognitive Skills (Argumentation)

Ennis, Bailin, Lipman, McPeck, Moore and Parker

Ennis, Mulnix, Mayer and Goodchild, Chance, Kurfiss

INDIVIDUALS
THINGKING

Burbules and Berk

INDIVIDUALS AND DISPOSITIONS

Friere, McLaren, Giroux

INDIVIDUALS AND OTHERS

INDIVIDUALS, OTHERS, SOCIAL RELATIONS

INDIVIDUALS, OTHERS, SOCIAL RELATIONS AND CREATIVITY

Fig. 2.9 A model of critical thinking in higher education

critical thinking as creativity. This intriguing idea needs sustained discussion that I cannot attempt here.

The three innermost circles (argumentation, judgments, and dispositions) constitute the critical thinking movement as it is generally understood, i.e., as a movement consisting mainly of educational philosophers seeking to define and create taxonomies of the concept of "critical thinking". These innermost circles have a focus on critical thinking at the *individual* level. The fifth and sixth circles focus on critical thinking at the *social* level. The fourth circle is an intermediate stage constituting what I have referred to as the "criticality movement", although this cause is fairly new, and is not identified as such in the literature. This is a group of scholars consisting mainly of higher education specialists interested in the wider ramifications of critical thinking for higher education, tertiary institutions, and society at large. The fifth circle constitutes a movement of educational radicals working at the intersection of philosophy, higher education, pedagogy, and politics.

This is what is customarily known as the critical pedagogy movement. The sixth outermost circle is constitutive of a possible extension of the scholarship of critical thinking into a stage of intuitive thinking and critical being, but remains under-developed.

Historically, the concerns of the critical pedagogues (fifth circle) have been seen by philosophers in the critical thinking movement (three innermost circles) as having concerns that are tangential and oblique to their main aims. As Burbules and Berk put it, they would regard the concern for social inequity, inequality and disenfranchisement, as important, but 'subsidiary to the more inclusive problem of people basing their life choices on unsubstantiated truth claims—a problem that is non-partisan in its nature or effects' (Burbules & Berk, 1999, p. 46). In other words, for proponents of the critical thinking movement, the definitional and justification issues associated with critical thinking come first; politics comes second. However, importantly, as our model suggests, this is a matter of preference and emphasis. It is an axis dispute. There is no *a priori* reason why scholars cannot investigate critical thinking along all dimensions outlined simultaneously; indeed, a fully satisfactory account of critical thinking in higher education—as opposed to a localized, philosophical treatment of critical thinking—will need to run orthogonally to the circles and not be confined in the "orbit" of any particular dimension.

Advantages of the Model

There are at least three main advantages offered by the model.

Firstly, the model also helps us see, at a glance, how those working in the area relate to each other. Key proponents of each position are shown in the diagram with their approximate locus indicated. Ennis and colleagues are centrally-placed in the cognitive "skills"-based camp, though, as noted, many of these thinkers also sympathetic to the dispositional approach (hence the shaded section which extends out to the third circle). Paul is an outlier in this camp, as he has demonstrated a willingness to consider social ramifications and concerns (Burbules & Berk, 1999, pp. 50, 53). Barnett and Johnston are representatives of the "criticality" movement circle demonstrating their commitment to critical action as a vital part of critical thinking in higher education, and their concern with the role of critical thinking in society, i.e., educating for participation in the world as a critical, engaged citizen (although not a radicalized citizen railing against oppression). The social pedagogues, Friere, Grioux, McLaren and others, are even further out, tangential to, and largely unconcerned with, the "skills" debate. They are firmly located in the circle that commits to social relations being an essential part of *radical* critical thinking. The outermost circle is the home of those which see critical thinking as an open, creative pursuit. This view captures the notion of critical thinking as intuitive, trans-critical responsiveness.

Secondly, the model promises a *rapprochement* of sorts between the critical thinking movement (the three innermost circles) and the critical pedagogy move-

ment (fifth circle). This is by means of the fourth, intermediary and connecting circle. The emphasis placed by Barnett and others on "criticality"—as opposed to critical thinking or critical pedagogy—provides a point on which both parties can agree, and on which they can leverage their respective interests. Like those in the "criticality" movement, proponents of the critical thinking movement acknowledge—albeit inadequately account for—the importance of *action*. Likewise, the proponents of the critical pedagogy movement seem to acknowledge—indeed, mandate—the importance of a wider, social context of critical thinking. Proponents of the criticality movement sit astride both views: neither wanting to fully adopt a radical politico-social agenda, nor wanting to *reduce* critical thinking to argumentation, judgments and dispositions. Criticality theorists might be considered socio-politically neutral while being simultaneously dissatisfied by restrictions to cognitive definitions of critical thinking.

Thirdly, the model helps to identify axis or boundary disputes. A long-standing example of such a dispute is the debate between "generalist" and the "specifist" approaches to critical thinking (Davies, 2006, 2013; Moore, 2004, 2011). Is critical thinking best understood as a pan-disciplinary phenomenon, or is it best seen as specific to the disciplines? No debate has polarized scholars of critical thinking more than this. How can the model provided illuminate this issue?

The model suggests a ready, if not altogether satisfactory, resolution. If critical thinking is seen principally in terms of developing individual skills in argumentation, judgments, and dispositions, then it is very much a general skill, congruent with many disciplines (as all disciplines use arguments). If, on the other hand, if critical thinking is seen as a matter of being *socialized*—i.e., acting and participating in a discipline (in the same way, perhaps, as participating as a citizen in a given society)—then this requires dedicated pedagogies for this purpose, and discipline-specific induction. Depending on one's initial assumptions then, critical thinking is as much a socio-cultural issue as a matter of developing individual skills. From this perspective both views are largely correct and the "debate" is a non-starter. However, sometimes one view is more important for practical reasons. Educating for criticality sometimes demands a *myopic* view (students need to be able to argue effectively), and sometimes it demands a *hyperopic* view (students need to develop critical membership or citizenship of certain academic communities). Sometimes one or other requirement is preeminent, and effectively dominates the debate. This decision can turn, not always on matters of educational principle, but on funding decisions and resource allocation in cash-strapped tertiary institutions. In the end what kind of student does an institution want to educate?

Axis disputes do not mean issues are any less disputes; the model makes sense of how debates arise, it does not adjudicate between them. Theoretical models are, likewise, no panacea. They can, however, offer the potential for moving forward in the important area of critical thinking in Higher Education.

Conclusion

This paper has overviewed some of the major positions on the nature of critical thinking as they apply to the discipline of Higher Education. This included contributors to the so-called critical thinking movement, the proponents of criticality theory, the critical pedagogues, and those working in critical citizenship and allied fields. While the various perspectives offered on critical thinking in higher education differ in a number of respects, the model provided helps to locate these positions, and the scholars that hold them, in terms of their relative proximity. This might help to avoid the problem of scholars within different fields of critical thinking scholarship "talking past one another". However, the model provided is only a rough sketch. Further work needs to be done in outlining how the model can illuminate important issues in the field. Locating various positions on a model of critical thinking in higher education might be intrinsically interesting, but the important work to be done is providing insight on how critical thinking can be best taught and incorporated in the curriculum. This is where the real value of the model will be tested.

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Chapter 3
Unbundling the Faculty Role in Higher Education: Utilizing Historical, Theoretical, and Empirical Frameworks to Inform Future Research

Sean Gehrke and Adrianna Kezar

What lies in store? One may nourish the hope that from residual and abiding strengths – the human desire to ennoble work, the lingering sense that learnedness is akin to blessedness, the quest for inimitable achievement that goes with strong disciplinary commitments – the academic profession will gather what it needs to preserve itself and remain intact. But this may be a sentimental hope. It may be more realistic to assume that out of the sortings now taking place will emerge two very different entities: a relatively small profession centered in the nonunionized, moderately delocalized, mostly private, research-oriented universities and high grade colleges, and a much larger work force composed of persons called faculty members out of habit but who are in no significant way differentiated from other trained attendants in the teaching enterprise and barely distinguishable from the multitudes engaged in bureaucratized white-collar work – a lumpen professoriate, so to speak. And one may conjure up a future that lacks even this saving remnant: a time when the profession as we know it comes to be regarded by almost everyone as an anomaly, then as a constricting anachronism, and finally as a lifeless relic of a lost and dimly remembered world (Metzger, 1975, p. 41).

The rise of information and communication technology (ICT) in the past two decades has altered the landscape in higher education. New forms of electronic course delivery have led to an increasing number of online and distance courses, which have dramatically increased the number of students that colleges and universities can and are expected to reach (Bowen, 2013; Paulson, 2002). This growth in distributed or e-learning has focused increased attention on the unbundling of instruction in online education (Twigg, 2003). Unbundling in this context refers to the differentiation of instructional duties that were once typically performed by a single faculty member into distinct activities performed by various professionals, such as course design, curriculum development, delivery of instruction,

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and assessment of student learning (Paulson, 2002; Smith, 2010). But unbundling in higher education is much broader than the differentiation of tasks in teaching online courses. Differentiation can occur at both the individual and institutional levels (de Jonghe, 2005), and instances of unbundling can be identified dating back three centuries in American higher education. Despite these facts, the unbundling phenomenon has only recently entered into current discourse in higher education.

Unbundling was first articulated by William Wang (1975), a law professor who described the four functions that universities solely performed for students that opened them up to "an antitrust attack on [their] monopolistic practices" (p. 54). These four functions were the impartation of information, accreditation, coercion, and club membership. Impartation of information referred to the major function of the university to transfer knowledge from instructors to students; accreditation to the role of universities in evaluating students' work and conferring degrees; coercion to the pressure placed upon students by professors, administrators, and peers to complete their work; and club membership to the benefits that arise from belonging to an exclusive institution and the opportunity to interact with other students. Wang argued that with the advent of ICT, universities now faced the structural possibility of unbundling by allowing other organizations to perform one or more of these core functions. With the exception of Troutt's (1979) argument for unbundling the teaching-assessing-advising roles of community college professors, the term unbundling remained largely ignored in the literature until the emergence of distance and online education (Paulson, 2002). Unbundling, as defined by Wang, referred to unbundling institutional services. Others who followed utilized unbundling to describe disaggregating faculty roles, and in the last decade, scholars have referenced the unbundling of the teaching-research roles among faculty (Leisyte & Dee, 2012; MacFarlane, 2011; Schuster & Finkelstein, 2006), teaching tasks in traditional (Bess & Dee, 2008) and online education (Paulson, 2002; Smith & Rhoades, 2006), pure research from applied research (Enders & DeWeert, 2004; Harloe & Perry, 2005; Vakkuri, 2004), and institutional services in higher education (Hawkins, 2000; Pathak & Pathak, 2010).

Recent scholarship addressing the evolving nature of faculty work, the shifting nature of knowledge and scholarship, massification in higher education, and shifting institutional boundaries has brought increased acknowledgment that unbundling is occurring; it is clear that higher education has undergone and is still experiencing unbundling of roles, tasks, and services (Schuster & Finkelstein, 2006). What remains unclear is the impact this unbundling has on the American higher education enterprise. Recent scholars' perspectives vary; proponents point to its increased cost effectiveness for delivering instruction and service to more students (Jewett, 2000; Pathak & Pathak, 2010; Paulson, 2002), while opponents are concerned with the de-professionalization and deskilling of faculty labor and removal from key functions such as governance, and impact on student outcomes that results from unbundling (Leisyte & Dee, 2012; Plater, 2008; Slaughter & Rhoades, 2004). Most of the literature pertaining to unbundling is conceptual in nature, and the discourse is by-and-large uncritical with little evidence to support either perspective. This is likely due to the dearth of research examining the potential advantages and drawbacks

to unbundling in higher education; very few have examined this phenomenon empirically, so the literature mostly reflects conceptual arguments and ideology. The current dialogue about unbundling typically presents it as a wholesale good – which will help to contain costs, to capitalize on different individuals' expertise, and increase access – or a wholesale bad – that loses key expertise, deprofessionalizes faculty, and robs students of holistic learning and fragments their development. In order to inform policy and practice, we should draw lessons and insights from the history of unbundling and utilize theory to map out strategies moving forward. The current attention given to unbundling has not been contextualized within the broader pattern of differentiation that has occurred in higher education over the past three centuries, instead attributing it to forces that have impacted higher education in recent years. This lack of historical context prevents the appropriate perspective to reflect on changes by identifying the impact of this trend over time.

In this paper, we examine unbundling in higher education to provide scholars, university leaders, faculty, disciplinary leaders, and policy makers with historical context, theoretical frameworks, and gaps in the empirical literature to inform research and decision-making pertaining to the differentiation of university and faculty tasks. Specifically, we will focus on the unbundling of faculty members' roles. While the unbundling and outsourcing of university services from higher education institutions is important and warrants further attention, specific developments pertaining to the faculty role in higher education, particularly moving toward a non-tenured and more managed work-force (Kezar & Sam, 2010; Leisyte & Dee, 2012; Slaughter & Rhoades, 2004), makes examination of the faculty role increasingly important. First, we begin by defining the term unbundling to inform the rest of the paper. Next, we describe unbundling historically and how the faculty role has shifted over time, demonstrating this is not a new phenomenon. The changes in role have been guided by external demands and new concepts about education, rather than by evidence that shifts support student learning. We then review theoretical frameworks and their mechanisms to inform our understanding of the history of unbundling. Third, we examine empirical research findings on unbundling the faculty role, which have not been synthesized to date. We conclude by offering directions for future research regarding unbundling based on the history, theory, and empirical research reviewed.

This paper makes three distinct contributions to the higher education literature. First, the current scholarship related to unbundling focusing on online/hybrid education fails to contextualize the phenomenon within the history of unbundling in higher education. Unbundling of the faculty role has been occurring for some time, and contextualizing the current form of unbundling in this history provides scholars and leaders with a frame for understanding the trajectory of higher education likely toward a future of continued unbundling. It also allows us to see that the faculty role is a social construction that has shifted over time based on external circumstances and based on the negotiation of the terms and conditions of academic labor at the local, state, and national level, and that today's shift may be inevitable. History is not inevitable and by identifying patterns leaders can make changes to alter historical patterns, learning from rather than repeating history. Second, most

scholarship examining unbundling is atheoretical in nature (with some exceptions). By presenting explanations for historical unbundling through the lens of several theories, we provide scholars and leaders with a framework for understanding the mechanisms for why unbundling occurs and how it might play out in the future. We ultimately argue the benefits of utilizing multiple theories to inform our understanding of the history of unbundling. Finally, we provide concrete directions for future research based on historical, theoretical, and empirical contexts in order to ensure that scholars consider relevant issues regarding the future state of the field and the faculty role in particular.

Unbundling Defined

Unbundling as a term has been used in multiple ways in higher education and has led to confusion about what the terms precisely means. Some scholars speak about unbundling of instruction; others speak about unbundling of the trilogy of teaching, research and service; and others describe unbundling of various goals or purposes (e.g., remedial education offered by a for-profit provider). At the most generic level, unbundling is the differentiation of tasks and services that were once offered by a single provider or individual (i.e., bundled) and the subsequent distribution of these tasks and services among different providers and individuals (Smith, 2008). When scholars address unbundling in higher education, they are generally referencing differentiation of these tasks and services in three distinct areas or contexts – institutional, professional, and instructional (Smith). Institutional unbundling refers to separating services within universities, such as teaching, advising, and assessment, enrollment management or admissions (Troutt, 1979). As will become clear when describing the faculty role historically, faculty were once responsible for many tasks within higher education institutions that are now performed by other professionals in student affairs, advising, or auxiliary services. Professional unbundling refers to the separation of professional responsibilities among faculty, away from the complete or Humboldtian/complete scholar (influenced by the German tradition in higher education) responsible for teaching, research, and service to differentiated academic professionals who specialize in just one of these roles (Finkelstein, 2003). This is best exemplified by non-tenure track faculty in teaching-only (or research-only) appointments. Instructional unbundling refers to separating the different roles involved with teaching and instruction into course design, delivery, assessment, and advising (Bess, 2000; Paulson, 2002; Smith, 2008, 2010). New forms of unbundling are also emerging in terms of faculty focused on entrepreneurial activities that can create revenue generation, such as technology transfer or creating a new credential programs. The faculty role has undergone unbundling related to all of these areas, but when contemporary scholars describe unbundling, they rarely realize or speak to the multiple types of unbundling. By looking at all three forms (institutional, professional and instructional) together, we can better see the interplay of how this issue is changing the academy in fundamental ways and assess its impact.

A Historical Review of Unbundling

Increased attention has been given to unbundling in recent years, yet the phenomenon has occurred in American higher education for several centuries. While it is beyond the scope of this paper to provide an extensive review of the unbundling of the faculty role, we provide key examples and the range of ways it has occurred over the last 300 years in order to illustrate the long trajectory and complexity of this phenomenon.[1] This history highlights important considerations for the current context of unbundling faculty work, namely that the notion of academics as professionals really did not come about until the late nineteenth century and that research and service have only been considered part of the faculty triumvirate for the past century or so. We have identified four major historical eras which demonstrate the various types of unbundling – institutional, professional, and instructional – and often eras are marked by more than one of these types of unbundling. Table 3.1 summarizes this historical trajectory.

Era I, 1700–1860s: Unbundling of Holistic Knowledge and Student Development

In the eighteenth and early nineteenth century, faculty were tutors and largely contingent, waiting for parish positions to open up. The tutor position was not considered a lifelong career and was typically an early step in a ministerial career. This was a pastoral position, focusing on a custodial role and character development just as much as on teaching and pedagogy (Schuster & Finkelstein, 2006; Thelin, 2004). Tutors oversaw both instructional and non-instructional (i.e., student discipline) operations of colleges (Finkelstein, 2006). They were responsible for working with a single class through their 4 years of the curriculum and lived with the students, taking responsibility for them out of the classroom as well. They were not professionalized, did not have tenure, were holistic scholars, and served at the beck and call of university presidents (Jencks & Riesman, 1969; Lucas, 1994). This faculty model was aligned with the collegiate approach, largely adopted from English residential colleges.

The early nineteenth century brought the first unbundling, where permanent faculty members were hired, often for a particular specialty such as natural philosophy, divinity, or ancient languages (Schuster & Finkelstein, 2006; Thelin, 2004). They began to focus in on their topic area rather than working with students across the 4 years of the curriculum. This unbundling of the faculty role led to less student supervision and advising, along with less responsibility for students'

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[1]For a more detailed history of higher education and the history of the academic profession, we direct the reader to the Schuster and Finkelstein (2006), Geiger (2004), Lucas (1994), Rudolph (2011), Thelin (2004), and Veysey (1965).

Table 3.1 Historical overview of unbundling the faculty role in higher education

	Era I	Era II	Era III	Era IV
Years	1700–1860	1860–1950s	1950s–1980s	1980s–present
Description	Unbundling Holistic Knowledge and Student Development; Collegiate Model to University Model	Further Unbundling Student Development and Holistic Knowledge; Unbundling Administration	Unbundling of Teaching from Research	Further Unbundling of Teaching and Research; Intensified Teaching Unbundling
Unbundling	From tutors (pastoral role) to permanent faculty with more specialized knowledge	Differentiation into more specified disciplines	New institutions focused on teaching	Mostly unbundled to either teaching or research
		Unbundled from administrative duties	Differentiation of teaching and research	Instruction now unbundling
	Separating faculty from holistic student development	Movement from broad to specified knowledge	More part-time faculty devoted to teaching	Institutional unbundling with for-profits
		Emergence of student personnel administration	Tenure-track focus on upper division and research	
		First community colleges	Initial differentiation of instruction	
Bundling/ rebundling	Faculty take on administrative duties	Involved in institutional governance, research, service		
Area of unbundling/ rebundling	Institutional	Institutional	Institutional	Institutional
	Professional	Professional	Professional	Professional
			Instructional	Instructional

moral and spiritual development (Rudolph, 2011). While these new roles were the minority, and the tutor system continued simultaneously, institutions begin to see the value of unbundling faculty roles and having faculty members focus on areas in which they had specialized knowledge. From 1820 to 1860, the academic professional model was coming into fruition through specialized training (i.e., graduate education), publication activities, and long-term career commitments. These changes resulted largely from external notions about faculty roles brought over from Europe and embraced by academics and emerging professional associations, as well

as institutional leaders at selective institutions. As faculty took more permanent positions, they assumed many of the typical areas considered administration today from enrollment, admissions, budgeting, and planning. Professionalization moved unevenly and slowly until the post-Civil-War era in the United States (Rudolph, 2011; Thelin, 2004).

Era II, 1860–1950s: Further Unbundling Student Development, Holistic Knowledge, and Administration

The next major era of unbundling occurred after the Civil War where the university model became even more prevalent in the United States, specialization of knowledge and teaching increased, research was seen as a major role of faculty, and the faculty model became professionalized (Lucas, 1994; Rudolph, 2011; Thelin, 2004). By professionalized, we mean the faculty developed graduate education to help train faculty, faculty positions became permanent with all transitory positions phased out, and expert knowledge was seen as critical to faculty work (Schuster & Finkelstein, 2006). Professional disciplinary societies emerged to support faculty's specialized knowledge and the research function that was a growing responsibility in the university model (Lucas, 1994). The professional model was also codified through the formation of the American Association of University Professors (AAUP) in 1915, and their statement on academic freedom and tenure articulated key elements of the professional faculty model (AAUP, 2006) with protections of employment, autonomy, rights, and responsibilities. The image of faculty members that emerged from this era was that of the complete Humboldtian scholar, whose pursuit of research was in close connection to his or her teaching; the function of the faculty was to engage in research/scholarship and teaching within one's discipline (Neumann, 1996).

The professional model unbundled the faculty role from the advising, student development, and moral development tasks seen in the tutor role (Rudolph, 2011). Faculty chose to make this shift in direction and used their organizing power through disciplinary entities and faculty groups like the AAUP to support these alterations. Although faculty were doing less administrative work, they began to be involved with institutional governance, research, and public service. As faculty became professionalized, they felt it was important to have input into institutional matters related to the curriculum, educational policy, faculty personnel decisions, and the selection of academic administrators (Finkelstein, 1997). Committee structures became significant parts of university governance by the 1930s, allowing them to work on key matters of governance while leaving administration to professional administrators (Thelin, 2004). Additionally, faculty had formerly not conducted research, and this became a major part of their role within the research university. Government and community leaders increasingly relied on faculty members for their research expertise, and public service emerged as a major role for many faculty

particularly at the turn of the twentieth century with increased responsibility being taken on through to the 1950s and 1960s (Thelin). While it is often difficult to trace how these changes occurred, Silva and Slaughter (1984) traced several social science disciplines to demonstrate that changes toward a professional model were the result of a group of faculty specialists interested in conducting more research that aligned with powerful external forces (government and corporate) supporting efforts that would strengthen the economy through research. The rising professionals in the academy gained power by "serving power" with their claimed expertise.

As the professional faculty model took hold, the responsibilities that have formerly been conducted by the tutors needed to be addressed, and this led to the emergence of Deans of Men and Women (later becoming Deans of Students) who were hired to oversee the non-instructional aspects of a college education, freeing the faculty to be responsible to undertake the new set of responsibilities of research, public service, institutional governance, and undergraduate instruction (Rentz & Howard-Hamilton, 2011; Rhatigan, 2009). Deans of students focused on the moral development, out of classroom learning, counseling, career development, and residential experience that tutors had formerly been responsible for (Rentz & Howard-Hamilton, 2011; Rhatigan, 2009; Thelin, 2003). Also, administrative work (e.g., admissions, planning, departmental leadership) in academic affairs was assumed by a growing cadre of professional administrators drawn largely from the faculty, but this work became removed from faculty roles (Thelin).

Unbundling also began in relation to instruction, which received criticism at the time. Being a faculty member in the nineteenth century typically meant having a broad knowledge of all areas of the curriculum – humanities, philosophy, languages, and the few emerging social sciences and sciences. With the new Humboldtian model of faculty, the role unbundled from attention to a variety of knowledge bases to a particular specialization. As disciplinary societies continued to grow and knowledge continued to specialize, faculty were no longer focused on the broad education of students but specialized in knowledge dissemination and creation of knowledge through research in their respective disciplines (Neumann, 1996). Potential problems with this degree of specialization were foreshadowed as early as the 1850s.

In Cardinal Newman's (1852/1982) *The Idea of a University*, he argued about the problems of increasing specialization and the need for faculty to maintain an understanding of many different curricular areas in order to educate the whole student. He offered persuasive arguments for why the unbundling of universal knowledge into specialized knowledge would negatively impact undergraduate student instruction. While he focused on the specialization of knowledge, he also alluded to the importance of the faculty pastoral role as role model and mentor for students. As knowledge accumulated, particularly in the sciences, it became difficult for faculty to maintain knowledge across all of these fields. Newman's book has had unparalleled impact on people's views of higher education, thus it is important to acknowledge that the unbundling of the faculty role was met with criticism and concern during the time it was occurring and that this concern has lingered for over a hundred years. Newman would be followed by many other critics, such as

Bellah, Madsen, Sullivan, Swidler, & Tipton (1985, 1991) who argued that faculty specialization leads students away from a holistic sense of learning, embracing ethics, and an ethic of service and community offered through the collegial model of faculty.

In summary, these first two eras witnessed professional unbundling through the shift from primary roles of teaching and student development to research, teaching and service; institutional unbundling as new positions were designated to manage students' lives outside of the classroom and administrative appointments were created to conduct the work unbundling from faculty roles; and instructional unbundling occurred as faculty specialized and were no longer responsible for teaching all disciplines.

Era III, 1950–1980s: Unbundling of Teaching from Research

While professional unbundling is the predominant form in the third era, institutional and instructional unbundling continue to occur. Just as the university model became fully instantiated throughout U.S. higher education, the return of many veterans to college campuses after World War II due to the GI Bill (Brubacher & Rudy, 1997) led to unprecedented growth. In order to accommodate this growth, new institutions emerged, such as community colleges, technical colleges and urban institutions. These institutions had less emphasis on research and more emphasis on teaching. Student advising and support became more important for a group of students whose parents had not attended college and often did not have experience with higher education. A growing tension was emerging between the needs of students and institutions for faculty to focus more on teaching and less on research and public service. Schuster and Finkelstein (2006) document how faculty attitudes towards teaching declined to an all-time low by the 1980s, and research was the most valued aspect of the faculty role in the history of colleges and universities, largely due to the influx of federal funds to support research in colleges and universities (Geiger, 2004).

In this era, the connection between research and teaching weakened through differentiation of faculty appointments and roles. New teaching or research-only non-tenure-track faculty (NTTF) began to propagate (Schuster & Finkelstein, 2006). In the 1970s the part-time teaching faculty member began to be hired as a major part of community colleges. However, the university model with the trilogy of teaching, research, and service within a specialized knowledge base had become deeply engrained into the profession, and the shift to accommodate changing conditions within the enterprise was extremely difficult (Lucas, 1994). In the postwar era, Jencks and Riesman (1969) noted how faculty achieved the highest level of power and prestige throughout their history and that such a model would be difficult to move away from even if it did not best serve the mission and purposes of the enterprise in the future.

By the 1980s, as a result of tightening budgets due to lessened state support for higher education and increasing enrollments, colleges and universities were beginning to rely more heavily on faculty members who were appointed to teaching-only positions. These appointments were often non-tenure-track, which meant that faculty involvement in governance became more and more limited (Rhoades, 1998; Slaughter & Rhoades, 2004). This pattern has led to 70 % of faculty today being off the tenure track (Kezar & Sam, 2010), and three out of four new faculty hires nationally are hired on non-tenure-track appointments (Schuster & Finkelstein, 2006).

Arguments began to circulate about the viability of the unbundled role of faculty into teaching or research only appointments. Historical debates about the tensions between teaching and research resurfaced (Schuster & Finkelstein, 2006). This unbundling of faculty roles from the Humboldtian ideal of scholar – responsible for teaching and research – to those focused solely on one or the other is indicative of the professional unbundling of the past 40 years that continues to this day. In prior eras, the amount of attention to teaching, research, and service shifted based on institutional type, but this approach to the balancing of faculty roles increasingly became seen as insufficient to address institutional needs. Perhaps the best known publication to address the imbalance in research and attempt to restore the value of teaching and local service was Boyer's (1990) *Scholarship Reconsidered.* This publication supported the idea of the complete scholar with the trilogy of teaching, research, and service, but suggested making the model flexible to address different institutional needs and emphases. While Boyer argued that all faculty should be scholars and versant in the research in their specialization, faculty in community colleges might focus more on the scholarship of teaching and faculty in comprehensive or metropolitan universities might focus more on the scholarship of application of knowledge. Boyer also reminded us that higher education has long been differentiated with multiple institutional types, but that today the university is actually a minority model compared to the number of students educated within community colleges, technical colleges, liberal arts colleges, and other non-university forms of education.[2] While not arguing for unbundling the faculty role, Boyer argued that roles and responsibilities could be shifted better to meet institutional needs that became increasingly differentiated after World War II.

During this era, institutional unbundling also occurred in which faculty in community colleges teach the first two years of general and remedial education (Lucas, 1994). Additionally, tenure-track faculty teach largely upper division and specialized courses and contingent faculty teach introductory, liberal arts, and remedial education courses at other colleges and universities. Universities also began to experiment with using teaching assistants to take on some aspects of course delivery and assessment, indicating there is precedent for unbundling the teaching role as well as having non-faculty members conduct grading, course delivery, and

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[2]Schuster and Finkelstein (2006) documented how by the late 1970s, the university model was no longer dominant.

other aspects of teaching. Therefore, the use of technology is not the first time that the teaching role has been unbundled and expertise spread out among other individuals with differing expertise (Schuster & Finkelstein, 2006).

Era IV, 1980s to Present: Teaching and Research Unbundled and Teaching Unbundling Begins to Intensify

In the current era, Schuster and Finkelstein (2006) describe that faculty roles have mostly unbundled into primarily research or primarily teaching roles and service is relegated to a periphery. They also document how this is predominantly professional unbundling as most appointments are teaching only, and tenure-track faculty are incentivized to focus on research across institutional types. The role of research in four-year colleges and universities is intensifying even as there are calls for faculty to focus more on teaching because the non-tenure-track roles are largely performing the teaching duties on most campuses nationwide. The influx of NTTF means that faculty on-the-whole are much less involved in institutional service than in any prior era where faculty have been professionalized.

While professional unbundling has set in, instructional unbundling is the new focus in this era. Many commentators see this instructional unbundling facilitated by the expansion of ICT, declining public funding for higher education, and continued massification of higher education (Slaughter & Rhoades, 2004; Smith, 2008). Many also argue that this era can be characterized as a focus on productivity, efficiency, greater access, and increased cost control of higher education – all characteristics and ideologies espoused within neoliberalism. Neoliberal philosophies[3] suggest that higher education can best meet the needs of students and society through more privatization of the enterprise into for-profit entities, by pressuring existing public institutions through competition and decreasing funds to become more productive and efficient, and by encouraging institutions to become more entrepreneurial and raise revenue (Slaughter & Rhoades, 2004). This introduction of market logic and corporate approaches also brings in new employment strategies that are being used within the private sector such as contingent labor, deskilling of workers, and automation of work through technology to save costs (Rhoades, 1998).

Higher education has been increasingly pressured to educate more students, and less money and greater improvements in ICT over the past two decades have led to an increase in institutions' abilities to reach more students through online and distance education (de Boer et al., 2002; Howell, Saba, Lindsey, & Williams, 2004; Howell, Williams, & Lindsey, 2003; Paulson, 2002). As a result of the

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[3]The corporate orientation to higher education though is certainly not new nor limited to contemporary times. Lucas (1994) described the impact of corporate models on the management and governance of higher education institutions within the late 1800s and early 1900s. The tradition of outside trustees also resulted in a corporate influence on higher education throughout its history.

proposed promise of technology to improve access and decrease costs, this has led to an era of reconsidering faculty roles in light of the use of technologies. As some higher education institutions (both non-profit and for-profit) are seeking to maximize the cost effectiveness of their operations, this has once again led to an unbundling of faculty roles related to teaching as some functions might be done more cheaply by other individuals with less expertise. In addition, faculty lack technology expertise (and may not be interested in learning the technology) to utilize the new information and communication technologies to their fullest. Thus, rather than hire faculty members to develop and deliver entire courses, the teaching process is unbundled. A small number of faculty members are hired to design course curriculum, while delivery of content, advisement, and assessment of students is left to other employees who are paid and supported less. These employees may not have content expertise or specialized training as traditional faculty do.

Smith (2008) provides an overview of this new model called the virtual assembly line, in which teaching can be broken apart into nine different functions beginning with the instructional design (performed by technology and graphics experts), the subject matter experts (faculty members), the development team (graphic designers, web designers, web programmers, and editors), delivery (networking, technology, and learning help desks), interaction (faculty, often outsourced to tutors), grading (peers, tutors); improvement (instructional design team, faculty, assessment); and advising (student services, tutors, specialist leads). Increasingly, the role of instruction is becoming differentiated among individuals of different expertise needed to create the best online courses.

Institutional unbundling has also been occurring as result of the neoliberal philosophy and growth of technology with the development of for-profit institutions and remedial education providers. The for-profit sector that was a mere 1 % of post-secondary education 20 years ago and now comprises 14 % of the sector, surpassing the liberal arts sector in size (Aud et al., 2011). These institutions rely heavily on technology and a new employment model for faculty. Additionally, remedial education providers utilize online platforms for course management that are increasingly moving into course design and publishers that design courses and develop textbooks, often taking the place of faculty in curricular design (Paulson, 2002). All of these aspects were once part of the faculty role and are now increasingly being a performed by for-profit providers, as well as a handful of non-profit providers.

It is important to note that various types and levels of instructional unbundling can be identified. University of Phoenix uses faculty to design courses and then teaching professionals who may not be faculty to design, deliver, and assess courses (Paulson, 2002). Western Governor's University uses external providers for development and assessment of courses, but tutors as support and advisors (they have course mentors that are faculty and facilitate class material). Traditional institutions have also experimented with unbundling and undergraduate teaching assistants who act as "peer instructors." Examples include the first-year engineering design courses at the University of Washington and University of Maryland (initially funded by the National Science Foundation) as well as more recent Pew Course

Redesign projects such as University of Colorado-Boulder's astronomy, who used peers for much of the instruction with faculty taking a lesser role (Paulson). A key area where unbundling has been occurring is with large introductory courses taught at most institutions. Twigg (2003) and Adelman (1995) demonstrate that up to half of the credit hours produced at the lower-division level at American colleges and universities are concentrated in only approximately 25 course titles. Rather than having each faculty member at an institution individually develop these courses, a few faculty members nationally are designing them to cut costs. Faculty at institutions can then focus more on advising and grading students. In this approach course design and development is unbundled from the faculty role. The National Center for Academic Transformation (NCAT), led by Twigg, has designed key courses, and institutions are signing up to use them. Massive open online courses (MOOCs) are yet another model in which a small number of faculty members design and develop courses like NCAT, but then assessment (if it occurs, which often does not happen in MOOCs) is unbundled to peers and advising to peers and tutors. Some other components of courses like faculty responding to questions are simply not part of MOOCs. It is clear that unbundling of instruction is occurring in many different ways; there is no single model.

Summary and Lessons from History

The first era of unbundling was highlighted by the initial hiring of faculty with specialized roles, denoting unbundling of faculty roles from educating the whole student to being responsible for specific areas of study, along with the initial bundling of administrative duties with the faculty. The second era was characterized by further unbundling of faculty into more specified disciplines, as well as unbundling the administrative duties from the faculty. While administration and teaching were unbundled in this era, rebundling was exhibited as faculty took on additional functions in addition to teaching, including institutional governance, research, and service. In the third era, unbundling of teaching from research and the increase in use of NTTF occurred with the emergence of new teaching-focused institutions. The present era is characterized by the further unbundling of teaching from research and increased differentiation of teaching responsibilities. In an ironic twist, faculty today look most similar to the tutors of the early eighteenth century with contingent faculty appointments, lack of permanent career path, and limited expertise and specialized knowledge; professionals in student affairs now provide support for student growth and development. After three centuries, we may be returning to the original colonial faculty model, minus the attention to character and student development.

There are several important lessons or insights to be learned from the history of unbundling of the faculty role. First, it has typically not been guided by any research related to teaching and learning. Decisions have been made to shift the faculty roles largely as a result of external influences and forces – whether they be new models or

types of institution (college, university, community college, or for-profit), needs for access, rise of new professions such as student affairs or assessment professionals, or cost control. In fact, commentators at the time of unbundling faculty roles have always registered concerns about what might be lost in the unbundling; these concerns were largely ignored and often continue to be evident as roles are further unbundled. Whether it be faculty no longer providing career advice in areas they have the greatest expertise, faculty losing a broader sense of the general education curriculum, tensions between the teaching and research roles, or the loss of faculty feedback in grading when given to peers, these inherent tensions remain even as the faculty roles continue to be unbundled. If these challenges remain after hundreds of years, it is unlikely that future iterations of unbundling will resolve these tensions and perhaps will only exacerbate them. None of the historic or current challenges that result from unbundling have ever been adequately addressed.

Even though unbundling has created a series of tensions and problems, it has not generated much research specifically addressing unbundling over the years. In the third section of the paper we review the limited empirical research on the unbundling of faculty roles. What we know from history is that we have not had much research to guide action. Campus leaders and faculty have allowed ideologies and influential forces to shift and mold the faculty role. Throughout, we have learned nothing empirically about the consequences that potentially arise or how to address them. History shows us the importance of conducting research and understanding advantages and disadvantages of various forms of unbundling since perennial problems have emerged from not understanding challenges. Some approaches may be less problematic than others, but we have very little research to understand the issue or guide policy.

Another lesson from history is that unbundling continues to fragment the learning environment with faculty advising being unbundled into student affairs or assessment or course creation in new on-line models. There is considerable evidence (reviewed in the empirical research section below) that students are often disadvantaged and perhaps even harmed by the fragmentation of learning whether it be of subject matter (Barber, 2012; Pace & Middenhorf, 2004), in and out-of-classroom experiences (Kuh, Kinzie, Schuh, & Whitt, 2005), or lack of connection between academic and student affairs (Kezar & Lester, 2009). Yet, even though there is research to suggest that unbundling leads to fragmentation and there is research that fragmentation is not beneficial to learning, we continue to create learning environments that are problematic for students (Kuh & Hu, 2001). In fact, today's largely first-generation and low income college students benefit most from models such as learning communities where in and out-of-classroom experiences are closely linked, different subject matter is connected, and student affairs and academic affairs work closely to develop the learning environment (Kuh & Hu, 2001; Tinto, 2008).

Our historical review also does not show a linear direction for continuous unbundling as some commentators have suggested (Paulson, 2002). Instead, faculty roles have been rebundled at times, shifting advising off, but governance on, national service added in and admissions and registration shifted off. The current imagination of segmenting teaching or research functions further and further is only one version

of unbundling that fits into the neoliberal philosophy of cost savings but does not examine the outcomes or effectiveness of such unbundling. We need to consider not just the notion of unbundling when we theorize about the faculty role but also rebundling.

This historical overview provides context for present-day developments regarding the unbundling of the faculty role. Unbundling in higher education is not a new occurrence, yet many commentaries on the current unbundling of instruction for online and distance education often do not take into account this broader historical context. Therefore, they do not examine some of the problems, tensions, lessons, or need for research that emerge as a result of unbundling and instead see this as a new phenomenon to experiment with, ignoring historical lessons. Furthermore, based on the trend toward increased differentiation of the faculty role in U.S. higher education, one would expect that unbundling is likely to continue. In the next section, we utilize several theoretical frameworks to make sense of the historical mechanisms that led to the current differentiation of the faculty work.

Theoretical Perspectives on Unbundling

As we wrote above, much of the scholarship regarding unbundling is largely atheoretical in nature (though exceptions exist including Jencks & Riesman, 1969; Lee, Cheslock, Maldando, & Rhoades, 2005; Slaughter & Rhoades, 2004; Smith, 2008; Vakkuri, 2004; Veysey, 1965). Our review of the history of unbundling the faculty role reveals a variety of historical and environmental mechanisms that led to this differentiation. In this section we present several potential theoretical lenses for understanding how and why unbundling occurs. In order, we highlight the contributions that theories of professions, contingency, and managerialism/academic capitalism can make to our understanding of the unbundling phenomenon. A table summarizing the theories is provided in Table 3.2.

Professional Theory

Professional theories provide insight into the unbundling of the faculty role, beginning first with the emergence of the faculty profession and the subsequent unbundling and rebundling that occurred throughout its history. In short, professional theory (Abbott, 1988; Krause, 1996) applied to the academic profession suggests that unbundling occurs to maximize the expertise of faculty and to remove tasks deemed less central to the professional identity and role. Student development, for example, was seen more as counseling and less connected to the faculty role as knowledge worker. Also, this theory asserts that faculty, closest to the role, know the appropriate designation of roles to meet the goals. This is due to the evolution of the university professoriate as a profession and the response of the profession to

Table 3.2 Theoretical mechanisms in unbundling the faculty role in higher education

Theory	Assumptions	Mechanisms
Professional	Professions/guilds emerge as individuals exert power over abstract knowledge and its application	Professional class of faculty emerge with increasing graduate education and differentiation into variety of disciplines (*Era I & II*)
	Differentiation within professions is due to external and internal forces	Differentiation of academic professions into faculty and administrators occurs through increasing complexity in institutional structures (*Era II, III, & IV*)
	Professional-managerial classes emerge separate from the knowledge monopolies of the professions in multi-professional organizations; competition for professional jurisdiction	Internal stratification establish proletariat class tasked largely with interacting with students while others are responsible for pure aspects of the profession; managerial class of administrators gain more power (*Era III & IV*)
Contingency	Increasing complexity and environmental uncertainty leads to differentiation of the technical core of organizations	Growth in higher education enterprise due to:
		Growing student body (*Era II & III*)
	Managerial level buffers the technical core from uncertainties of the environment	Post-war expansion into larger state systems (*Era III*)
		Increased federal support for research (*Era III*)
	Differentiation and integration of tasks is strategy used to buffer organizations from uncertainty	Declining state support (*late Era III, Era IV*)
		ICT improves potential for growth in higher education (*Era IV*)
Managerialism and Academic Capitalism	Professional-managerial class emerges as antagonist to capitalist class and overseeing production of working class	Managerial values influence need for more managerial layers in higher education to oversee growing complexity and differentiation (*Era II, III, & IV*)
	Corporate values have overtaken those of other institutions in society, including education	Corporate values pervade higher education, leading to emergence of administrators with more power to set course, challenging academic governance (*late Era III, Era IV*)
	Managerial control results from improving technology and growth, separation of control from ownership, management ideology and career trajectory, and self-interest to maintain system for goals of management rather than goals of institution	Reduced state support leads to tightened budgets (*Era IV*)
		Academic managers push for a de-skilled workforce to lead to greater cost-savings and efficiencies (*Era IV*)

Table 3.2 (continued)

Theory	Assumptions	Mechanisms
	Competition between institutions best serves students and society	ICT allows for unbundling of teaching roles to distance faculty from production (*Era IV*)
	Reduced funding forces institutions to seek revenues in a corporate model	
	Corporatization leads to changing structures of faculty roles	
	Technology serves to replace faculty monopoly on knowledge	

evolving social contexts and changing pressures. Before unpacking the assumptions of professional theory that apply to unbundling the faculty, it is helpful to know what a profession is. Abbott defines professions as "exclusive occupational groups applying somewhat abstract knowledge to particular cases" (p. 8). The central feature of professional life from this perspective is the link between a profession and the work in which it engages. The emergence of the university professoriate in the first two historical eras is evidence of the professionalization of the faculty role. The professoriate in the United States was based on a German model, which has roots in the scholar guild dating back as far as the 1100s (Krause). Faculty became professionalized in their roles as instructors whose domain included knowledge production and passing on this knowledge through college instruction.

Professional theory scholars acknowledge that differentiation occurs within professions, but they ascribe this differentiation to different sources. Abbott (1988) contends that professions are constantly laying claim to jurisdiction over their abstract knowledge and domain, and professions evolve as a result of external social forces:

> From time to time, tasks are *created, abolished, or reshaped* by external forces, with consequent jostling and readjustment within the system of professions. Thus, larger social forces have their impact on individual professions through the structure within which the professions exist, rather than directly (p. 33, emphasis added).

Social forces impact the broad system of professions, and differentiation is a way to absorb these disturbances as a means to lay stronger claim to a profession's jurisdictional domain. This differentiation can result in new professions, such as the emergence of student affairs due to the formal professionalizing of faculty in the late nineteenth and early twentieth centuries. Differentiation also occurs within professions, and Abbott points to four types of differentiation that occur based on internal stratification, client differentiation, workplace structure, and career patterns. Our review of the history of the university professoriate reveals that it has exhibited all four of Abbott's kinds of differentiation: (1) internal stratification began by differentiation faculty from administration and can be seen in the many levels of the professoriate from the highest level tenured professors to the part-time instructor; (2) tenured faculty often teach graduate or upper-level students

where part-time instructors are responsible for teaching hundreds of introductory students; (3) the autonomy afforded to a tenured professor is absent for instructors or course designers; and (4) career patterns unfold differently depending on one's place in the hierarchy of faculty life. Abbott attributes this differentiation to evolving social and cultural structures, most notably the changing form of knowledge that results from improving technology and the rise of the large, bureaucratic organizations. Specifically for the academic profession, increasing institutional size and complexity certainly contributed to the need for further differentiation, first between faculty and administrators in the second era described above and the rise of new institutions in the third era leading to more emphasis on teaching in some venues. The resulting professional classifications for academics result in a more prestigious subset of faculty on the tenure-track who can focus on research, teach more specialized classes, and have more autonomy, and a less prestigious group with less autonomy and more responsible for dealing with the largest number of clients (students) through introductory courses. In addition to these patterns of internal differentiation, Abbott also speaks to the competition that arises between professions over jurisdiction of specific domains; our discussion below regarding managerial theory highlights the competition among faculty and academic administrators over control of the academic domain.

Krause (1996) offers a slightly different explanation for professional differentiation and claims that changes to professions (especially in the last century) result from shifting of power between the professions (or guilds), the state, and capitalism; his theory directly addresses the academic profession. The university professoriate enjoyed the most power to control aspects of professional life such as membership, training, and workplace structure through the 1960s as detailed in the history above. However, professional power began to erode around 1970 and became shared with capitalism and the state. Krause points to the shift from private to public universities and the growth in higher education due to postwar expansion, the rise of federal and state funding, and growing percentages of students increasing the power of both the state and capitalism on the faculty profession. One consequence of this shifting power is the emergence of different classes of faculty – cosmopolitan and local. Research faculty (i.e., cosmopolitan) at major universities and elite colleges retained their guild power, while those at lesser-prestige institutions and those who do not benefit from tenure (i.e., local) lose their power to the state and capitalist forces.

A criticism of professional theory is that it may not bundle faculty roles based on the needs of students or institutional goals (Rhoades, 1998). Professional interests are used to designate and determine roles rather than a collective appreciation of various groups' goals or interests to determine the role or function of faculty. While professionals assert they have the greatest expertise to design roles appropriately, the history we reviewed suggests that as other needs came into the environment (such as the need for a focus on teaching), faculty did not always recognize these needs or incorporate them into their roles.

Both Abbott (1988) and Krause (1996) offer perspectives on the influences of external forces influencing the internal structure of professions. The remaining theories we discuss build on different facets of this professional theory narrative

to paint a more complex picture of faculty unbundling. Contingency theory offers new mechanisms to explain how external forces can influence internal structures, managerial theory speaks to faculty competing for jurisdiction with the emerging profession of academic administrators, and academic capitalism directly speaks to the role that the state and capitalist forces can play in generating change within the system of guilds and professions.

Contingency Theory

Contingency theorists adhere to the maxim that there is not one best way to organize (Ketokivi, Schroeder, & Turkulainen, 2006), and they assert that with increased organizational complexity and growth come the need for greater differentiation within an organization (Burton & Obel, 2004; Galbraith, 1973; Lawrence & Lorsch, 1967). Unbundling is a natural evolution within organizations as they grow in size to accommodate new and more complex functions. Contingency theory suggests that unbundling occurs for several reasons, including the need to divide tasks in organizations and to buffer the technical core of the organization from the uncertainties of the environment. One of the central tasks of an organization is to define its main function and divide up the tasks to meet this function (Ketokivi et al., 2006). The function of higher education in the U.S. has gradually evolved; the predominant function in the early eras was to educate students particularly for civic and religious leadership and to preserve the values and traditions of society. While these key function remains, others were added, such as the pursuit of scientific research for national interests. New functions bring with them the need to define different roles and divisions within an enterprise to meet these functions. Unbundling seems a natural result of higher education taking on more functions.

Aside from the natural need to divide up tasks, contingency theory also posits that differentiation occurs as organizations become more complex and are faced with environmental uncertainties (Galbraith, 1973; Lawrence & Lorsch, 1967). Most organizations are comprised of three levels: the technical core, managerial level, and institutional level (Thompson, 1967). The technical core is at the heart of the organization and is responsible for performing essential tasks and meeting the goals that define the organization – in this case the evolving functions of colleges and universities relating to teaching and research. The institutional level is farthest from the core and is the part of the organization that interacts with its surrounding environment. This environment presents many contingencies or uncertainties that the organization must respond to, including competing organizations, consumers, and regulatory agencies. Between these two levels are the managers who are tasked with guiding the technical core and buffering it from the contingencies faced at the institutional level (Thompson). One way to buffer the technical core of the organization is through differentiation in the technical core to ensure that the organization can still meet its primary functions (Ketokivi et al., 2006;

Lawrence & Lorsch, 1967). Therefore, as organizations grow larger and more complex and environmental uncertainty increases, the need to differentiate tasks becomes increasingly important.

Contingency theories applied to unbundling in higher education paint a picture of higher education institutions responding to increased complexity, uncertain environments, and improving technology. Higher education institutions became overly-complex and under-differentiated (Enders, 2005b), necessitating differentiation of structures and services in order to respond to new complex missions (de Jonghe, 2005; Enders, 2005a) and environmental uncertainties (Duderstadt, 1999). Higher education experienced increased complexity and massive growth, especially in the second and third historical eras, due to a growing student body, post-war expansion into larger state-funded systems, and increased federal support for research (Krause, 1996; Schuster & Finkelstein, 2006). Several forms of unbundling resulted from this expansion, including differentiation of administrative tasks and responsibility for student development from the faculty and the initial unbundling of teaching and research into faculty appointments responsible for one or the other. Toward the end of the third era, environmental uncertainties, in the form of lessened state support and increasing accountability pressures, meant that administrators in the managerial level of universities were forced to buffer the core of teaching and research by separating these tasks with greater frequency (Fairweather, 1989; Vakkuri, 2004). Finally, improving ICT has altered the way in which the technical core of universities can operate. Whereas teaching used to be limited to in-person class time, new modes of communication have allowed the technical tasks to be performed in different and expanding ways, allowing the pedagogical infrastructure to change and increasing the potential for more growth (Finkelstein, 2003; Levy, 2003).

Therefore, contingency theory identifies unbundling as a way to respond to external forces and interests. However, one criticism of this theory is that it does not designate how managers are supposed to navigate competing interests/forces from outside; it does not inherently suggest a way external interests might or should be accounted for. Up to this point, we have examined unbundling through the lenses of professional and contingency theories. Both theories suggest that unbundling occurs as a response to external pressures and forces, either as a natural evolution of professions or as a way to preserve the main functions of the organization. Together, these theories provide a rather uncritical account of unbundling. The next two theories, managerialism and academic capitalism, offer more critical perspectives.

Managerialism and Academic Capitalism

Two aspects of managerial theory provide useful perspectives of unbundling the faculty role in higher education: the rise of the professional-managerial class (Ehrenreich & Ehrenreich, 1979) and corporate colonization (Deetz, 1992). Both focus our attention toward the increasing power exhibited by the academic administration, most noticeable toward the latter part of the third era and in this current

fourth era. This theory describes academic manager's tendency to deprofessionalize faculty roles, rather than any inherent logic to unbundling to fit a role or function. Ehrenreich and Ehrenreich defined the professional-managerial class (PMC) as "salaried mental workers who do not own the means of production and whose major function in the social division of labor may be described broadly as the reproduction of capitalist culture and capitalist class relations" (p. 12). This class of professionals, which sits between the proletariat/working and the bourgeois/capitalist classes in society, developed through collective action as an antagonistic response to the latter and resulting in control or superiority over the former.

We acknowledge that this conceptualization of the PMC is meant to apply to broader patterns in society, but the parallels that can be drawn to the faculty role are helpful. According to Ehrenreich and Ehrenreich's (1979) definition, the ways that the university professoriate evolved as a profession would largely resemble the characteristics of the PMC. However, as our history of unbundling above makes clear, the rise of academic administrators has changed this dynamic for faculty. Faculty tasks have become more unbundled, and the autonomy once afforded faculty members is becoming increasingly weakened due to the proliferation of hiring faculty off-the-tenure-track and for unbundled tasks in instruction. Power for how the profession operates increasingly rests with administrators who resemble the characteristics of the PMC, and individual faculty, increasingly distanced from their autonomy and control over the profession, more aptly resemble the working class. This is further illuminated by Deetz's (1992) notion of corporate colonization.

Deetz (1992) contends that corporate values have subsumed the power of other institutions within which we find meaning for our lives. A central premise of his theory is the rise of managerial capitalism, in which increasingly complex organizations and hierarchies resulted in organizations that required the direction and coordination of professional managers who supplant other types of professionals or try to take away power in order to control various types of workers. In doing so, managers reduce the cost for production and pay for workers and use technology to replace the workforce, all while rewarding themselves with increased staff and higher salaries, which may lead to more efficient but not necessarily more effective organizations. Much of the cost savings goes into building the bureaucracy. This is predicated on several main assumptions (Deetz). First, the corporate form is favored over other organizational forms (i.e. professional organization) in areas where improving technology and rapid growth advantage administrative over market coordination. Second, the move toward corporate forms gives rise to a unique management profession and ideology with a distinct career path due to specialized training, skills, and natural progression upward in the organization. Finally, the long-term stability and growth of managers' domains replaces the long-term organizational goals that were sought upon the organizations' conception (Deetz). The critique of managerial theories is that they use one group's interest to assert and develop the appropriate faculty roles.

Deetz (1992) focused on corporations largely created to earn profits, but the effects of corporate colonization can be seen in higher education in recent eras. Corporate values have infiltrated higher education institutions (Kezar, 2004; Slaughter

& Rhoades, 2004). While growth and complexity led to the initial emergence of administrators to oversee certain functions of colleges and universities, the corporate colonization perspective suggests that administrators became a professional class who eventually focused on their own self-interests, leading to decision-making based on corporate values further removed from the initial goals of education for the public good (Kezar) and challenging faculty governance of earlier eras. Academic administrators have emerged as unique professionals in their own right, and higher education institutions as multi-professional organizations become a venue for competition. Thus, the emergence of academic managers through corporate colonization in higher education ties into the earlier notion of professions competing for jurisdiction over the broader higher education endeavor (Abbott, 1988). The ways in which corporatization and managerialism have influenced higher education are described in our final theoretical framework, academic capitalism.

Similar to managerialism, scholars of academic capitalism demonstrate the growth of managerial interests on campus. Scholars note that neoliberal philosophy drives the value of corporatization and privatization of services leading to higher education becoming more focused on revenue generation and the commodification of knowledge (Slaughter & Rhoades, 2004). This philosophy suggest that competition between institutions results in better outcomes for students and society, especially in times of tighter budgets due to lessened state support. The underlying economic perspective is that unbundling faculty tasks leads to greater efficiency by maximizing output and reducing labor costs. Deskilling faculty members emerges from this academic capitalism perspective, which describes a process by which managers prefer to create a largely deskilled workforce in order to reduce costs and increase efficiency through high productivity and routinization of work (Braverman, 1974; Rhoades, 1998). In the process of deskilling, academic managers emerge as holding most of the jurisdiction for the higher education endeavor.

In the context of faculty unbundling, academic capitalism and deskilling manifests itself in the reduction of faculty responsibilities through hiring both off the tenure track and part-time workers who can accomplish some of the tasks that the complete scholar once could without assigning them the professional designation given to full-time, tenured faculty members. Increased efficiency in the face of tightening budgets due to lesser state support comes through the use of non-tenure-track appointments, especially those that are part-time, who cost much less than tenure-track faculty to employ while still meeting the goals of institutions. The economic argument inherent in these theories is at the heart of the works of many scholars who point to the benefits of an unbundled model of distributed learning for online and distance education (Boettcher, 2000; Hawkins, 2000; Jewett, 2000; Neely & Tucker, 2010; Paulson, 2002). The goal from this perspective is to minimize the total capital and labor required to still meet goals of the technical core. Neoliberal and corporate philosophies taking a stronger hold on higher education can explain not only why institutions have responded by unbundling the faculty role through hiring faculty focused solely on teaching, but also why the further unbundling of instruction through utilizing deskilled, lower-cost employees to deliver instruction to many more students continues to occur.

Utilizing Multiple Theories – An Example

The theoretical examples above suggest relevant frameworks for examining unbundling, but utilized separately they do not offer a comprehensive view to better understand the history and current context. While multiple theoretical lenses are rarely used, some examples do exist (e.g., Lee et al., 2005; Smith, 2008). For example, Lee and colleagues (2005) examine how the larger political economy has always shaped faculty roles, which draws on notions of *contingency theory*. However, they show how external forces are not neutral as often suggested by contingency theory, but that external political and social forces reflect particular ideologies that serve powerful interests of the elite, reflecting *academic capitalism*. They trace how ambitions for industrialization of the US economy supported the Humboldtian scholar. Later they describe how the military industrial complex of the post WWII-era supported amplified faculty research roles. For example, fields grew and became prestigious that were receiving massive federal research subsidies from the newly created National Science Foundation and entities such as the Department of Defense, Department of Energy, and NASA. They note that the biggest winners in this regard were various fields of science and engineering (e.g., Physics, Math, Aerospace Engineering, Electrical Engineering, Nuclear Engineering). They then go on to show how the current knowledge economy is shaping the deprofessionalization of faculty roles. Moving from a post-industrial/service economy to a knowledge economy has resulted in faculty being regarded less as elite intellectuals and more as knowledge workers; faculty are needed to educate larger numbers of students to further the economy, and the teaching role is being emphasized more. Further, the fiscal crises of the 1970s led to a constriction in the hiring of faculty and oversupply of applicants for jobs. The academic labor market quickly became an employers' market in which for some fields there were literally hundreds of applicants for every position, which still continues today. The work of Lee and colleagues suggests the value of utilizing multiple, complementary theories in examinations of the faculty role, and we argue for more of this work in the following section.

Summary and Lessons from Theory

Our historical review suggests that unbundling has occurred for the past few centuries. Some of the conditions that contribute to this unbundling include the emergence of multiple professions, increasing and decreasing support from the state, emergence of new philosophies and values for managing higher education, and changing technology. However, while these varying conditions can be seen in the history, a common narrative informed by theory emerges in which competing interests, influenced by external forces and emerging corporate values, affect how unbundling has occurred.

We can draw several additional insights from this theoretical review. First, we find that a single explanation like contingency theory, in which external forces reinforce the need to continue to reconfigure the role into more discrete roles based merely on growing size and complexity and which is often applied to this phenomenon (e.g., de Jonghe, 2005; Duderstadt, 1999; Enders, 2005a, 2005b), is likely faulty. We can see how the growth of institutional size did make it impossible for faculty to carry out and engage in all the functions to run a university. New functions like research and specialization suggests the need to move away from scholars having a holistic view of knowledge. However, bringing in professional and managerial theories demonstrates that unbundling is not inevitable, and faculty roles have unbundled and rebundled over time for many different reasons. A single lens to examine or understand this issue likely misses out on various mechanisms at play.

Utilizing multiple theories also suggest the need to examine this issue from a more critical perspective – whether that be a reasoned concern about academic capitalism and its role in reconfiguring faculty roles, or a concern about professionalism, which may have privileged faculty interests over the concerns of student access, cost, or learning. Each theory has its blind spots and tends to represent a single view, interest, or perspective. We also suggest through the history and theories that faculty roles have never been determined largely by an intentional design for meeting student or institutional goals as contingency theory or other rationalist theories might suggest. While this may seem part of the historical narrative, we suggest that competing interests of various groups play the largest role. Professional theory and managerialism suggest competing interests are at play in defining faculty roles rather than an intentional design to match the role to the needs of students and institutions. Faculty claim that students are best served by faculty who are scholars and who are highly qualified and trained. Administrators in a neoliberal era feel students are best served by the least expensive faculty member and in an employment model that can be developed to serve the largest number of students to earn a credential.

Our interpretation of the history challenges the idea that unbundling or rebundling is built on any logic or empirical research that faculty role configurations work to meet goals of student learning or those of an effective teacher or scholar. Utilizing the theories, we can interpret the history in the following way. Professional interests strongly shaped the faculty role in the first two eras (professional theory). Yet, there was some negotiation of faculty and managerial interests in Era II around advising, student development, national service, and governance that seemed to suggest some compromise among more than one interest, which could be interpreted as productive for the evolution of the faculty role. In the third era, policymakers had increased influence through the massification of higher education, the development of community colleges, and new roles such as adjuncts and teaching-only roles in which faculty were promoted on teaching rather than research (contingency theory). Era III represented some negotiation of professionals and managerial interests as well those of external groups like policymakers, students, and parents. But, over time the faculty role did not expand enough to include these broadening

interest groups and reflected more interests of mangers (professional theory and managerialism). Professional norms became out of step with policymaker and student interests. In Era IV, managerial interests seem to be overwhelming faculty interests, but also any other stakeholder interest as well (managerialism and academic capitalism). In reviewing this history, some of the shift in faculty role aligned with student and policymakers' interest – for example the focus on teaching among community college faculty. However, the move to a contingent faculty was not necessarily aligned with students' interests in faculty access and interaction. While there is some precedent for some meaningful negotiation among interests, there are no sustained efforts or systemic vehicles to-date to examine differing proposals asserted about the nature of the faculty, whose interests they serve, and what will be the outcome of such proposals in relationship to each other.

The theories we reviewed explain the privileging of one set of interests above another. Contingency theory, which suggests a navigation of interests and external forces, provides no roadmap for how institutions and individuals within them can negotiate varying interests. However, contingency theory provides an avenue for considering the negotiation of interests. The professional model of faculty provides no mechanism for examining other interests and bringing them to bear on the faculty model. As we move forward with thinking about the nature of the professoriate, our existing theories demonstrate the dominance of one interest or value system and then another, but likely the best model for faculty will be one where multiple interests are considered when creating the role, including those of students, faculty, policymakers, administrators, parents, and other vested groups. This model can be informed by the theories we reviewed along with additional theoretical perspective we describe later in the paper.

We now turn to the research literature to further explore the phenomenon of unbundling. As our review reveals, very few researchers are specifically studying unbundling. However, we identify several areas of research that relate to unbundling in the three areas – institutional, professional, and instructional – and review them below.

Research on Unbundling

Little is empirically known about the phenomenon of unbundling; most of the literature pertaining to the unbundling of faculty roles is conceptual in nature. However, scholars have addressed various aspects of higher education that are either directly or indirectly related to the discourse surrounding the unbundling of faculty roles. We now turn to this literature to highlight what is known about how unbundling has manifest in higher education. As Finkelstein (2006) noted, research into the academic profession was not conducted until the 1950s. Early research focused on history rather than social science research which only began to emerge in the 1960s. So despite the historic arc of unbundling we identified in our review above, the amount of research to draw from pertaining to different

aspects of unbundling is limited. We have identified several areas of research that address different aspects of unbundling reviewed above. A summary of the empirical research and key findings is provided in Table 3.3.

Institutional Unbundling

Institutional unbundling refers to the separation of services within universities that were once performed by the faculty (Troutt, 1979). As our history revealed, faculty members first held non-permanent, pastoral roles with responsibility for character development of students in addition to their academic training. Eventually much of the administrative aspects of which faculty were responsible were unbundled into separate departments and functional areas with their own administrative structures and responsibilities. In essence, the seamlessness of the student experience became fragmented, leading them to interact with a variety of individuals responsible for different aspects of their lives in college. We have identified three areas of research that reflect the impacts of institutional unbundling on higher education. First, research on in-class and out-of-class learning and the role of faculty speaks to the importance of faculty beyond the classroom. We then explore the proliferation of outsourcing and for-profit providers as examples of further institutional unbundling. We conclude this section with neuroscience research on learning and what it might suggest is problematic with institutional unbundling.

Differentiation of In-Class vs. Out-of-Class Learning

Much of the research differentiating in-class and out-of-class learning emphasizes student experiences that contribute to learning and development. Research on experiences with faculty, both in and out of the classroom, is prevalent in the higher education and student affairs literature (e.g., Cole & Griffin, 2013; Crisp & Cruz, 2009; Feldman & Newcomb, 1969; Jacobi, 1991; Pascarella, 1985; Pascarella & Terenzini, 1991, 2005). Cox, McIntosh, Terenzini, Reason, & Quaye (2010) note: "No shortage exists of empirical studies of the nature, quality, and frequency of faculty-student contact and their educational consequences for students" (p. 768).[4]

As we mentioned above, institutional unbundling led to a fracturing of the student experience, with faculty members responsible for classroom instruction and other professionals responsible for the other aspects of the college experience. However, the research examining student-faculty interactions reveals substantial gains that

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[4]Research pertaining to out-of-class experiences with faculty is the focus of this institutional unbundling section. Research pertaining to in-class experiences, specifically pertaining to the use of student-centered pedagogy, is mentioned regarding the proliferation of non-tenure-track faculty in the professional unbundling section below.

Table 3.3 Research areas and findings pertaining to unbundling the faculty role in higher education

Type of unbundling	Area of research	Key findings and insights
Institutional unbundling	In-class vs. out-of-class learning	Students benefit from interactions with faculty out-of-class
		Fragmented learning environment results from institutional unbundling
	Proliferation of outsourcing and for-profit providers	Outsourcing is prevalent in higher education, more attention given now toward instructional outsourcing
		Limited research on the effects of this outsourcing; most motivations are for cost-savings, not to improve education
	Neuroscience and learning	Students learn best when they make connections to prior knowledge and world experience; institutional unbundling removes faculty from that experience
		Assessment linked to class content also improves learning, suggesting limitations of unbundling instruction
Professional Unbundling	Teaching/research nexus	Mixed results of research on productivity of teaching and research together
		Preference toward research over teaching
		Structures and incentives may need to change
	Proliferation of non-tenure-track faculty	Trend toward use of NTTF related to declines in student outcomes
		Lack of supportive policies and engagement with campus can lead to these outcomes
Instructional Unbundling	Teaching assistants/peer teaching	Research on peer teaching suggests some benefits for students
		Lack of research on effectiveness of graduate teaching assistants
	Online Education	Studies of cost effectiveness are inconclusive; difficult to truly study costs
		Studies of quality generally apply to hybrid online model, not fully unbundled models
		Lack of clear research on positive or negative consequences of unbundling in online education

result from students interactions with faculty outside of the classroom (Cole & Griffin, 2013; Kuh & Hu, 2001; Pascarella & Terenzini, 2005). Importantly, these gains do not just result from interactions that relate to classwork and intellectual pursuits. In general, studies have shown positive correlations between student learning outcomes and a variety of interactions, including working on research with faculty members, being a guest in their homes, speaking with them outside of class, and interacting with them through campus committees or organizations (Astin, 1993; Kuh, 2003; Kuh & Hu, 2001). Specific gains in academic-related outcomes associated with meaningful substantive and social interactions with faculty include persistence toward degree completion (Braxton, Bray, & Berger, 2000; Lundquist, Spalding, & Landrum, 2003; Wang & Grimes, 2001), higher grade point average (Anaya, 1992; Anaya & Cole, 2001; Carini, Kuh, & Klein, 2006), and better performance on standardized tests (Anaya, 1992). Beyond academics, student-faculty interactions are also associated with gains in leadership abilities (Sax, Bryant, & Harper, 2005), critical thinking and problem solving (Carini et al., 2006), self-authorship (Wawrzynski & Pizzolato, 2006), communication skills (Bjorklund, Parente, & Sathiyananthan, 2004), and character development (Jenney, 2011). These outcomes are often more pronounced for students of color and first generation college students (Allen, 1992; Amelink, 2005; Anaya & Cole, 2001). Institutional unbundling resulted in higher education institutions where faculty were separated from out-of-class experiences of students, yet the research shows that the students who are fortunate to have substantial interactions with faculty beyond the classroom benefit. The differentiation of faculty to focus primarily on intellectual pursuits in the classroom precludes this from necessarily being the norm in higher education.

Aside from interactions with students out of the classroom, institutional unbundling also separated faculty from decision-making and strategy setting in other aspects of college life. In recent years, the student affairs field in particular has drawn attention to the empirical benefits of more integration and collaboration across college functions that lead to improved student learning and success. Researchers have highlighted best practices related to working together across functional areas within institutions (e.g., academic and student affairs) and the disadvantages that come to students in a fragmented learning environment (Keeling, 2004; Kezar & Lester, 2009; Kuh et al., 2005; Tinto, 2008). For example, Tinto points to the benefits afforded first-generation and low income college students from models such as learning communities where in and out-of-classroom activities are closely linked, different subject matter is connected, and student affairs and academic affairs work closely to develop the learning environment, This literature speaks to the importance of faculty and student affairs administrators to work across functional silos in higher education institutions in order to foster more engagement and improved learning among students, problematizing the differentiation that occurred through institutional unbundling of faculty roles. For example, for students interested in a medical career, discussions with an advisor in student or academic affairs will not be sufficient for students to understand this choice. They might build an understanding of course patterns needed and basic information about GPA. Yet, they also need to have a discussion with a faculty advisor who understands

more deeply what medical school is like and differences between varying medical schools. With the advising function being largely unbundled from the faculty role at many institutions, these important discussions often do not occur and create problems for students and their development and ultimate outcomes.

Proliferation of Outsourcing and For-Profit Providers

Another area of institutional unbundling is the outsourcing of goods and services to for-profit providers. Higher education institutions have been outsourcing many of their peripheral or non-core services in increasing numbers since the 1980s and 1990s (Moore, 2002), harkening to the initial arguments in the 1970s that institutions should unbundle their services (Wang, 1975). Milstone (2010) points to a Carnegie Commission on Higher Education admonition in the 1990s suggesting that institutions should take responsibility for their core functions of teaching, research, and learning and "divest themselves of their peripheral activities" (Milstone, para. 5). While most outsourcing in higher education is in non-academic areas such as food service, bookstores, housekeeping or janitorial services, and endowment funds (Holian & Ross, 2010; Johnsrud, 2000; Phipps & Merisotis, 2005), outsourcing functions related to academic areas, such as instruction (Bailey, Jacobs, & Jenkins, 2004; Russell, 2010), libraries (Atkinson, 1996), remedial education (Kaganoff, 1998), and technology services (Allen, Kern, & Mattison, 2002; Hamid & Suberamany, 2009), is a growing consideration for colleges and universities. Institutions are increasingly partnering with online education providers such as Coursera to administer distance education programs for their institutions, and scholars are increasingly viewing the proliferation of part-time contract faculty as outsourcing instruction (Bartem & Manning, 2001; Kirp, 2002).

There have been few studies that examine these new forms of institutional unbundling, and much of the literature pertaining to outsourcing has focused by-and-large on the outsourcing of non-academic services. This is problematic, because when most people consider outsourcing in higher education, they do not think of its impact on education because cost savings and budgetary constraints are their top motivations or goals for outsourcing (Gupta, Herath, & Mikouiza, 2005). Some argue for the benefits of outsourcing functions to outside providers due to their expertise in certain areas and the resources it frees up to allow institutions to focus on core functions (e.g., Moore, 2002), yet the lack of research on the effectiveness of outsourcing areas specifically related to academics (e.g., remediation, instruction) is potentially problematic because as the source of the services are farther from the core of institutions, the control over quality and effects on educational outcomes are farther from the control of institutions. For example, in an exploratory study of outsourcing instruction in community colleges, administrators responsible for managing contracts with providers identified several concerns, including concerns over less rigor and narrower foci in outsourced courses, resulting in a lower quality education for students in them (Bailey et al., 2004). Outsourcing suggests that as more stakeholders are responsible for different facets of student life in higher

education, even more fragmentation occurs in the student experience with less connections being drawn across these disparate functions. More research is needed to identify the effects and outcomes associated with outsourcing both non-academic and academically-related functions from institutions.

Neuroscience and Learning

The research differentiating in-class and out-of-class learning and the limited literature on outsourcing point to increased fragmentation of the student experience. The neuroscience literature related to learning suggests that fragmentation resulting from institutional unbundling could have detrimental effects on student learning and development in college (Keeling, 2009). As Fried (2012) states: "We may divide our institutions into academic affairs and student affairs, but students learn as whole human beings. What is needed in the twenty-first century is a new approach to learning in higher education that is grounded in the science of learning" (p. 8). She cites work back to the 1970s (e.g., Crookston, 1975) calling for integrating the learning environment, suggesting that critics of institutional unbundling have been calling for this integration for decades.

A key insight from the neuroscience literature is that learning changes the brain (Bransford, Brown, & Cooking, 2000; Keeling, Dickson, & Avery, 2011; Zull, 2002). As people learn, their brains are literally transformed and more connections are made across their neural networks (Zull). Students come to learning with preconceived notions of how the world works based on their existing neural networks, which influence how they approach new information (Bransford et al., 2000). Learners must be led to challenge their preconceived notions of how the world works in order to make new connections to advance their learning. From this perspective, in order for educators to effectively influence learning means making connections to what students know and their prior and current experiences beyond the classroom (Zull). Neuroscience research also suggests that knowledge and skills remain in our memory if they are repeatedly used in practice through assessments and assignments (Jernstedt, 2001; Keeling et al., 2011; Moy, O'Sullivan, Terlecki, & Jernstedt, 2014), which carries implications for instructional unbundling discussed below.

Insights from neuroscience research suggest potential problems with the fragmented learning environment that comes through institutional unbundling. Since learning is more likely to occur when students can make relevant connections to the material in their courses with their experiences in their lives and on campus, faculty who are more familiar with their students' backgrounds and experiences and have relationships with them are more likely to be able to make these kinds of linkages to ensure that learning is occurring. Institutional unbundling has placed faculty further from the lived experience of students, limiting their ability to get to know students more holistically. These implications also apply to instructional unbundling, as a faculty member who does not have the opportunity to get to know students in a MOOC or someone who designs a course without knowing

the background experience of students (in the virtual assembly line model) is less likely to be able to design a course to make necessary connections to students to further learning. Instructional unbundling of assessment from course design also carries liabilities for student learning as assessors may lack the knowledge of the lived experience of taking the course and the connections students are making. Advances in neuroscience research related to learning clearly suggest problems with the fragmented learning environment resulting from institutional and instructional unbundling, and while some advocate for fighting against this fragmentation (e.g., Fried, 2012; Keeling, 2004; Kezar & Lester, 2009; Kuh et al., 2005; Tinto, 2008), it is clearly continuing to occur.

The research to-date pertaining to institutional unbundling suggests that faculty play an influential role outside of the classroom despite structures that have distanced them from this purview, increasing fragmentation of services reduces collaboration and has a detrimental effect on student learning, outsourcing contributes to this fragmentation yet there is little research on its effects, and neuroscience offers some clues to why institutional (as well as instructional) unbundling may be leading to negative effects for students.

Professional Unbundling

Professional unbundling refers to the separation of professional responsibilities among faculty. Most empirical work that relates to unbundling pertains to professional unbundling and is focused on examining the teaching and research nexus. However, while this research informs our understanding of the phenomenon, it is by-and-large not framed as an examination of unbundling. Additional research has focused on the effects of one of the most salient forms of professional unbundling – the increasing use of non-tenure-track and part-time faculty appointments.

The Teaching/Research Nexus

Scholars have long examined whether teaching and research are compatible activities and the extent to which unbundling these roles might have a positive or negative impact on faculty performance and student learning (Braxton, 1996). Braxton notes that three positions exist: (1) Null—there is no relationship between teaching and research; (2) Conflict – research and teaching conflict when conjoined; and (3) Complementary – research can enhance teaching. Studies exist to support all three positions, but the majority of the evidence supports a null relationship (Braxton). Most reviews and meta-analyses have found that any relationship between teaching and research (in terms of being complementary activities that support one another) is either slight or non-existent (Braxton, 1996; Feldman, 1987; Linsky & Strauss, 1975; Neumann, 1996; Olsen & Simmons, 1996). Various studies have identified how the academic reward structure supports a focus on research over teaching and

service and therefore unbundling these roles would ensure that the distinctive roles are better met. For example, Massy and Zemsky (1994) describe the "academic ratchet" as the force that pushes faculty to focus more on their own disciplinary fields and away from the broader goals and curriculum of their institutions. This force tends to push faculty toward valuing disciplinary research and pursuit of external goals as opposed to focusing on the educational mission of the institution. The force of the academic ratchet is felt across the academy and is inherent in the values of faculty culture, as Fairweather (1993) discovered in his study of faculty composition; he found that faculty who focused more of their time on research were more lucratively compensated than their peers who focused more on teaching. In addition to the values he identified, Fairweather (2002) also showed how the compatibility of teaching and research varies by discipline and institutional type. He identified that there are some faculty for whom teaching and research have strong synergy and result in increased productivity in research output and quality teaching, but that this is for a small set of faculty – 22 % in four-year institutions. Fairweather summarized his findings this way: "In sum, simultaneously achieving high levels of productivity in teaching and research—the *complete faculty member*—is relatively rare" (p. 44).

Many studies have demonstrated that even though there are extreme pressures to conduct research and that research pressures have increased in the last 20 years, faculty continue to focus on teaching as they are just adding on additional time to conduct research work (Braxton, 1996; Schuster & Finkelstein, 2006). In an examination of national data, Schuster and Finkelstein demonstrate that faculty spend more hours on research, without compromising time on their teaching. And in their study of faculty time, Milem, Berger, and Dey (2000) found that incentives to pursue more research did not have an adverse effect on teaching and that faculty were exhibiting increased time spent on both teaching and research, while Tight (2010) found that faculty workloads have increased with additional administrative responsibilities in addition those of teaching and scholarship. Yet these studies of time might be deceptive in terms of the sense of priority and value given to teaching that was captured in Fairweather's (1993) work.

Other studies have sought to understand the issue of the compatibility of research and teaching by examining faculty work preferences. Ben-David (1977) and Perkins (1973) examined whether teaching and research have different aims and require different approaches, talents, and facilities. They argue that "in teaching, academics expend effort on knowledge which can no longer be investigated, compared with the effort in research which is expended on knowledge which cannot be taught yet, because it still needs investigation" (as cited in Neumann, 1996, p. 9). Studies have also shown an increasing focus on research among tenure-track faculty since the 1980s (Neumann), which is reinforced by recent national data (Schuster & Finkelstein, 2006). This trend further affects the outcomes for students, as research shows that the more faculty are drawn to research and other external endeavors, the more students are inhibited from engaging with them (Wilcox, Winn, & Fyvie-Gauld, 2005).

A last set of researchers argue that organizational and system structures can be set up to support the bundling (or unbundling) of teaching and research and other structures can work against these being successfully merged (Clark, 1995; Fairweather, 1996). These scholars feel the wrong focus has been placed on research and emphasize the need to look at rewards, role definition, and institutional structures and values to understand the ways these functions can be aligned or misaligned. They feel that asking the question about a general compatibility about these two areas is misguided. Braxton's (1996) work supports the notion of more complex or nuanced work on this question. He examines how institutional type is related to the teaching-research nexus, finding some evidence of institutional type playing a role. Faculty who are involved in research, for example, may be more likely to engage in the scholarship of teaching. He also considers that the complementary relationship between research and teaching may be the result of institutional culture rather than based on the way the roles are designed. One major area of research (see Baldwin & Chronister, 2001; Figlio, Schapiro, & Soter, 2013; Eagan & Jaeger, 2008) suggests Clark's (1995) hypothesis about institutional policies driving whether a model works or not may be accurate and an important area for future research. While this research is on whether institutional policies making teaching-only contingent faculty successful, it shows the clear role of policies within institutions rather than the generic models for faculty roles being the determinant. In summary, most research in this area points to the complexity of understanding the relationship between teaching and research and perhaps no inherent negative or positive impact.

Proliferation of Non-tenure-track Faculty

In recent years there has been a growing body of research on the unbundling of the faculty role into teaching-only, contingent positions. This research does not demonstrate an inherent flaw in a teaching-only model, but does show the problems of poor institutional policies to support unbundling of roles. Non-tenure-track teaching positions are designed poorly and missing many of the aspects that support tenure-track faculty. As examples, NTTF have little to no involvement in governance, curriculum planning, professional development, evaluation, or access to campus resources or secretarial support (Gehrke & Kezar, 2014; Kezar & Sam, 2010). Furthermore, faculty are typically not involved with curriculum design and not introduced to institutional goals and outcomes.

Recent research on NTTF has identified some consistent and concerning trends related to student outcomes that illustrate problems related to the professional unbundling of the faculty role. The negative outcomes range from lower graduation rates for student who take more courses with NTTF (Ehrenberg & Zhang, 2005; Jacoby, 2006); to students who take courses with adjuncts performing significantly worse in follow up courses compared to students that took courses with tenure-track faculty (Carrell & West, 2008); to lower transfer rates from two-year to four-year institutions from students who take more courses from adjuncts (Eagan & Jaeger,

2009; Jaeger & Eagan, 2011). In addition to outcomes like graduation, transfer, and future performance, studies of NTTF instructional practices suggest that part-time faculty use less active learning, less student-centered teaching approaches, service learning, educational innovations, and culturally-sensitive teaching approaches (Baldwin & Wawrzynski, 2011; Banachowski, 1996; Jacoby, 2006; Umbach, 2007). Most researchers emphasize that these trends in research reflect that campuses have not altered their policies and practices to support the new largely non-tenure track faculty and that the faculty has devolved over the years with little intentionality into how human resources are deployed on campus (Eagan & Jaeger, 2009; Ehrenberg & Zhang, 2005; Gehrke & Kezar, 2014; Jacoby, 2006; Jaeger & Eagan, 2011). This research suggests that as we continue to deprofessionalize the faculty and unbundle their role, there are negative outcomes for students and institutions.

Some argue that unbundling the teaching role allows instructors to concentrate on their teaching and develop real expertise on teaching in their field and with the type of students they serve (Baldwin & Chronister, 2001). One recent study of full-time NTTF at an institution where NTTF are provided better pay and support demonstrates that this model can be effective (Figlio et al., 2013). The study bolsters the point that well supported NTTF can lead to equivalent outcomes for students and the promise of full-time teaching only positions. Also, Eagan and Jaeger (2008) examined a subset of institutions within their study that found declined student outcomes for students who took course with NTTF. In a subset of institutions that provided better support for even part-time NTTF the outcomes for students were closer to those of students taking courses with tenure-track. Thus, empirical evidence is beginning to emerge that teaching only positions when provided with proper support can support student learning and outcomes.

Research to-date reinforces some clear trends: a lack of clear conflict between the teaching and research functions, minimal support for compatibility, time commitments being evenly spread to teaching and research, preferences for activity varying by institutional type, pressures at present to focus more on research, organizational policies and structures may shape whether research and teaching are compatible, and teaching only positions without altered policies have negative outcomes. Additionally researchers suggest that there is much greater need to examine these issues through more sophisticated research design, larger samples, better clarity of terms, and more systematic study of the question (Neumann, 1996).[5]

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[5]It is important to note that proponents of on-line education typically note only one side of the research picture in order to justify their argument. For example, Neely and Tucker (2010) note: "Research has suggested that there is often a negative correlation between faculty time spent on research and faculty time spent on teaching and that often instructors feel that one must be sacrificed for the other" (p. 2). Because studies have been mixed, without reviewing the entire body of research, it is possible to find studies and develop arguments in either direction.

Instructional Unbundling

Instructional unbundling refers to separating the different roles involved with teaching and instruction into course design, delivery, assessment, and advising. Institutional and professional unbundling have been occurring in higher education longer than instructional unbundling and thus have a deeper research base. A literature search for unbundling reveals that much of the dialogue revolves around instructional unbundling, yet this area is the least empirically grounded. We begin this section by briefly highlighting the literature on teaching assistants and peer teaching (the earliest instances of instructional unbundling) but utilize more substantial space to review the literature on unbundling instruction in online and distance education due to both its relevance in current discourse as well as to highlight the limited research base.

Unbundling Instruction Through Teaching Assistants

While much of the current literature addressing unbundling pertains to unbundling instruction in online and distance education, our historical review revealed that teaching unbundling began with the increasing use of graduate teaching assistants and peer teaching models. Despite the proliferation of graduate teaching assistants for teaching large lectures and smaller discussions, the literature examining the effects of these instructors on educational outcomes is scant. Much of this literature examines their experiences (e.g., Park, 2004; Shannon, Twale, & Moore, 1998) and issues related to training teaching assistants (e.g., Abbott, Wulff, & Szego, 1989; Boyle & Boice, 1998; Marincovich, Prostko, & Stout, 1998; Park, 2004). Studies that do examine teaching effectiveness use student evaluations to measure teaching effectiveness (e.g., Shannon et al., 1998), while studies that compare faculty to teaching assistants tend to focus on the similarities and differences in student approaches to evaluating their instruction (e.g., Nevill, Ware, & Smith, 1978) rather than their effectiveness compared to faculty instructors.

Peer teaching (e.g., students teaching each other) has also gained prominence in the literature, with scholars highlighting benefits that come to both the peer educators and the peer learners (Owen, 2011; Topping, 1996; Weyrich et al., 2008; Whitman, 1988), particularly in graduate or professional education (e.g., Campolo, Maritz, Thielman, & Packel, 2013; Lockspeiser, O'Sullivan, Teherani, & Muller, 2008). Specifically, peer educators tend to exhibit more mastery of the material and affective gains from getting to serve as mentors (Owen). Peer learners benefit from having instructors who teach to their level of comprehension (Whitman, 1988), and peer teaching influences skill development and knowledge acquisition (Owen). While the literature points to benefits of peer instruction, the research tends to be cross-sectional in nature, with few examining the long-term impacts of peer education on student outcomes for both peer educators and peer learners (Juedes, 2011). Given that the research on peer education in particular suggests potential

benefits for higher education, the relative lack of research on the effectiveness of graduate teaching assistants compared to faculty is concerning.

Unbundling Instruction in Online Education

Most of the recent dialogue in the literature on unbundling pertains to unbundling instruction for online education. In general, online education refers to either a portion or entire class taught through a web-based platform rather than in a physical classroom (Boettcher & Conrad, 1999; Boettcher, 2000). Classes that are solely online also fall under the description of online distance learning (Levy, 2003; Yick, Patrick, & Costin, 2005). Much of the more recent work regarding unbundling teaching focuses on hybrid or blended models, which combine face-to-face and online instruction (Bowen & Lack, 2012; Bowen et al., 2012; Yick et al., 2005).

Much of the literature on instructional unbundling is conceptual or descriptive. For example, scholars offer different ways to conceptualize unbundling in online education. In the face of improving technology, Paulson (2002) suggests a framework for classifying the degree of unbundling in instruction by splitting instructional activities into five distinct activities – designing, developing, delivering, mediating, and assessing. In traditional education, the faculty member is responsible for all five of these activities. With improving technology, these activities can be distributed in different ways among four types of instructional agents – faculty members, teaching professionals, technology experts, and external providers. The more distribution of instructional activities, the more unbundled the model. Smith (2008) offers a different framework identified through his research of faculty in online programs. His framework identifies three unbundled models: the craft model, the collegial model, and the virtual assembly line. The craft model most closely resembles the traditional faculty role in higher education of a single faculty member responsible for all aspects of the course. The collegial model involves the development and delivery of course material by a team of faculty members, representing a moderately unbundled faculty role. The virtual assembly line resembles a fully unbundled model of instruction in which different academic professionals are responsible for different aspects of online course delivery.

Much of the early literature pertaining to unbundling the faculty role for online education is descriptive, often focusing on considerations for institutions to take into account when developing their own online courses. These include issues related to infrastructure (Howell et al., 2003; Levy, 2003; McBurnie, 2001), costs (Boettcher, 2000; Howell et al., 2003), curriculum (Boettcher & Conrad, 1999; Levy, 2003), and technological needs (Boettcher, & Conrad, 1999; Howell et al., 2004); course design and the role of faculty are a central concern to these authors. For example, Howell and colleagues (2004) highlight seven strategies for enabling faculty success in distance education. Their strategies, such as providing faculty with more information about distance education and providing stronger incentives for participating in these courses, are predicated on the assumption that the unbundled faculty model is the only way forward for distance education. The descriptive literature often echoes

the assertions made by Howell et al. by suggesting that unbundling is a foregone conclusion in the future of higher education, particularly in distance education (Boettcher, 2000; Levy, 2003; McBurnie, 2001).

Studies of Cost-Effectiveness

Some scholars move beyond description of unbundling by expounding its positive outcomes, most notably reduced costs in providing education (e.g., Bowen, Chingos, Lack, & Nygren, 2012, 2014; Jewett, 2000; Neely & Tucker, 2010; Paulson, 2002; Twigg, 2003, 2004). Paulson (2002) reviews faculty models at traditional universities, Western Governor's University, and University of Phoenix and advocates for "unbundling and technology as cost-effective ways to enhance student learning productivity" (p. 137). Her review illustrates a variety of possible approaches to unbundling instruction, and while she admits that limited research is mixed on the cost-effectiveness of unbundling her final message is that unbundling holds the solution for increasing efficiency in student learning productivity. Others report that while start-up costs are high, increasing the number of students reached is much cheaper because distributed technology "eliminates the duplication of faculty effort involved in preparing and presenting materials for multiple classroom sections of the same course in a given term" (Jewett, 2000, p. 117). However, the research supporting these arguments is thin at best.

Some scholars have addressed the cost-effective arguments for unbundling through research, but caution is warranted when interpreting these findings. In their literature review, Bowen and Lack (2012) identify few rigorous efforts to research online education, no conclusive evidence of the cost-savings from online education, and little evidence that online education is more or less effective than traditional education. A particular issue in the cost-effectiveness dialogue of unbundling pertains to the inability to assess the true cost of instruction in higher education, leading most studies to be inconclusive:

> With the unbundled faculty model, new hierarchies are created within the university to support instructional activities. What does it cost to create a new department dedicated to curriculum development, academic advising, or instructional technology? Calculating the costs goes beyond allocating an instructional technologist's salary to each course supported. Administrative support, equipment, technology, training, and supervision must also be allocated to course activities to obtain the true instructional costs for an online course. Recruiting, hiring, and training activities proliferate with the unbundled faculty model. (Neely & Tucker, 2010, p. 3)

Beyond startup, the cost-savings of unbundling are also hard to pinpoint as administrative costs on campuses are rising due to other offices overseeing bureaucracy to conduct work unbundled from faculty roles (Leslie & Rhoades, 1995). Further, many study of costs are based on estimates rather than actual costs. For example, Boettcher (2000) estimates $600,000 for a fully web based course, rather than using actual costs to determine his assessment. In their studies of the effectiveness of hybrid online learning, Bowen and colleagues (2014) utilize simulations to point to cost-savings in the long-run when utilizing hybrid educational models.

Studies of Quality

In terms of quality of unbundling teaching in online education, studies of quality and impact are few and their results inconclusive. Bowen and Lack (2012) identify several problems with the research literature, which includes influential studies by the U.S. Department of Education (Means, Toyama, Murphy, Bakia, & Jones, 2009) and the National Center for Academic Transformation (Miller, 2010). The problems identified by Bowen and Lack (2012) include lack of controls in assessing quality of online models, few randomized control studies (and those that are utilize very small samples), and little consideration of the tradeoffs between outcomes and cost. Despite these criticisms, this research offers some of the first indicators that an unbundled hybrid model may lead to positive outcomes (Ehrenberg, 2010). In one of the only studies utilizing randomized trials with a large sample (605 study participants), Bowen and colleagues (2012, 2014) found that the impacts of the hybrid course were equivalent to the traditional classroom. Yet, their approach maintained many elements of traditional faculty role, but with an enhanced team to develop the on-line materials. In other words, to achieve equal outcomes they did not entirely unbundle the faculty role. However, their findings point to a small effect based of hybrid courses on course completion, with more students completing the hybrid courses than the control courses. These results suggest increased efficiency and may be considered a benefit to students over the long term. Studies on impact tend to use minimal unbundling to achieve positive outcomes, suggesting more unbundled roles may not work as well.[6]

Others have been more critical of the impact of unbundling on the academy. Some suggest that individuals without expertise are in charge of teaching or advising (e.g., peers or TA's) (MacFarlane, 2011). Others note the problem of fragmenting content expertise in design from delivery that occurs when faculty are facilitators of learning for subjects outside their expertise which happens in on-line models of instruction (Howell et al., 2004). Commentators have described the decline in the sense of community and the destruction of academe as a community and the degradation of important institutional goals such as research or community and public service (Slaughter & Rhoades, 2004). For-profit institutions that specifically use an unbundled faculty teaching role note that they do not have service or research as part of their mission, and they conceptualize the faculty member as a support person rather than a content expert because the content can be designed by a few specialists that are high cost and then delivery can be done at a much cheaper cost. Some have advocated that non-profit institutions should adopt these practices from for-profits (e.g., McCluskey & Winter, 2012), as studies of programs in for-profits, conducted

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[6]In addition to these studies, some researchers have examined unbundling instruction from a faculty perspective. Yick and colleagues (2005) found that faculty members in online programs view online teaching as less credible than in-person teaching, and Smith's (2008) study of unbundling instruction in community colleges identified how faculty members desire a rebundling of their roles in delivering online courses.

internally by these organizations and generally not available for public review, do demonstrate that student can effectively learn within this new model and approach to the faculty (University of Phoenix [UOP], 2011). However, independent studies of these models in peer-reviewed outlets are hard to find. While many are discussing the implications of unbundling teaching, few are empirically examining its effects.

Summary

This review reveals that while a discourse surrounding unbundling in higher education exists, very few studies directly examine the phenomenon and others only peripherally inform our understanding of it. Plater (2008) has noted that this relatively uncritical examination of unbundling through empirical research is mirrored in the practices of higher education institutions and administrators who have largely embraced unbundling without a true understanding of how it is impacting their operations and services. The fact that there is virtually no research specifically examining unbundling in higher education warrants further attention by higher education scholars who can inform the work of administrators and policy-makers. We now turn our attention to areas needing further inquiry in the final section. Future research summarizes most of our conclusions from this section on empirical research.

Future Directions for Research on Unbundling and Implications for Policy

It is clear that unbundling is occurring, yet we are largely unaware of the impacts it is having on higher education. Much of the recent scholarship examining unbundling makes a claim as to the benefits or drawbacks of such differentiation, yet very few of these claims are supported by empirical research. Some proponents are using selected studies to support their perspective that do not represent the full body of scholarship, suggesting the value of meta-analysis of areas of research related to unbundling as well. Based on this review, we propose several areas of inquiry for higher education researchers to pursue in order to more intentionally inform the discourse of unbundling among scholars, administrators, and practitioners.

Studies of Unbundling Focused on Clarity and Definition

In the section on empirical research, we noted that most studies are not specifically focused on unbundling of the faculty role, instead they are often about for-profit institutions, online learning, tensions between research and teaching, or considerations of the division between in and out-of-classroom learning. There are virtually

no studies that have actually examined the unbundling of the faculty role – whether it be professional unbundling, institutional unbundling, or instructional unbundling. Experiments at institutions such as Western Governors University have largely not been studied. Therefore, we have to infer probable impacts from studies of different phenomenon. The most important first direction is to actually have studies focused on unbundling. These studies will benefit from having clear definition about the difference between the three areas carefully delineated within this paper that have occurred continuously throughout history – institutional, professional, and instructional. We have the least data on the unbundling of instruction therefore it should be prioritized in the research. It is also the area where the current unbundling is most active.

Prevalence of Unbundling in Current Era

Empirical inquiry should examine the degree to which unbundling is currently occurring across different institutions and context in higher education (Smith, 2008). The few empirical inquiries examining unbundling reviewed above have been performed in very specific contexts. Literature that exists suggests that there are many variations in unbundling and we likely do not know all the various models that even exist. Basic descriptive research to establish trends in unbundling across institutional types and contexts will give scholars a starting point to establishing the relative ubiquity of this phenomenon in higher education and the extent to which models for faculty employment and course instruction are changing. Paulson (2002) suggested that unbundling is much more common in traditional institutions then we often acknowledge or consider. She calls for research that examines teaching assistants, post-docs, peer instructors, team teaching and collaborative models, and new models such as the National Center for Academic Transformation. Multivariate analyses of these trends can inform future research by establishing specific institutional and disciplinary characteristics that are more likely to predict unbundling of the faculty role. Potential research questions include:

To what extent have institutions nationally engaged in instructional unbundling? How do these patterns vary by institution type and sector?

What models of instructional unbundling are being utilized, and are certain models more prevalent among certain institutional types and sectors?

What percentage of students in higher education are exposed to different unbundled instructional models, and how does this vary across institutions and sectors?

Impact of Unbundling on Student Learning

Much of the literature that is critical of unbundling is focused on its impact on declining autonomy and the professional status of faculty members; very little

attention has been given to the impact of professional and instructional unbundling on student outcomes. If student learning is to remain one of the core missions of higher education, research should examine the extent to which unbundling impacts the student experience and student learning. One issue has been examined– the deprofessionalization of faculty into teaching-only positions. Various studies demonstrate a clear negative impact on student outcomes from not modifying the context to support the new unbundled role. While this trend was apparent in this area, it is important that studies examine other areas. One could examine the impact of unbundling on all areas (e.g., institutional, professional and instructional), but professional and instructional unbundling have received the least attention. Also, there are many different approaches to unbundling teaching and degrees of intentionality and support (e.g., colleges such as Rio Salado College provide significant support to students in their model of teaching unbundling). Comparing institutional unbundling with different levels of support to students and levels of collaboration/coordination when teaching is unbundled is important to understand the viability of such models. Potential research questions include:

How do interactions between students and faculty members vary depending on the degree of unbundling in courses?

Does engagement with multiple academic professionals have positive or adverse effects compared to interactions with single faculty members, and how do these effects vary for different groups of students?

What models of teaching unbundling exist and how do the different models impact student learning?

How do faculty members and teaching assistant compare with regards to teaching effectiveness?

If institutions prioritize meeting the demand of increasing enrollments in higher education through unbundling teaching, is there a tradeoff in learning and student outcomes and what are they?

What is the level of learning when peers provide assessment rather than faculty?

Does student learning vary depending on whether their faculty members conduct research or are involved in scholarship?

Some unbundling models use faculty that no longer have disciplinary expertise. Do student outcomes vary if a faculty member has disciplinary knowledge and affiliation? Comparing outcomes associated with different faculty expertise seems important moving forward.

Fragmentation and Unbundling

Another significant issue that appears to impact student learning is that the whole process of unbundling further fragments the learning environment and has the potential to negatively affect student learning. Research relating to institutional unbundling, specifically differentiating in-class from out-of-class learning and

relating to neuroscience of learning, suggests negative consequences for students who have less interaction with faculty beyond classes and may not be able to make connections across the institution among disparate services and functions. More research is needed to examine further fragmentation that results from professional and instructional unbundling. Further, any study of unbundling should try to identify and examine fissures that occur based on the specific model in question. Obviously models that entail more fragmentation of the teaching process have the propensity to open up deeper fissures in the learning process and negatively shape learning. Potential research questions include:

Under what conditions can teaching be unbundled and still maintain integration of learning for students?
What type of faculty role and characteristics of faculty facilitate integration of learning for students?
What roles and characteristics of faculty hinder integration of learning for students?

Impact on Faculty Scholarship, Governance, and the Academic Profession

In addition to how students experience unbundling in higher education, little attention is given to the potential effects unbundling has on knowledge development and dissemination in academic disciplines, one of the other central aims of the technical core. Instructional unbundling tends to rest the course design among education specialists and away from the disciplinary expertise of faculty members. Furthermore, the institutional unbundling of faculty involvement in governance and leadership has not been explored for the impact it may have on institutions in terms of their direction, values, decision-making, and other core functions of the institution. A few studies have suggested that faculty voice in governance is in decline, but there are only a handful of studies (Slaughter & Rhoades, 2004). Additionally, there is virtually no research on how all three of these levels of unbundling impact the academic profession and the desirability for people to have a career as a faculty number in higher education. As faculty members are increasingly not involved in research and governance, hallmarks of being a professional, will this degrade the profession leading to fewer bright people entering graduate education? Potential research questions include:

Does this approach to course design limit the ability of disciplines to communicate the most current knowledge to students?
Can course instructors who are not engaged in disciplinary research and knowledge formation remain current and communicate the most up-to-date approaches to disciplinary content?
How has professional unbundling in terms of lack of involvement in governance reshaped institutions' decision-making and values?

As graduate students become aware of changes in the Academy to the faculty role (e.g., few tenure-track jobs, little access to research and governance, unbundled teaching role), will this impact graduate enrollments and entry into the profession?

Impact on Educational Quality

A more summative question in looking across the issue of the impact on student outcomes, faculty scholarship/governance, and fragmentation of learning is the question of how unbundling is impacting the overall quality of education on college campuses. Several studies have implied that the educational quality might be compromised by institutional unbundling through outsourcing remedial education or on-line courses. Other studies have found that professional unbundling into non-tenure-track faculty roles without support has led to declined student outcomes. And both institutional and professional unbundling that removes faculty from key roles in knowledge development, advising and career support, and overall student development impacts educational quality. Most of the studies indicate a negative rather than a positive impact from unbundling that hampers the quality of education. In the remaining areas, we simply do not have research one way or another. We certainly need to engage in more studies that examine the issue of educational quality and how it may be compromised or enhanced by unbundling, and we also need studies that synthesize across these various areas to demonstrate over the long term how this may be impacting the quality of overall education delivered by the enterprise. There are compelling arguments made that faculty may not be experts in technology, instructional design, grading/assessment – elements that are important in today's environment to be successful faculty. Institutions that have created divisions to support instructional design, technology, and grading find that they can enhance educational quality by developing superior courses, uses of technology and assessments. Yet the data to support these innovations is mostly internal research at innovative institutions and not widely available or shared.

Comparisons of Various Instructional Models

What is clear from the descriptive data that does exist about unbundling is that there are many different models and that studies need to be conducted to examine and compare different models. Multiple descriptions of instructional unbundling do not agree on all the steps that lead to instruction – some include three different areas, others five, and yet others include eight to ten different steps in instruction. Models that are fragmented to more or less degree should be examined for effectiveness. Smith (2008) outlined various levels of unbundling in online learning from the craft, collegial, and virtual assembly line model. His study was one of the first to identify and designate these different levels of unbundling, and no studies have been

conducted looking at the impact on a variety of outcomes for these different types of unbundling. In fact, so much of the current research is just focused on documenting and describing these various emergent models so they can be studied. We do need to continue to have research that documents new models of unbundling, but even more so we need studies that examine the impacts of all of these emerging models. Potential research questions include:

How do student outcomes vary based on models of instructional unbundling?

How do various models of instructional unbundling contribute to cost savings for institutions? Which are more efficient?

Cost-Effectiveness and Quality of Institutional and Instructional Unbundling

The literature in support of both institutional unbundling via outsourcing and instructional unbundling in higher education points to the increased efficiency and cost savings of such differentiation. Many of the proponents of unbundling point to hypothetical scenarios of cost-savings to bolster their support (e.g., Jewett, 2000). As Neely and Tucker (2010) have pointed out, unpacking the true costs of course instruction in bundled and unbundled courses is difficult, and their research was inconclusive as to whether or not unbundling instruction leads to cost savings. The ITHAKA project (Bowen et al., 2012) also saw no cost savings in their unbundled faculty model. Bowen and Lack (2012) caution that research must move beyond cost savings in isolation and should consider educational effectiveness in conjunction with cost. Given the difficulty in assessing cost-savings, researchers should pay special attention to developing methods to truly delineate costs of instruction. Further, studies of cost savings should compare these to educational outcomes in order to compare the relative efficiency gains or losses to gains or losses in educational outcomes. Potential research questions include:

Which models or approaches result in cost savings?

What factors or conditions need to be in place to support cost savings when unbundling faculty roles?

How do student outcomes either gain or suffer when these cost-savings are realized?

As we mentioned above, little research has examined the effects of both instructional and non-instructional outsourcing on educational effectiveness (Gupta et al., 2005). While seeking cost-savings is the reason commonly given for outsourcing, higher education still remains an endeavor devoted to learning. If outsourcing is to continue and further fragment the student experience, research should be conducted to examine its effects on student outcomes. Potential research questions include:

How does outsourcing of services influence students' outcomes and their college experience? Is outsourcing of non-instructional services related to institutions focusing more on academic functions?

How does outsourcing instruction affect the student experience and outcomes?

Impact of Organizational Policies and Practices

Various studies suggest that professional and instructional unbundling is shaped by different campus cultures, institutional types, reward structures, and policies. It will be difficult to examine the impacts on student and institutional outcomes without examining some of these characteristics on campuses that can and likely to shape the efficacy of unbundling. There may be support systems and structures that can be put in place to better support unbundling. For example, Neely and Tucker (2010) note the importance of training and development for faculty in unbundled roles. However, they also note that in the pressure to cut costs needed for training and development is often not provided and this may significantly degrade the quality and effectiveness of an unbundled faculty role. Given we know that non-tenure-track faculty have not been provided support the last 30 years and this has significantly impacted student outcomes, it is likely that unbundling that is occurring for online learning will suffer from the same problems because institutions do not create the policies and practices to support the unbundled roles.

Research also indicated that organizational structures can be created that would better support any faculty role. Rather than research and teaching being inherently in conflict, organizational values that privilege research have often resulted in the conflict between teaching and research. Some institutions have created support for unbundled faculty roles. We need to better understand the organizational structures and cultures that can be created to support various configurations of faculty roles. We also need to better understand why these structures, policies and practices are not widespread. Potential research questions include:

To what extent are faculty and other educational administrators provided with policies and supports to ensure success of instructional unbundling?

What are the consequences for lack of support for these practitioners?

What are there models of best practice related to rethinking organizational structures and cultures to support faculty roles?

What prevents widespread use of organizational structures and cultures that support faculty in unbundled roles?

Future Research Informed by Theory

While the existing empirical research suggested most of the areas of future research, our review of theory and history also suggests some areas for future inquiry. Given certain groups have driven the shift in faculty roles, whether it be the faculty themselves, administrators, leaders advocating for new institutional types, or policymakers, it is important to understand what groups today are driving changes in the faculty role and what their underlying agendas are behind such changes. An understanding of the current agendas can help policymakers (and higher education stakeholders) in deciphering motives that support student learning and those that

serve other interests. History also suggests that critics voice their opposition when unbundling occurs (e.g., Boyer, 1990; Newman, 1852/1982), which has important and resounding lessons about the problems of unbundling the faculty role. Who are the current critics of unbundling and how can we synthesize their concerns and use them to guide future designs of faculty roles? Newman's and Boyer's concerns about faculty roles remain important even in today's context. We might also ask how we can bring in historical concerns about unbundling and use these ideas for helping to think about ideal faculty roles.

Professional theory would have us focus on and examine questions like, "What is central to the faculty role today?" and "What role definition would maximize the expertise of faculty and remove tasks that are less central?" Given the proliferation of different institutional types, the notion of maximizing the expertise of faculty may differ when the central role is defined as teaching versus supporting learning versus knowledge generator and researcher. But based on the notion of what the primary role of the faculty is, professional theory would focus on gleaning faculty members' expertise closest to that role definition and removing less central activities. It would seem that an exploration of this question through conceptual research would help us in better defining faculty roles; no such examination has occurred. Such logic has been used for some unbundling models such as Western Governors University (Paulson, 2002). They defined the central faculty role as mentoring and guiding learning, rather than content delivery, research, or technology, and therefore refocused the faculty role around mentoring and offloaded technology, assessment/grading, and instructional design.

In terms of contingency theory, there has been limited examination of all of the external pressures and factors that are impacting higher education and how they might reorient faculty roles. Given the many changes – technology, need to foster democratic citizenship, the increasingly diverse student body with greater needs for support, the emergence of multiple institutional types, the need to educate students for sustainability, broader definitions of education including competency-based education, metadata and predictive analytics, the push for assessment of learning, trends of internationalization and globalization, the need for greater collaboration across institutional types, greater knowledge about how students learn, importance of high-impact practices such as service learning and undergraduate mentoring and research, and the need for greater access at the same time as increased affordability – research should focus on the dynamics of these competing changes that influence changes to the faculty role. Conceptual and descriptive research on faculty roles tends to focus on isolated factors when creating faculty roles, such as technology or competency-based education. However, thoughtful scholarship in this area needs to explore the multiple areas of external contingencies in combination with research that supports how diverse students learn. External pressures and conditions are important to weigh when redesigning faculty roles and have historically helped to address limitations of faculty roles.

Academic capitalism can also help in framing future studies by helping to make visible the forces that are shaping faculty careers and how their roles are defined – particularly as they relate to unbundling. This has already occurred in

studies of deskilling that demonstrate the trend toward deprofessionalizing faculty work by excluding them from governance, taking away professional autonomy, and excluding research and scholarship from many faculty roles (Slaughter & Rhoades, 2004). It is important to continue this line of research that is quite nascent at this point in time to understand the overall impact on the profession from continued unbundling. We know almost nothing about how graduate students think about their future prospects as faculty roles continue to unbundle. We have no data on what graduate programs tell students about faculty roles and the changes that are currently occurring. We do not know how disciplinary societies are responding to unbundling of the faculty role. How is the rise in post-doc positions tied to the deprofessionalization of the faculty and the lack of tenure-track faculty roles? How are research universities contributing to the obfuscation of the changes in the job market by promoting postdocs? There are many important areas that need examination that relate to the future professoriate; the lens of academic capitalism can help researchers in defining questions.

Finally, future research could utilize other theories that we do not focus on. Habermas' (1984) theory of communicative action – a model of democratic engagement on complex issues that have competing and multiple societal interests – is a theory that could be applied to inform future studies on and dialogue about faculty roles. Habermas' focus is on how to make complex negotiations among groups that differ significantly in interests but aim toward using discussions, logic, and rationale to reach policy rather than power, influence, force, or normative pressures. Since faculty roles have typically been altered by influence and normative pressures, rather than open discussion, this provides an important approach to consider and frame such policy discussions. Additionally, political interest theories (Baldridge, 1971; Stone, 2002) could be brought into better explore how the multiple and competing interests in higher education have clashed and how they may be negotiated moving forward.

Implications for Policy

One of the most important recommendations to emerge from a review of the literature and research is that we need a policy mechanism to help define faculty roles that utilizes existing research and is based on intentional design rather than political whim or powerful interest groups. The history of redefinition of faculty roles suggests that clear and intentional design is often missing and it can result in problematic outcomes. The theories that document and help understand unbundling suggests that there has not been a vehicle to manage the differing external pressures, forces, and interests, and the enterprise would benefit from a policy structure that is put in place that can help to define faculty roles in the future. Such a body might look like certification or licensure for other professional groups such as doctors or lawyers. Habermas' (1984) theory of communicative action provides a perspective on how to create a vehicle for negotiating competing and multiple societal interests.

While it is more theoretical in nature, it can be used to develop guiding principles for an organization or structure aimed at best supporting a democratically devised notion of the faculty.

Another implication from this review of research and literature is the need for policy discourses that bring in multiple perspectives. The current environment is dominated by managerialism, which alters the faculty role in one direction without taking into account other interests or research. The dominance of managerialism also reinforces the need for a more neutral policy mechanism to help guide the future of faculty roles. A neutral organization on this topic will be difficult to identify as most groups represent either faculty or administrators or particular sectors. However, more umbrella organizations such as the Association for American Colleges and Universities that has represented both groups might be a group to lead such policy discourses, or The Carnegie Center for the Advancement of Teaching and Learning.

The third implication of the review of research is that we do have some research to guide the design of faculty roles for the future. Studies that demonstrate the problem of fragmentation of learning that results from institutional, professional, and instructional unbundling suggest the need for creating greater coordination and collaboration within institutions that unbundle faculty roles or serves as a caution from continued unbundling without institutional restructuring. For institutions that are unable to set up the coordination and infrastructure, unbundling should be executed with caution and with evaluation to demonstrate whether it is impacting learning. It also appears that teaching and research positions can be unbundled without impacting student learning. Most research has not identified anything inherently problematic about unbundling, but rather that institutions do not provide the infrastructure to connect activities once unbundling has occurred. Certainly exceptions exist like model institutions such as Rio Salado College where they built in an intensive infrastructure to facilitate collaboration within the institution. In addition, both Rio Salado and Western Governor's University were created as innovative colleges rather than moving from a college where faculty roles were created in one way and then moved into another mode of operation. The creation of new institutions based on particular design principles appears to be more effective then transforming existing institutions. While we clearly need more research, there is enough information to suggest that more intentional design in faculty roles is needed and evaluation of changes made is necessary. We also need some mechanism to help in defining faculty roles moving forward.

Issues Needing Further Discussion

In this paper, we examined institutional, professional, and instructional unbundling pertaining to the faculty role through historical, theoretical, and empirical perspectives. While we suggest future directions for research and policy, we are limited in

the confines of our paper from pursuing every avenue for consideration regarding unbundling the faculty role. We now highlight several issues for further discussion and exploration to build off of this review and analysis.

First, we suggested in our review of theory that utilizing individual theories does not provide the best approach to engaging in future research on this topic. The example we provided (e.g., Lee et al., 2005) points to the value of utilizing multiple, complementary theories when examining this phenomenon. While this approach allows for a more nuanced analysis of unbundling, future discourse should consider how theory integration can advance this dialogue even further. How may the theories we reviewed (professional, contingency, managerialism, and academic capitalism), along with others we mention (political interest, communicative action), be integrated to better inform future research and policy on unbundling? The potential for theory integration to examine the unbundling phenomenon should be further explored.

Our review of unbundling has not touched on one of the enterprises closely connected with the future of the academic profession – graduate education and doctoral-level work in particular. Doctoral education in the United States has remained by-and-large unchanged in its mission to educate scholars to work in the traditional professoriate (Flaherty, 2012), despite the fact that the current professoriate has not resembled the traditional vision for several decades. Unbundling of institutional services, professional roles, and instructional practices has created a landscape in higher education that does not seem to fit with the current approach to training PhD students, as the number of traditional jobs for which these students are trained are dwindling. While disciplinary associations and other stakeholders have noted the need to address these discrepancies (Flaherty), much more discussion and analysis is needed to effect change in graduate education to reflect the current and future landscape in higher education.

While we made recommendations for future research regarding the unbundling phenomenon, we did not address the fact that what constitutes the academic profession is becoming more difficult to define. For scholars of the academic profession, care must be taken for how they define their population and select their samples for research. The professoriate is now by-and-large part-time and off the tenure-track, and the advent of new positions related to instructional design, delivery, and assessment coupled with more diversity in institutional types point to continually increasing heterogeneity of the academic workforce. Scholars of the academic profession need more precision when approaching studies – more carefully defining what subsection of the professoriate they are studying. In addition, they should be more conscious to extend their study to multiple groups of faculty to make their findings relevant to faculty in their varying forms. Previous studies have tended to focus almost exclusively on tenure-track faculty, and we need more attention given to the multiple roles and functions. Future discussion should consider how samples for research may be identified and the extent to which both generalizability and nuance can be sought in research on the academic profession(s).

Conclusion

Unbundling has been occurring in U.S. higher education for centuries, yet few in higher education have acknowledged this pattern of differentiation, particularly in the current discourse of unbundling of instruction through distance and online education. In this paper, we contextualized unbundling within historical, theoretical, and empirical contexts in order to provide scholars, university leaders, faculty, disciplinary leaders, and policy makers with relevant frameworks for examining this phenomenon. We identified four eras of unbundling in American higher education and identified how there seemed to be no clear justification for unbundling the faculty role related to student outcomes. Rather, competing forces external to higher education institutions tend to be the driving factors. The theories we identified and reviewed suggest that competing interests are at play in unbundling the faculty role, and they also do not suggest a clear path forward for unbundling. The review of the literature pertaining to unbundling reveals a dearth of research focused on the phenomenon of unbundling, with especially scant empirical evidence to either support or critique instructional unbundling. It is no longer enough for higher education scholars to extol the virtues or pitfalls of such a transformation to the academic workforce. Rather, it is imperative that higher education scholars pursue research addressing the evolving nature of faculty work through unbundling in order to inform policy-makers and administrators, ensuring that unbundling and rebundling is undertaken with a sense of care and integrity in upholding the varying missions of higher education institutions.

As we conclude, we are drawn to reflect on Metzger's (1975) prediction cited at the beginning of our paper:

> It may be more realistic to assume that out of the sortings now taking place will emerge two very different entities: a relatively small profession centered in the nonunionized, moderately delocalized, mostly private, research-oriented universities and high grade colleges, and a much larger work force composed of persons called faculty members out of habit but who are in no significant way differentiated from other trained attendants in the teaching enterprise and barely distinguishable from the multitudes engaged in bureaucratized white-collar work – a lumpen professoriate, so to speak. And one may conjure up a future that lacks even this saving remnant: a time when the profession as we know it comes to be regarded by almost everyone as an anomaly, then as a constricting anachronism, and finally as a lifeless relic of a lost and dimly remembered world (p. 41).

Our analysis of the history, theory, and research related to unbundling the faculty role suggest that Metzger was prescient in describing the future of the academic profession to this point. We observe a bifurcated faculty profession which has evolved due to competing forces and seemingly independent of considerations for student learning and the broader mission of higher education. However, our commentary also suggests that his predictions need not be deterministic. The directions we set forth for research and policy provide a way forward to thoughtful deliberation and decision-making regarding the faculty role in higher education, and we envision a potential future in which the faculty role may be maintained as

a profession (although likely a more diverse and complex one) as well as intentionally designed to support student learning and the higher education enterprise as a whole.

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Chapter 4
Interest Groups and State Policy for Higher Education: New Conceptual Understandings and Future Research Directions

Erik C. Ness, David A. Tandberg, and Michael K. McLendon

Introduction

The past 25 years represent a period of widespread change in state policy for postsecondary education. The period has witnessed, for example, the rise of performance-accountability measures and various kinds of reforms in state governance of higher education; the implementation of various initiatives designed to increase educational attainment within the states; the adoption of new financing programs, including merit-aid, tuition-differential, prepaid-tuition, and college-saving programs; retrenchment by states in their funding effort for higher education; the advent of so-called "charter" or "enterprise" colleges; and, a host of other important changes in the state-campus relationship. So consequential a redirection in state policy for higher education are the changes that, a number of observers and analysts have characterized them as having heralded the advent of a "policy privatization" movement for higher education at the state level (McLendon & Hearn, 2007; Morphew & Eckel, 2009; Tandberg, 2010b).

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Many policy scholars have contended that the policy process has also become privatized (Ball, 2009) or "hollowed out" (Rhodes, 1997). That is, rather than government agencies providing public services or leading policy initiatives, non-governmental actors have increasingly been contracted to provide direct services (e.g., transportation, corrections) or technical assistance (e.g., consulting on policy solutions). Indeed, researchers have documented the rise of intermediary organizations—entities that serve as conduits or boundary-spanners between two principal actors, such as governments and education systems—that compete in the emerging quasi-markets for K-12 education policy (e.g., Lubienski, Scott, & DeBray, 2011). Recent reports have suggested that the "advocacy philanthropy" approach of national education foundations illustrates this trend of outsourcing state-level higher education public policymaking to non-governmental entities, or intermediary organizations (Lederman, 2012; Parry, Field, & Supiano, 2013). *The Chronicle of Higher Education*'s special report on "the Gates effect" outlined the footprint of the Bill and Melinda Gates Foundation, along with the Lumina Foundation and the Kresge Foundation, through funding hundreds of higher education projects some with grants directly to state agencies, but overwhelmingly to other non-profit organizations or consulting agencies that serve as another intermediary between state higher education systems or campuses.

As many educational researchers have contended, foundations serve as an example of interest groups that influence federal and state policy (Cibulka, 2001; Malen, 2001; Opfer, Young, & Fusarelli, 2008). This chapter discusses the role of actors that might also be considered intermediary organizations along with actors more commonly identified state higher education interest groups, such as campus and system lobbyists, faculty and student associations, and private college associations (Ferrin, 2003, 2005; Goodall, 1987; Tandberg, 2008, 2010a, 2010b). We base this inclusive approach on Thomas and Hrebenar's (1992) definition of interest groups as "any association of individuals, whether formally organized or not, that attempts to influence public policy" (p. 153, as cited in Opfer et al., 2008) and on Burstein's (1998) contention that what sociologists often refer to as social movement organizations or intermediaries are conceptually quite similar to what political scientists call interest groups. So, although we recognize that many of these intermediaries have broader agendas than influencing state higher education public policy, we include them in order account for the widest possible range of interests that seek to influence higher education policy in the states.

States' levels of engagement with interest groups have varied and few states have followed precisely the same policy trajectory, and there exists a great deal of variation from state-to-state in their postsecondary policy postures. An empirical literature recently has arisen attempting to explain policy outcomes for higher education in the 50 states. The studies have examined the policy influences of legislatures, bureaucracies, governors, and other institutional political actors, but relatively few research efforts have sought to account—conceptually or empirically—for the policy impacts of organized interest groups in the arena of state postsecondary education. Indeed, whereas, a solid base of literature has arisen around the topic of interest-group activity for higher education at the federal level (e.g., Cook, 1998;

Hannah, 1996; Mettler, 2014; Parsons, 1997), theory and research on interest groups and higher education at the state level remains piecemeal and scant. This essay takes a step in helping to remedy the gap.

Given the states substantial formal authority and funding of public higher education, increased attention to interest-group activity seems overdue. The current policy activity in the states related to increasing educational attainment, for instance, may be influenced by internal state actors, such as campus and system interests, and by actors outside the state, such as foundations, think tanks, or other policy organizations. Examining the strategies of these actors and their effects on policy outcomes stands to enhance the conceptual understanding of the policy process and inform the actors who seek to influence state-level policy.

In the pages that follow, we outline an agenda for research that aims to deepen conceptual understanding of the relationship between interest groups and state level higher education policy and to chart future research directions. We organize the chapter around three foci: (1) a review of extant research on state-level interest group activity in the higher education arena; (2) development of a conceptual framework grounded in the literatures of political science and higher education on interest groups and public policymaking with which to guide future inquiry; and, (3) a discussion of possible future research directions in the area, including a number of rarely-used data sources that could enrich the future study of interest groups and higher education in the U.S. states.

Higher Education Interest Group Activity in the States

The literature base on state interest-group activity in higher education is thin. This is somewhat surprising condition in light of the attention researchers have paid both to federal-level higher education lobbying (e.g., Cook, 1998; Hannah, 1996; Parsons, 1997) and, very recently, to the relationship between state political characteristics and certain state policy outcomes for higher education (e.g., Doyle, 2006; Lowry, 2001; McLendon, Hearn, & Deaton, 2006). Standing as a noteworthy exception to this pattern of neglect is the recent work of Tandberg (2010a, 2010b), who has incorporated several interest group measures into his modeling of the factors that influence state spending on higher education. Tandberg found that the interest-group factors related to the number of higher education interests within a state and the relative density of higher education interests compared to all state interest groups within a state have a significant effect on state higher education spending. For the large part, however, most of the extant works on interest groups and state policy for higher education have focused only descriptively on the informal relationships between campus and system leaders and state elected officials. The case study literature suggests that interest groups and lobbying sometimes seem to matter in the formation of public policy for higher education, but few comprehensive or detailed accounts exist. The state higher education interest group literature is also nearly void of attention to national or regional intermediaries that act as interest groups with the

states. The remainder of this section reviews the three primary veins of research on state interest-group activity for higher education—descriptive studies, case studies, and panel data analyses. The insights generated from these works undergird our conceptual framework, to follow.

State-level lobbying for higher education often is considered to be a sub-set of broader interactions between the postsecondary sector and state government (Hines, 1997, 1998; McGuinness, 2005). In many descriptive accounts, interest group activity is characterized as consisting of the interactions undertaken by state agency officials, governing board leaders, and campus presidents in directly lobbying governors and legislators, typically through private conversations and legislative testimony. Murray (1976) provided one of the first schema of the higher education lobby, but his conceptualization focused primarily on such interactions on the federal landscape. In his brief examination of similar activities in the states, Murray focused on the tendency for governing, coordinating, and planning entities in states each to pursue their own vested interests. At the time, many of these "1202" statewide planning commissions were just being founded and Murray argues that "they too might be classified as an internal state-level lobby" (p. 88). Murray also contended that the land grant or flagship institutions can exert especially powerful influences over individual elected officials and that higher education systems within a state often act as lobbies. Murray identified certain national associations, such as Education Commission of the States and National Governors Association, as interest groups lobbying for increased federal support and helping to shape state policy through reports and the issuing of policy recommendations. Goodall's edited volume, (1987) *When Colleges Lobby States,* provided an even more thorough description of interest group activity, with emphasis on such topics as state constitutions, executive leadership, legislative control, budgets, and planning. In an even more recent effort, Scott Ferrin examined the characteristics of campus-based lobbyists (2003) and the tasks and strategies that they employ (2005). While Ferrin's study mainly is on that of lobbying activities at the U.S. federal level, he also examined campus lobbying efforts in the states. Overall, this vein of literature has tended to describe lobbying activities and identify key state-level actors in the policy or the budgetary processes for higher education. There have been few efforts to systematically collect and analyze data for the purpose of examining, testing, elaborating or revising theories, or even hypotheses, on the possible impacts of lobbyists and lobbying in state policy formation for higher education.

The case study literature has taken some noteworthy steps in these directions. For example, deGive and Olswang (1999) developed a conceptual model of the policymaking process drawn from organizational behavior, political systems theory, and K-12 education policy to the state of Washington's decision to create a branch-campus system. Ultimately, the analysts highlight the importance in that particular episode of coalition-building among campus and system leaders, legislators, state agency officials, and community groups.

Utilizing a similar interview-based case study approach, Tandberg (2006) analyzed interest group alliances in a large mid-Atlantic state. He found that

environmental factors such as legal autonomy for public universities, the distribution of political power within the legislature (i.e., the relative power of house and senate committees to party leaders in both houses), and characteristics of individual campuses influence the extent to which institutions form interest group alliances.

In contrast with the above case studies' attention to broader influences on higher education interests, Blackwell and Cistone (1999) surveyed policy actors to examine the relative influence of various interest groups within the Florida higher education sector. They found, perhaps unsurprisingly, that legislators and state higher education leaders had much more influence than faculty and student groups and education research associations.

Other case studies examining the political dynamics of state higher education policymaking make reference to, and have implications for, interest group activity, yet lobbying rarely is the primary interest. Some examples include: the "manifest and latent tensions" associated with North Carolina's policy limiting out-of-state enrollment (Frost, Hearn, & Marine, 1997); the limited role of campus lobbyists in policy formation for postsecondary education in Pennsylvania (Sabloff, 1997); the role of interest groups in competing advocacy coalitions during the adoption of in-state tuition benefits for undocumented students in Texas (Dougherty, Nienhusser, & Vega, 2010) and of performance funding policy in eight states (Dougherty, Natow, Bork, Jones, & Vega, 2013); and the influence of Tennessee's private college lobby, New Mexico's casino gaming industry, and West Virginia's video-poker machine owners in Ness's (2010a) comparative case studies of the factors influencing the determination of merit-scholarship eligibility criteria in those three states.

A spate of recent panel-data analyses on the policy impacts of interest group activities has provided largely consistent findings. Building on Lowry's (2001) empirical examination of political effects on higher education budgets, Tandberg (2008, 2010a, 2010b) created a set of indicators to test empirically interest group activity in all 50 states and found that the ratio of higher education interest groups to all state-level interest groups has a positive effect on higher education appropriations, while the total number of non-higher education interest groups has a negative effect on higher education appropriations. Tandberg's findings suggest that states with a larger higher education lobby, relative to all interest groups in the state, are associated with increased spending on higher education. Using a slightly different measure that counted the number of higher-education interest groups in a given state, McLendon, Hearn, and Mokher (2009) also found a positive effect of interest groups on higher education appropriations, consistent with Tandberg's later findings. More recently, Tandberg and Ness (2011) found that interest group activity is associated with increased state spending on capital projects. Indeed, they find in another study that the effect of interest groups on capital spending is even more pronounced than that on general fund appropriations (Ness & Tandberg, 2013). This suggests that interest-activity varies depending on the policy issue and that some policies may be more conducive to lobbying efforts.

Based on these empirical studies, some additional conceptual perspectives on state interest-group activity for higher education seem to be emerging. In the section

that follows, we draw on these studies related to state higher education lobbying in our presenting of a conceptual framework built upon political science research on state-level interest group activity.

New Conceptual Understandings of State Interest Group Activity in Higher Education

Our proposed conceptual framework provides a scaffold for future study of the influence of state interest-group activity on state policy outcomes for postsecondary education. Our primary intent is to provide a skeletal framework identifying the key elements related to state-level higher education interest-group activity. We also intend for this framework to be further refined so that it might guide robust predictive models and empirical efforts, including the direct and indirect effects of interest groups on higher education policy outcomes. In this section, we first provide an overview of the evolving theoretical approaches to understanding interest groups activity. Then, after a summary of the framework, we discuss the framework's core elements by reviewing the interest group studies that undergird each element and by suggesting potential applications to policy.

The theoretical underpinnings of our proposed conceptual framework include decades of scholarly attention to the role of interest groups in public policymaking. As Mawhinney (2001) outlines, early work emphasized the pluralist approach based on the idea that an effective democracy depended on active and balanced group activity. Truman (1951) argued that interest groups provided links between the public and government and that as one group gained more power another group would mobilize to restore equilibrium both in interest group activity and in the resulting public policies. Critics of the pluralist tradition argued the approach took insufficiently into account the structural advantages of the nation's economic and political elite, privileges that skewed policy outcomes in favor of establishment interests. As Schattschneider (1960) famously wrote, "the flaw in pluralist heaven is that heavenly chorus sings with a strong upper-class accent" (p. 53). Bachrach and Baratz (1962) argued further that the power of elite interests is under-estimated because of their unobserved influence, or "second face of power," in controlling the policy agenda so that some issues (e.g., wealth redistribution) in fact do not reach decision status.

Mancur Olson (1965), in his classic *The Logic of Collective Action*, levied a similar criticism arguing that groups do not have an equal chance to participate in pressure politics. His work focused primarily on the dynamics of mobilizing interest groups, such as the "free-rider" problem that limits interest group participation because actors can benefit from groups even without formal membership. For example, Olson points out that both members and non-members benefit from the actions of environmental interest groups in the form of cleaner air and water. As a result, Olson identified the key strategy of groups offering selective benefits

only to members, such as the insurance discounts and publication subscriptions offered by professional associations. Malen (2001) contended that Olson's attention to interest group construction had the effect of narrowing scholarly inquiry to issues primarily related to internal functions of interest groups, rather than interest groups' effect on policy outcomes. By contrast, the neo-pluralist approach returned with the emergence of the iron triangle approach, which linked interest groups with bureaucratic agencies and legislative members to form sub-governments that seek to control policy activity within the sector (McFarland, 1987). Heclo (1978) extended this approach by arguing that issue networks, which include fluid and open participation of a wide range of actors, more appropriately reflected interest group activity and policy outcomes. In contrast to all of the above approaches, which are set at the federal-level, Lowery and Gray (1993, 1996) examined interest-group activity at the state-level and found that state economic and demographic characteristics affect the diversity of the interest group system and their ultimate influence on public policy. They also found interest group participation to be fluid with groups dropping in and out of lobbying activity. In constructing the conceptual framework depicted in Fig. 4.1, we build upon these theoretical approaches to interest group activity and also incorporate empirical and descriptive findings of higher education and policy studies.

The conceptual framework includes three layers each of which affects policy outcomes or, output, for higher education in the states. The outer layer of our framework represents those political, social, economic, and demographic conditions of a state that influence the state's overall interest group ecology and its higher education interest group landscape. State population, the diversity of population, political party control, gross state product, and other characteristics play an important role in framing states' interest group activity. The middle layer represents the state's interest group ecology or the broader array of organized interests beyond higher education. States vary in the scope and influence of interest group activity with ranging from New York with more than 3,000 registered lobbyists to Alaska and
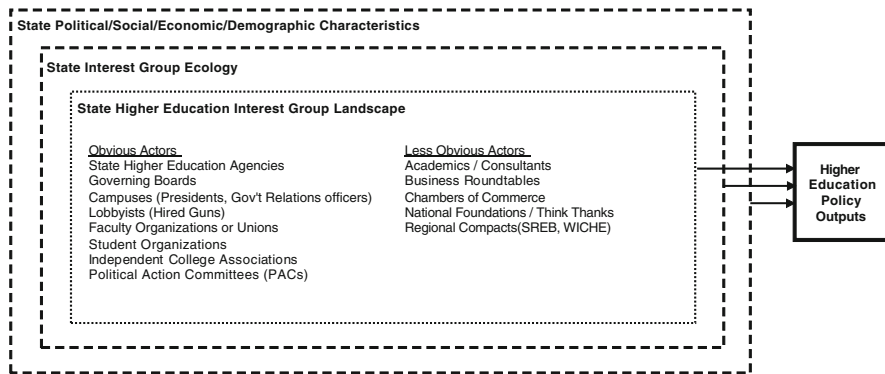
Fig. 4.1 Conceptual framework of state-level interest group activity for higher education

Hawaii with fewer than 300 (Nownes & Newmark, 2013). The overall state interest group ecology influences the higher education lobby in a number of important respects, such as helping determine the availability of financial resources available to organizations and setting the norms or, the "rules of the game," for lobbyists. The innermost layer includes the landscape of higher education interest groups. This layer represents both the multiple interest group actors and the lobbying tactics and strategies they employ. We identify a broad range of obvious actors, such as campus and system lobbyists, and less obvious actors, such as regional and national policy organizations and foundations. Although, the precise array of actors on each state's interest-group landscape for higher education is unique, it is possible to identify patterns. These three layers – individually and collectively – can influence state policy for higher education. In the following sections, we further discuss key elements of each layer of the conceptual framework and their potential effects on higher education policy outcomes.

State Political, Social, Economic, and Demographic Characteristics

The outer dashed-line box, *state political/social/economic/demographic character-istics*, portrays some of the kinds of contextual factors that may influence interest group activity and, ultimately, policy outputs. The pluralist and iron triangle interest group theories suggest that dynamics related to political power and structure influence interest group activity. For instance, critics of the pluralist approach (e.g., Bachrach & Baratz, 1962) contend that socioeconomic and political elite are more strongly represented and thereby exert more influence on policy outcomes. Hence, the extent of states' social inequalities stands to influence the interest group activity nested within this layer and the higher education policy outcomes.

The conceptual relevance of state context also emerged from earlier work examining the policy process related to higher education performance (Perna & Finney, 2014), higher education governance reform (McLendon, 2003a), and merit aid eligibility criteria determination (Ness, 2010a). McLendon and Hearn (2007) outline a framework for studying and incorporating political indicators in comparative-state study of higher education policy. They recommend the following prospective influences: higher education demography (e.g., enrollment trends, percent of population of college age), socioeconomic climates (e.g., educational attainment rates, state GDP), political culture and ideology, legislative organization and membership, gubernatorial influence, and party strength and control of government branches.

Many of these characteristics could mitigate or amplify the policy impacts of interest groups. A considerable volume of research in political science indicates that governors and legislative leaders can, and often do, trump the influence of organized interests (Gray & Lowery, 1996; Wiggins & Browne, 1982; Wiggins, Hamm, & Bell, 1992). For example, strong formal (that is, constitutional) powers

of the governor may lessen the influence of organized interests. In another example that connects this outer layer to the middle layer, a recent examination connects the pronounced growth of public sector lobbying from 1997 to 2007 to states' economic decline and a shift to Republican Party control (Lowery, Grady, Cluverius, & Harden, 2013).

Relevant state demographic characteristics could conceivably include elements of the population that might bring pressure to bear on elective official, even if the influence channels would seem weak or indirect or, the precise means of mobilization unclear. For instance, in their event history analysis of state consideration of legislative proposals between 1999 and 2007 extending in-state college tuition benefits to undocumented residents, McLendon, Mokher, and Flores (2011) found significantly positive effects for the percentage of state's population that is foreign born and for the percentage of a state's legislature that is female. The authors, however, did not find any statistically significant results for the percentage of state legislators that are Latino.

State Interest Group Ecology

With regard to the *interest group ecology*—the density and diversity of interest groups in a particular state—the middle layer of the conceptual framework situates higher education interest group activity within the state's broader interest group activity. Virginia Gray and David Lowery (1988, 1993a, 1993b, 1996, 2001) established the ecology metaphor to explain the state interest group environment and the "niches" that develop within states. They contend that environmental forces such as stability, energy (i.e., the resources available to particular interest groups, such as constituent interest; government goods, services, money, policies; and other items interest groups might value), and area (as measured, for instance, by size of state government and number of constituents interested in a particular issue) most influence the composition and profile of interest populations (Gray & Lowery, 1996, 2001; Lowery & Gray, 1993). With regard to our conceptual framing of higher education interest group activity within the broader state interest group ecology, Gray and Lowery offer two areas of conceptual relevance for the higher education niche: (1) interest groups are bound either by sector (e.g., postsecondary education) or by issue (e.g., college affordability), and (2) interest groups are influenced by the ecology of interest groups both within their niche (i.e., campuses, governance agency, other higher education organizations) and within the broader state interest group community (i.e., K-12 education, transportation, health care, corrections, etc.). Their findings (Gray & Lowery, 1996, 2001) suggest that the environment, or ecology, of interest communities tends to be constraining and it limits their size, makeup, and potential impact on governmental actions and outputs. Indeed, as Tandberg's (2006) case study suggests campus-level lobbyists rely on strategic alliances within the higher education niche, especially to compete with other state-

level organized interests. Similar to Hojnacki's (1997, 1998) findings, however, campus-based lobbyists also compete within their niche on certain issues. Indeed, Hojnakci's (1997) examination of "interest groups' decisions to join alliances or work alone" finds that interest groups work alone to compete within their sector when interests are narrow, yet tend to join sector-level alliances when groups perceive opposition from other interest groups.

In addition to these studies of interest group ecology, Ronald Hrebenar and Clive Thomas (1982, 1987, 1990, 1997, 2007; Thomas & Hrebenar, 1999, 2004) have served as the most consistent source of information about state-level interest group influence. Thomas and Hrebenar, who built foundationally on Morehouse's (1981) earliest ranking systems for the 50 states, developed, and periodically updated over the past 20 years, state rankings of interest group influences. Hrebenar and Thomas differentiate between three core concepts. First, *single group power* refers simply to the ability of a group to achieve its policy goals as it defines them. Second, *overall interest group power* refers to the most effective or influential interest groups in a state over a specified period of time. Third, *group system power* refers to the strength of interest groups as a whole within a state relative to other political actors or organizations (Thomas & Hrebenar, 1999, pp. 131). The second measure of overall interest group power, which seems to align most closely to the middle layer of our framework representing the state's interest group ecology, arrays states along a continuum ranging from systems in which interest groups as a whole are the overwhelming influence on policymaking – so-called interest group "dominant" states – to ones in which interest groups are consistently weaker than other political actors – interest group "subordinate" states. Their latest classification lists five states as dominant, 25 states as dominant/complementary, 16 as complementary, four as complementary/subordinate, and none as subordinate. Hrebenar and Thomas noted that the general trend since 1989 has been toward stronger interest group systems, albeit not dominant ones.

In making determinations about single-group influence, Hrebenar and Thomas relied mainly on the perceived influence of these sectors by experts in the field. As of 2008, the most-influential interests across states were, in descending order of influence, general business organizations, school teachers' organizations, utility companies, lawyers, and hospital associations. Occupying the fourteenth position were colleges and universities (Nownes, Thomas, & Hrebenar, 2008). These rankings include three categories: most effective, second level of effectiveness, and less/not effective. Observers in only 14 states ranked colleges and universities as one of the most effective interests, while an equal number of respondents ranked them as falling into the second level of effectiveness; just over half of the observers ranked colleges and universities in their states as less or not effective. Thomas and Hrebenar (2004) noted, however, that, dating from their earliest survey, in 1985 to their most recent one, in 2002, the only interest to make major gains was universities, which moved up five places. This seems to be one indication that universities are taking a more active role than before, relative to other sectors of state interest groups, in lobbying state policymakers.

With respect to the impact of the *state interest group ecology* on higher education policy outputs, the relationships have been explored directly only in two studies, and both found empirical evidence supporting the effect of interests groups on state appropriations to higher education (Tandberg, 2010a, 2010b). Both studies found that increased spending on higher education to be associated with a higher ratio of higher education interest groups to all interest groups in a state.

Higher Education Interest Group Landscape

We conceptualize the *higher education interest group landscape* (inner box) as the central consideration of our framework and as being shaped by state characteristics and interest group ecology represented by the outer layers. This inner box captures both the key actors, or "cast of characters" (Malen, 2001), and the lobbying tactics and strategies that they employ.

We first discuss the types of higher education interest groups that operate within a state and how they operate; specifically, what is known about the nature, size, resources, activities, and interactions of the state higher education lobby. The descriptive-oriented studies on state-level higher education interest groups reviewed earlier inform our understanding of this inner box.

The two lists within the inner box that is portrayed in Fig. 4.1 serve as the loose higher education equivalents to Malen's (2001) "cast of characters" categories for the K-12 education interest group landscape. Malen essentially distinguishes two groups of policy actors: (1) Obvious actors, including those commonly identified in previous studies of higher education interest groups (e.g., state agencies, campus leaders) and actors that represent formal lobbies (e.g., PACs, faculty unions, student organizations), and (2) Less-obvious actors, including national and regional foundations and policy organizations (e.g., Lumina Foundation, National Center for Higher Education Management Systems, Southern Regional Education Board) and non-higher education organizations, such as business and economic development organizations, that may influence postsecondary education policy. The interest group literature (e.g., Browne, 1985; Nownes & Freeman, 1998; Rosenthal, 1993) suggests variation among both the categories of interest groups actors and the influence of these actors also varies across states.

The obvious actors, for example, vary by state with respect to number and type of institutions and statewide governance arrangements. With regard to the organization and oversight of state systems of higher education, states generally conform to three "governance models"—governing, coordinating, or planning agencies. Despite the general convergence around these three governance arrangements, a given state's specific higher-education ecology – the precise mix in the state of public and private institutions, 2-year and 4-year colleges, and regional and research universities – does vary quite a lot. The number of campuses (both public and private) in a given state would likely influence the landscape of interest-group activity for higher education in that state. Put simply, states with many campuses inherently have many more

interest group advocates. And, in states with a large number of private colleges the higher education interest groups stand to have greater influence collectively and separately because many more legislators would have colleges within their districts. Moreover, McLendon, Mokher, and Doyle (2009) found that certain characteristics of the states' political systems, including whether a campus is located near a state capitol, can result in higher levels of appropriations for universities. This finding suggests that the geographic distribution of campuses across a state may influence higher education interest group activity by facilitating access to key policymakers.

Although the extant literature (e.g., Ferrin, 2003; Goodall, 1987; Hines, 1997) on state higher education interest groups emphasizes campuses and boards, the obvious-actors list also includes formal organized interests influence on higher education public policy. In some states, higher education advocates (either explicitly linked with campuses or not) have formed political action committees (PACs) to lobby for preferred policies primarily through campaign contributions to legislative leaders. For example, during the 2005 policy debate about establishing an education lottery in North Carolina, former UNC system presidents William (Bill) Friday and C.D. Spangler immersed themselves in the political fray by establishing and leading a high-profile PAC in opposition to a state-run lottery (Ness & Mistretta, 2009).

Groups representing the organized interests of faculty would include the American Association of University Professors (AAUP) and, in states with collective bargaining agreements, state-affiliates of the American Federation of Teachers (AFT) or National Education Association (NEA), for example. These national actors are distinct from state actors, such as campus and system lobbyists, in that AAUP or NEA are also situated within a national context that affects their broader policy interest and may also influence their lobbying approach within the states. Nonetheless, when these national associations operate within a state, they are also influenced by the state's political, economic, and social characteristics and by the state's interest group ecology. Similar to these national organized interests, Tankersley-Bankhead (2009) notes the existence of a large number and a broad range of organized student associations (e.g., Associated Students of the University of Missouri), which in many states seem to enjoy a perception on the part of legislators as having real influence, at least with respect to student-aid policy and other issues of general concern to students.

The less-obvious actors or "anonymous leaders," as Glenny (1972) phrased it more than 40 years ago, represent entities which, although traditionally less powerful than the obvious ones, seem today to be growing in influence. These less-obvious actors, which include foundations, policy institutes, think tanks, consultants, academics, and business representatives, have been more commonly referred to as intermediary organizations, but as Malen (2001) contends for the K-12 education sector, these entities should also be seen as interest groups. This more inclusive approach is consistent with Heclo's (1978) issue networks that include interests well beyond the obvious actors, such as those that make up the iron triangle.

Murray (1976) and Ness (2010b) identified the influence of so-called intermediary organizations, such as national or regional policy organizations, on state

higher education policy. The regional "compacts," such as the Western Interstate Commission on Higher Education (WICHE) and the Southern Regional Education Board (SREB), serve as sources for data and policy analysis and for direct, across-state consultation among higher education leaders and elected officials. National policy organizations, most notably the now-disbanded National Center for Public Policy and Higher Education (NCPPHE), the National Center for Higher Education Management Systems (NCHEMS), and comparatively newer organizations like Complete College America (CCA), have served increasingly similar functions with a robust portfolio of policy reports (e.g., *Measuring Up*) and data clearinghouse (e.g., www.higheredinfo.org). The influence of these intermediaries, however, surely varies by state, depending on the policy needs of a given state, the networks with campus and system leaders, and the associations' history of interactions and successes (or failures) in a state. Similar to actors such as AAUP, ATF, and NEA, these national intermediary organizations are, as their name implies, boundary-crossing organizations as they are trying to influence state policy nationally and their organizational homes are not within an individual state. Therefore, they come from outside but work within multiple states individually and have to deal with the specific context within each of those states simultaneously.

National foundations also serve as less-obvious actors. Just as Malen (2001) characterized the strong influence of the Carnegie and Ford foundations on K-12 education, the Gates and Lumina Foundations are playing an increasingly significant role in state higher education policy (Parry et al., 2013). Scott Thomas, drawing on his advocacy philanthropy study with Cassie Hall, commented on the direct role of the Gates Foundation creating intermediary organizations to carry out their policy initiatives and stated, "It's an intrusion into the public sphere more directly that has not been seen before. They're jumping into the policy process itself. That's an interesting position, for a nonprofit to be involved in things that look a lot like lobbying" (Pullman, 2013).

Higher education researchers are beginning to examine the influence of these less-obvious actors. For instance, Kevin Dougherty and colleagues' (2014) study of the "political origins of performance funding 2.0," as compared to the genesis of a milder form of performance funding, illustrates a much more pronounced role of intermediaries in the recent performance funding adoptions. In a comparative case study that draws on rich documentary data and interviews with more than 50 policy actors in three states, Dougherty and his co-authors find that the Lumina and Gates Foundations along with policy organizations such as NCHEMS, Complete College America, and HCM Strategists played a significant role in gaining support for the new funding model and in providing technical assistance on the performance funding measures. The report corroborates the advocacy philanthropy approach and shows how these three states benefit from legitimizing and capacity-building resources provided by national policy organizations at the expense of the Gates and Lumina Foundations. This finding is important for our conceptual framework of interest group activity because of the substantial influence of the resources provided by these less-obvious actors to some states. We expect, however, that the influence

of these actors will vary among states because not all states receive such funding and technical assistance from these intermediaries.

Think tanks serve as another type of less-obvious actor within the higher education interest group landscape. Studies of national-level think tanks find that these organizations have become increasingly ideological in orientation and that policymakers perceive conservative-leaning think tanks as more influential (Abelson, 2009; Rich, 2004). Education researchers have identified the politicization of charter school research along ideological lines (Henig, 2008) and the lack of credible, non-partisan research among the coalitions of national and local intermediaries (DeBray, Scott, Lubienski, & Jabbar, 2014). Similarly, Anderson and Donchik (2014) examine the influence of the American Legislative Exchange Council (ALEC), a national think tank that promotes free market and limited government principles to state legislators, on state-level education policy. Through an analysis of 54 model education bills, they find that ALEC promotes policies related to privatizing public services and weakening teachers unions and tenure. Anderson and Donchik also reveal the ALEC's role in privatizing the policy process through its production of model legislation, its networking activities with state legislators, and its approach to operate "under the radar." In part due to the rising scrutiny on ALEC (e.g., Scola, 2012), Ness and Gándara (2014) take an inventory of higher education policy activity among state-level ideological think tanks. Their examination identifies 59 conservative think tanks and 40 progressive think tanks operating and finds that conservative think tanks are more tightly connected to national policy networks, including ALEC. They also find that think tank activity is most active on issues related to state funding, costs and affordability, and efficiency and productivity. Taken together, these studies suggest that the influence of ideologically-oriented think tanks is rising and should be included among the less obvious actors.

The business community represents another key actor in the state higher education interest group landscape. The Dougherty et al. (2014) study mentioned above also finds evidence of support for performance-based funding from business interests in the three states. The authors observed the strongest support from the business community in Indiana where the State Chamber of Commerce provided legislative testimony and distributed materials in support of performance funding to its members. The Chamber of Commerce was also a co-recipient with the Indiana Commission for Higher Education of a substantial grant from the Lumina Foundation. In the other two states, Dougherty et al. also found support from business roundtables, but they were not nearly as active as the Indiana business community. In another comparative case study, this one analyzing undocumented students policies in Arizona and Texas, Dougherty and colleagues (2010) found muted, but important, support from the Texas business community in favor of in-state tuition benefits for undocumented students. Interview respondents indicated that the business community serves as the most influential interest group and thereby perceived even their quiet support to be essential to the policy. Lane (2008) found evidence that the North Dakota Higher Education Roundtable, membership of which includes more than 20 legislators and 40 additional members from government, education, and the private sector, has wielded tremendous influence

on postsecondary education policy within that state, especially due to the economic development concerns of the business community.

This grouping of less obvious actors might also include other established interests such as the state-level organizations affiliated with national associations such as the National Association of Independent Colleges and Universities (NAICU) representing private colleges and the National Association of State Financial Aid Administrators (NASFAA) and other similar professional associations representing specific higher education interests or functional roles of employees. Essentially, these would include the state-level counterparts to the "other higher education associations" that Cook (1998) outlines in her map of the higher education community (p. 65).

Having identified the central policy actors, we draw on the broader research literature on interest group activity in discussing the lobbying strategies and tactics that these actors might employ. Political scientists have long been interested in mapping the contours and the activities of interest groups in many different social and public policy sectors. In general, these studies describe what lobbyists do and how they do it (Rosenthal, 1993). For example, Browne (1985), writing nearly 30 years ago, found that the behaviors and styles of interest groups across a range of sectors vary depending on the institutional and cultural characteristics of the states. For example, Browne distinguished between the highly institutionalized sub-government approach in Michigan, which led to a policymaker partner role, and the highly competitive interest group environment in New Jersey, which led to an opposition role pitting interests against policymaker preferences. Despite these kinds of differences, Browne found that (1) most groups rely on similar lobbying techniques, (2) very few groups or lobbyists specialize in lobbying a specific branch of state government, and (3) interest groups are less active than is commonly thought on most of the bills that come before state legislatures.

Although the influence of the higher education lobby appears to be growing, the extent of the variation among states in the lobbying techniques, strategies, and tactics of higher education interest groups remains unclear. While the inner box in Fig. 4.1 is primarily concerned with identifying the state-level interest group actors in higher education, this conceptual space also includes the lobbying tactics and strategies about which the field knows very little. For example, in many larger states, such as California, interest groups rely on both direct lobbying of elected officials and grassroots initiatives to rally public support behind an interest. By contrast, in less-populated states, such as West Virginia, lobbying efforts are more likely limited to direct appeals to legislators and the governor's office (Nownes et al., 2008).

In the next section, we discuss possible research questions based on the conceptual scaffolding that we outline in this framework of state interest group activity for higher education.

These questions point the field in a number of different, noteworthy directions. Of course, the extent to which the field can effectively pursue these questions rests on the availability of certain measures and data sources. We discuss prospective research questions that might be answered by existing measures and data sources and propose additional data sources that might power future work in this area.

Recommendations for the Study of State Interest-Group Activity in Higher Education

Researchers have been slow to investigate interest group influences on the formation of state policy for higher education. This lack of attention stems from at least two sources. First, the analysis of interest group influence itself is a challenging undertaking, as generations of political scientists have observed. Interest group scholars have long wrestled with at least three nettlesome challenges. First, it is often difficult to compare interest groups across states or even within states over time. Second, it is hard to measure what individual interests want, a necessary requirement for determining interest group success. Finally, it is sometimes challenging to discern whether the original goals of the group in fact were achieved. What is more, with a few notable exceptions (Brace, 1988; Gray & Lowery, 1988, 1993a, 1993b; Nownes & Freeman, 1998), studies rarely have examined lobbying techniques and tactics across different group types, sectors, or industries, and thus the empirical connections between group behaviors and state policy outcomes are difficult to discern.

These limitations notwithstanding, the literature on interest groups in the U.S. states both generates important questions that could readily be applied and studied in policy arena of higher education and presents numerous data sources and measures that higher education researchers might pursue in undertaking the systematic examination of these questions. The methodological approaches and data sources to which we point in this chapter have the potential to significantly improve the state of research into higher education interest groups at the level of the U.S. states. These potential improvements would not be possible were it not for noteworthy, research advances recently made in the area of higher education policy studies. Over the past decade, higher education scholars have turned increasingly to the fields of political science, public policy, and economics in the development of large-scale panel data sets with which to incorporate indicators of state political, economic, demographic, and higher education conditions of all 50 states over periods of time dating as far back as the 1960s (e.g., Doyle, 2006; Tandberg, 2010a, 2010b; McLendon, Hearn et al., 2009). The political indicators include such variables as partisan legislative strength, party control of the governor and legislature, electoral competition, political ideology, gubernatorial powers, term limitations, professionalism of the legislature, and other variables, along with many attendant variations thereof. Some of these data sets individually now contain many hundreds of thousands of data elements, an important resource for researchers that simply did not exist a decade ago. In addition to these political variables, we see the availability of a wealth of data that could be mined and a variety of methodological approaches that could be productively deployed in pursuit of the kinds of questions that we have laid out in this manuscript. Most of the data-collection activities that we have identified require considerable labor, yet as more researchers undertake investigations into higher education interest groups, these data efforts could build accumulatively through the careful documentation, validation, and increasing reliance upon datasets made publicly accessible.

But not only do the newer sources of data exist. Researchers, again borrowing from the fields of political science, economics, and quantitative sociology, have deployed such statistical techniques as fixed effects models, event history analysis, and even more recently Bayesian statistics, in studying a wide range of phenomena that involve sate governmental behavior in the policy arena of higher education (e.g., Archibald & Feldman, 2006; Doyle, 2006; Lacy, 2011). Through use of these techniques and data, studies have yielded, for the first time, strong empirical evidence of the important role that state political characteristics can play in shaping public policy outcomes for higher education.

Analytic advances in the study of higher education also include the use of social network analysis to show connections among actors in a particular field. Biancani and McFarland (2013) recent chapter urges higher education researchers to employ this emerging technique to larger networks beyond the faculty- and student-centric studies that comprise the current activity. One recent example of this broader approach includes an examination of the "interlocks" between elite private universities and the corporate sector and the degree to which they have tightened over time (Slaughter, Thomas, Johnson, & Barringer, 2014). To examine the network activity in state higher education policy environments, higher education researchers could draw upon studies at the K-12 education sector level that have used social network analysis to examine the connections between practitioners, policymakers, research communities, and policy organizations (Au & Ferrare, 2014; Daly, 2010; Song & Miskel, 2005). These studies have identified the most influential policy actors, the density of connections among key policy actors and organizations, and the flow of information through these networks.

The recent analytical developments include notable advances in the use of qualitative research methods, as well. Researchers using qualitative methods have made several distinct contributions. First, they have introduced more systematically than before certain theoretical frameworks and constructs that have helped sharpen the focus of researchers on several key relationships attendant to the formation of public policy for higher education. Examples of these contributions include conceptual work in the areas of policy entrepreneurship, policy innovation and diffusion, principal-agent theory, institutional rationale choice, the "Garbage Can Model" (multiple streams), advocacy coalition, and punctuated equilibrium, among others (e.g., Bastedo, 2005; Dougherty et al., 2010, 2013, 2014; Lane, 2007; McLendon, 2003a; McLendon, Cohen-Vogel, & Wachen, in press; McLendon & Hearn, 2003; Ness, 2010a; Ness & Mistretta, 2009; Tandberg, 2006). Likewise, the qualitative methods that researchers, such as those cited above, have utilized have improved alongside the elaboration of their theoretical scaffolding. Such improvements include the development of more sophisticated analytic designs overall, more reliance on comparative case studies, better analytic frameworks for use in interpreting interview and archival data, and more robust fieldwork.

It is in the context of these broader developments that the more systematically-empirical study of interest groups and state policy outcomes may proceed. Future studies may capitalize on the availability of more and better data, the array of more

sophisticated research techniques, and the existence of a more finely-honed set of conceptualizations than before with which to frame investigation of interest group activity in higher education.

In the remainder of the section, we outline considerations for future research that is organized around three questions. In each section, we elucidate how these questions emerge from consideration of different aspects of our conceptual framework and propose relevant data sources and methodological analytic approaches for further examination. Far from being an exhaustive elaboration, our discussion merely illustrates some of the possible, yet largely-uncharted, terrain that is interest-group activity and policy impacts in higher education.

1. *To what extent do the lobbying tactics, strategies, motivations, and methods practiced by higher education interest groups vary by state? And, how do policymakers perceive the effectiveness of groups and strategies that advocate on behalf of higher education?*

These questions align with the inner box of our conceptual framework, which identifies a host of higher education actors and organizations, and with how all three layers of the framework impact higher education policy outcomes. Although the higher education interest-group landscape remains vital to understanding the policy effects of state-level interest group activity, the field currently knows quite little about the array of lobbying organizations in higher education, or about their strategies or tactics. Appendix lists several potential research questions that might help populate and clarify the inner box of our framework. For example, one question emphasizes the impact of campus lobbying strategies by either a full-time university lobbyist (e.g., director of governmental affairs) or a "hired gun" from a professional lobbying firm.

These questions warrant examination, taking the form of two prospective lines of research: surveys of policymakers and comparative-case study designs. Our discussion for this first set of research questions address needed avenues of development in research design and data collection.

As previously noted, there is some precedent to be found in the literature for both approaches. Ferrin (2003, 2005) and Blackwell and Cistone (1999) collected survey data to identify strategies and tactics in determining interest group effectiveness, as measured by perceptions of the influence of the lobby among state policy actors. Cases of state higher education policy decisions (e.g., deGive & Olswang, 1999; Ness & Mistretta, 2009; Sabloff, 1997; Tandberg, 2006) also offer some insights into higher education's lobbying tactics and its perceived effectiveness, although they tend to be limited to single-case designs or pay limited attention to lobbying activity as opposed to other elements of the policymaking process. What is needed is a research effort that would make more robust use of surveys and multiple-case state-study designs through which to examine the strategies, tactics, motivations, methods, and perceived effectiveness of higher education lobbyists as compared with that of lobbyists in other policy arenas. Such lines of research would enhance the field's understanding of higher education interest group activity and detect behaviors that could be tested empirically.

Among the important design considerations in initiating this line of work is the issue of sampling strategy. For instance, while case study approaches should aim to identify the unique state context, future survey research should aim for generalizability through the use both of a systematic and stratified sampling approach for states and respondents. The comparative case study should be designed to maximize trustworthiness and provide comparisons across states on those important, conceptually derived dimensions of interest pertaining to lobbying. The remainder of our discussion in this section follows three questions in designing the proposed lines of research: Who should be the respondents? In which states? And what should be asked?

Identifying the target survey and interview respondents of interest group leaders in higher education is not a straightforward undertaking. In state settings where a single association or group designated to represent higher education does not exist, the lobby's efforts at collective representation may be diluted by other organizations seeking to have their voices heard. These studies of lobbyists and interest group officials could focus on at least four relevant sets of obvious actors drawn from the inner layer of our conceptual framework: the State Higher Education Executive Officer (SHEEO) and/or members of the statewide board charged with executing the board's government relations activity; campus-based government relations officers; heads of state private college associations and/or the groups' government relations officers; and, lobbyists legally registered as representing higher education institutions or interests. Notably one finds potential for overlap among several of these categories, for example between registered lobbyists and the government relations officers of statewide boards for higher education. Disentangling, state-by-state, any such overlap is an important precursor step toward specifying the population of interest. In addition to these obvious actors, researchers might also target less obvious actors representing national foundations, think tanks, or policy organizations known to be active within a state. Including more than one set of actors could provide helpful comparative information about the behaviors of lobbyists and the perceptions of policymakers about the lobbyists do and how effective they are in doing it. Data on the individuals holding these positions can be obtained from several publicly available sources, including state elections offices, ethics commissions, secretaries of state, and McGuinness' (1997) widely cited field guide on state governance structures.[1]

State elected officials can be an especially valuable source of information, particularly when attempting to measure the perceived effectiveness of the higher education lobby. Such sources might include governors and their education policy advisors, as well as other senior policy advisors. State legislative leadership, notably the chairs and members of education and higher education committees and their aides, also stand as prospectively useful sources of information about lobby effectiveness. In particular, the chairs and the membership overall of appropriations

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[1]McGuinness's 2011 version of his categorization of state higher education governance structures can be found here: http://www.ecs.org/html/educationIssues/Governance/GovPSDB_intro.asp

and finance ('ways and means') committees are valuable sources, because of the crucial roles these legislators often play in state budget decisions. Likewise, legislative aides who are attached either to individual legislators or to education or finance committees could be an invaluable source of information. In light of the important roles that many of these actors play, sampling efforts should include a broader array of elected officials than has commonly been the case. Case study research clearly would benefit also from more purposeful selection of interview respondents and use of archival materials through which the researcher can identify officials' positions or their bill sponsorships

The question of *which states* should be included in a survey or in a field study examination of interest group activity for higher education often is more complex. Because gathering data from state and institutional lobbyists and governmental relations officers in all 50 states would be prohibitively expensive, both surveys and comparative case studies of interest group activity likely will include a purposive sampling of states (Babbie, 1990; Nardi, 2003; Yin, 2003). In addition to multiple respondents at many thousands of institutions nationally, ideally one would survey the heads of state associations, government relations officers at statewide governing boards, and private college organizations. By tailoring the study to a single type of postsecondary institution or to only one of the above-named categories of respondents (e.g., private college associations) one could narrow the number of potential respondents, thereby rendering more feasible a survey of all 50 states. But the trade-offs are noteworthy: fewer respondents or classes of respondents in each state would diminish the range of views and the robustness of the data and of the analysis. The choice of such a sample should be driven by design considerations, as well as conceptual ones.

We first draw a needed distinction between two primary design strategies for purposive sampling of case study research at the state level: the *most-similar systems design* and the *most-different systems design* (King, Keohane, & Verba, 1994). The logic of sample selection in the most-similar systems design turns on the researcher's desire to control as many confounding influences as possible in order to isolate the effect of a single explanatory variable. The design employs a "matching logic" whereby the researcher selects two cases that are alike in as many respects as possible, except for the key explanatory variable.

By contrast, the most-different systems design incorporates a variety of institutional settings in order to identify a range in data patterns. Many classic field studies of legislators (e.g., Jewell, 1982), as well as some more recent studies of state lobbying (Nownes & Freeman, 1998), have deployed the most-different systems design. Given the dearth of research on state higher education interest group activity, the most-different systems design may hold the greatest benefit for near-term development of the research base. Although this approach may make it difficult to understand what explains the differences in outcomes, it would provide for a richer understanding of state context given the variability in most-different states.

The selection of states for a most-different systems survey design should be driven conceptually. Much of the interest group literature suggests that the

effectiveness of a given interest group tends to be linked with several other characteristics of a state's political system, including the overall strength of political parties (i.e., generally, an inverse relationship with interest group strength); electoral competition (i.e., higher levels of competition can produce policy uncertainty, which in turn may privilege some groups over others); legislative professionalism (i.e., greater capacity by legislatures tends to diminish the influence of groups); and, partisanship (i.e., the two major parties tend favor different interests and groups in the political process) (Haider-Markel & Meier, 1996; Wiggins & Browne, 1982; Wiggins et al., 1992). Sometimes researchers have hypothesized that state political culture (i.e., traditional, moralistic, individualistic, or combinations thereof) and the overall strength of a state's interest group system (i.e., dominant or complementary) may influence a particular group's effectiveness (Elazar, 1984; Thomas & Hrebenar, 2004). Thus, numerous across-state studies (e.g., Nownes & Freeman, 1998) relying on surveys as a major source of data include in their samples states that vary on three or more of these core conceptual dimensions. For multi-case study designs, state selection will likely be driven by differences on at least several such key dimensions.

Another important consideration in designing future research around interest groups and higher education of course involves content – what should be asked? Within the larger corpus of interest group research, standardized surveys and interviews predominate as strategies for data collection. Obviously, the range of potential questions that surveys or interviews might contain is quite wide. In a study on the relationship between group behavior and state policy outcomes for higher education (e.g., bill passage, appropriations decisions, or a funding earmark), respondents might be asked about the organization's purposes and goals, staffing, how the organization is financed, and other such information. Respondents could be asked also about their group's position on a particular bill, or a provision thereof. They might be asked about the amount of time their group had engaged in various kinds of lobbying activities and techniques. Likewise, surveys and interviews of state policymakers might examine the extent to which variation exists in actors' perceptions of the effectiveness of higher education lobbying entities overall or, their influence on certain bills or policy outcomes, in particular. The same approaches could be used to examine the organizations' perceptions of their own effectiveness. Survey questions built around these topics could take the form of open-ended items or Likert scale. As well, many extant studies contain instruments that higher education researchers could easily adapt for their own purposes, such as the ones that Boehmke (2005), Nownes and Freeman (1998), Schlozman and Tierney (1983), and Wiggins and Browne (1982) have utilized.

Although our discussion has paid explicit attention to the impacts of lobbying on higher education policy outcomes per se, the research strategies and data that we have identified could well deepen understanding of the interest-group landscape for higher education, overall. Consequently, this undertaking ideally would result in the elaboration of existing conceptual frameworks – even our own. Indeed, given the underdeveloped nature of this area of study, well-crafted descriptive studies that could lead to a deepened understanding of the activities, strategies, norms, and effectiveness of higher-education lobbyists could certainly serve as an important

building block in the construction of a systematic literature on interests groups in higher education.

2. *What impact does the density and diversity of a state's interest group environment have on the state's higher education lobby?*

This second question primarily relates to the middle box of the "state interest group ecology" component of our framework and by extension how this ecology may shape the higher education interest group landscape (inner layer of the framework). By understanding better how state higher education interest group activity operates within this ecology, researchers and policymakers may be able to determine the most effective strategies for these environments. Efforts to understand better interest group density and diversity will benefit from recent developments in the measurement of higher education interest group behavior. Before outlining one noteworthy advance in the research literature development – that of Tandberg's (2010a, 2010b) development of several newer interest-group measures – we briefly review the few number of conventional measures that researchers have used.

The three measures and rankings developed by Hrebenar and Thomas (1982, 1987, 1990, 1997, 2007) remain widely used. S*ingle group power* refers simply to the ability of a group to achieve its policy goals as it defines them. *Overall interest group power* refers to the most effective or influential interest groups in a state over a specified period of time. *Group system power* refers to the strength of interest groups as a whole within a state relative to other political actors or organizations (1999, pp. 131). Although the Hrebenar-Thomas rankings provide researchers a widely-used measure of higher education's relative influence in the states over a period of roughly 20 years, the measure has a number of serious limitations. First, a single individual in each state typically has been responsible for making determinations about the groups' influence, raising questions about the reliability of the observations upon which the rankings rest. Second, because it is not clear the criteria that respondents may have used in assessing the influence of interest groups in their states, threats to content validity exist as well. Third, for researchers who may be interested in using the rankings to conduct longitudinal analysis of one form or another, the 7-year spans of time between individual administrations of the surveys present researchers with an indicator that is more cross-sectional than time-varying in nature. Overall, while the Hrebenar-Thomas rankings permit some comparability across states in the interest group influence of higher education, the data are noisy and the measures limited in several important respects.

The primary researchers in the area of state interest group density and diversity are Gray and Lowery (1996, 2001; Lowery & Gray, 1993). Since the mid-1970s they have been collecting lobbyist registration information from all 50 states (when available). While each state has their own laws regulating lobbying and lobbyist registration, each requires that a public record be kept that documents who each lobbyist is and who they represent. Before on-line records and databases this meant analyzing hardcopy forms they received via mail. Gray and Lowery would first enter the raw information into a database paying particular attention to each lobbyist's

client as their primary area of interest has been the numbers of organized interests registered to lobby state legislatures. They note historically that, often, lobbying organizations are not groups with individual members. Rather, they are associations with organizations as members or institutions such as corporations, universities, and hospitals. For their analyses they group the organized interests into broader categories (also referred to as sectors or guilds) such as for-profit and non-profit or into slight more narrow categories as construction, manufacturing, agriculture or education, welfare, environmental, and local government.

From their data, scholars (e.g., Tandberg, 2010a, 2010b) have been able to produce a total count of organized interests, relative density measures, and diversity measures. These data have allowed for the development of predictive models meant to explain the density and diversity of state organized interests and also models that assess the impact of state interest group density and diversity on a number state finance, policy, and political outcomes. Their database is a goldmine of interest group data and information. The relatively recent development of online lobbyist registration databases have allowed Gray and Lowery to continue to update their database allowing for continued research in this area (e.g., Lewis, Schneider, & Jacoby, 2013; Lowery et al., 2013; Schneider & Jacoby, 2006).

While the Gray and Lowery data are useful in extending our understanding of interest group activity in the U.S. states, higher education researchers may find that they need to engage in their own data collection efforts as Gray and Lowery have grouped higher education interest groups into a broader education category that includes K-12 interest groups. Thus, higher education researchers who wish to identify higher education interest groups will need to visit individual state websites or to utilize websites such as The National Institute of Money in Politics (http://followthemoney.org/) which collect these data at the individual lobbyist/client level for each state. They have these data over multiple years, although the number of years varies by state. As with most of the data available from the state websites, these data are not grouped into categories and merely provide the client names. Therefore, the researcher must carefully examine the categories in order to draw out the higher education specific clients. Researchers may want to group the data into the following categories: Public institutions, public institution associations, private institutions, private institution associations, for-profit institutions, and for-profit associations. Of course researchers may come up with additional groupings drawn from the obvious and less-obvious actors identified in the inner layer of our framework. Beyond the formation of higher education interest group categories, researchers will need to decide whether they are interested in collecting data on the number of interest groups (clients) or if they are interested in the total number of lobbyists representing the interest groups. Often a single interest group will have multiple lobbyists. While Gray and Lowery and also Tandberg have focused on interest groups, one might also be interested in how total representation (the number of lobbyists) might impact policy and finance outcomes. The data provided on state websites and from www.followthemoney.org allows for the collection of both types of data.

These kinds of data could prove useful to researchers in several ways. First, one could examine, within individual systems or that of an entire state, trends over time in lobbying expenditures by colleges and universities (one will often have to go to specific state websites for expenditure data). These data could be employed to test hypotheses related to research questions identified in Appendix and others, such as: (1) which institutions or types of institutions engage most heavily in various forms of lobbying, (2) the growth of lobbying by non-profit colleges, and (3) the determinants of lobbying expenditures on certain issues and bills. Additionally, in an effort to examine the interest group ecology of states, as outlined in the middle layer of our proposed conceptual framework, researchers could compare these data against data on the lobbying expenditures by other groups or industries. This would enable one to examine higher education's "political muscle" relative to its competitors, and how over time that muscle had grown or atrophied in a given state. Furthermore, with the longitudinal data, one could compare lobbying expenditures by colleges and universities in different states with roughly similar lobby registration laws. In "holding constant" the state regulatory climate governing lobbying expenditures, one could test hypotheses about the factors that contribute to the institutionalization of the higher education lobby in different locales. To what extent, for example, does growth in spending result from the competitive pressures of the state interest group landscape, or from changing economic conditions, or from turnover in party control of state political office? With respect to measuring policy impacts, one could use the data on lobbying expenditures by higher education interests to examine the relationship between spending on certain issues or bills and the final disposition of those issues or bills in their legislatures (e.g., passed out of committee, passed a floor vote, gained enactment).

Tandberg recently undertook an effort that built even more overtly on the extant interest-group literature in his development of several measures of lobbying influence for higher education at the state level. Tandberg (2008, 2010a, 2010b) borrowed from the widely-used "relative density" indicator of Gray and Lowery (1996), and leveraged data provided by David Lowery and available in public archives to construct two promising measures of interest group activity in higher education. The first is an *interest group density measure*. The interest group density measure is constructed by taking the total number of registered interest groups minus the total number of registered higher education interest groups. The second measure, a *higher education interest group ratio*, indicates the strength of the higher education lobby relative to the larger interest group universe in a given state. This variable is constructed by dividing the total number of state higher education institutions and registered non-college or -university higher education interest groups by the total number of interest groups in the state, minus any registered colleges and universities or other registered higher education interests groups that may lobby for higher education. Tandberg deployed these measures in several longitudinal studies of state funding for higher education (2008, 2010a, 2010b). He found that both the density measure and the strength of the higher education lobby relative to the rest of the state interest group lobby (i.e., the larger the relative number of organizations lobbying for higher education) are important

causal factors in determining the relative amount of state expenditures devoted to higher education. There are several advantages of the Tandberg indicators, principally the availability of measures with predictive capability derived from a set of empirically-grounded measures in the parent interest group literature. Having found evidence that higher education interest group activity positively affects higher education appropriations and capital spending, future research might incorporate these measures into the adoption of various higher education policy innovations that have recently been examined by higher education researchers (e.g., Doyle, 2006; McLendon et al., 2006).

These measures could also be enhanced from sources similar to those utilized by Tandberg (2008, 2010a, 2010b), including the online archives of state government agencies that are charged with maintaining and making available public records of registered lobbyists. State elections offices, ethics commissions, and secretaries of state typically are the agencies with such duties.[2] Although, much of the lobbying activities of colleges and universities occurs informally, and thus would be underreported – or unreported – in the state databases, these online sources do contain very rich information.

In addition to the uses to which Tandberg (2008, 2010a, 2010b) has put these particular data, there are other possible avenues of research application. For instance, Wisconsin's online archive contains information on the activities of various registered lobbyists, including not-for-profit and for-profit higher education groups in that state. One can search the database to determine the extent of an organization's lobbying effort (number of hours) and expenditures (in dollars) on a given bill and in a given legislative session. One can cross-reference the efforts of other organizations that lobbied on the bill, and track the efforts of those organizations over time. As a result, one can track, bill-by-individual-bill, the proportion of an organization's total lobbying effort, comparing it with the effort expended by other organizations. One can also track the involvement and efforts of a given lobbyist across bills, organizations or even industries.

In the 2008 reporting period, for example, the University of Phoenix reported having spent $60,000 on lobbying, the bulk of which was expended on Assembly Bill 281, a measure that would have shifted some of the Department of Public Instruction's regulatory authority over teacher education programs to another state agency. The database indicates that a number of other groups and universities also lobbied on the bill. These included the Wisconsin Association of Independent Colleges and Universities, the Association of Wisconsin School Administrators, the Wisconsin Education Association Council, the Wisconsin Technical College District Boards Association, and Marquette University. Marquette University's primary

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[2]See, for example, the online lobbyist registration databases for California http://cal-access.sos.ca.gov/; Florida http://www.leg.state.fl.us/Lobbyist/index.cfm?Tab=lobbyist; New York http://www.nyintegrity.org/public/lobby_data.html; Pennsylvania http://www.oit.state.pa.us/LobbyistRegister/Site/Default.asp; Texas http://www.ethics.state.tx.us/guides/LOBBY%20guide.htm#REGISTERING; Tennessee http://tennessee.gov/tref/lobbyists/lobbyists_faq.htm; and Wisconsin http://ethics.state.wi.us/lobbyingregistrationreports/LobbyingOverview.htm.

interests in the 2008 session, however, apparently lay elsewhere: the university reported that the bulk of its time was spent lobbying for the Marquette University College of Dentistry.

As a final prospective data source, albeit indirect, some political scientists have turned to data on state workforces as useful indicators of lobbying influence. Because public-agency officials often are the most effective advocates for specific programs (Gormley, 1996), particularly ones benefiting the public sector, some studies have used a ratio of public-sector employees to total state workforce as an indicator of group influence on certain state policy outcomes. The argument sometimes proceeds as follows: the larger the proportion of public-sector employees in a state's overall workforce, the stronger the lobby for more state spending on public bureaucracy – that is, on the programs that provide jobs for public employees and on the budgets of bureaucrats (McLendon & Hearn, 2007). One can envision a parallel argument being made in the context of public higher education: states in which the number of employees in the higher education sector comprises a larger proportion of the total state workforce (or of the public sector workforce) are ones that should be most likely to support certain programs, initiatives, and funding obligations benefitting public higher education.

Future researchers may want to examine more specifically the factors impacting the higher education lobby within the states. In higher density states, for example, are higher education institutions more or less likely to utilize associations or form lobbying coalitions? It stands to reason that higher density states national associations or lobbies would be among the many interest groups. Might the higher education coalitions in these states include less obvious actors such as national foundations and policy organizations? And, in a state such as Florida, where interest groups play a more "dominant" role overall in policy formation (Nownes et al., 2008), would campuses be more effective by relying on "hired guns" to advance their interests, or would they be more effective by distinguishing themselves from the behavior or the tactics of other interest groups, relying instead on campus-based government relations officers?

Also, what impact does the density and diversity of a state's interest group environment have on the state's higher education lobby? For instance, is a state with relatively few organized interests (i.e., small number of public institutions, fewer private institutions, non-unionized faculty) less likely to influence policy decisions, such as state funding via direct appropriations and student financial aid? Would a state with a denser higher education interest group landscape (i.e., many public and private institutions, PACs, etc.) be more likely to yield increased resources, or would these interests compete directly with one another and thereby offset their collective impact? Higher education researchers (e.g., McLendon et al., 2006; Zumeta, 1998) have long examined how higher education governance structures and the profile of institutions affect funding and various policy adoptions. We still know relatively little, however, about how these varying profiles affect the lobbying tactics employed and their influence on policy decisions.

3. *To what extent do state governance structures condition the impact of the higher education lobby?*

This third question relates to an important element contained in the inner layer of our conceptual framework – the mediating effects of state systems of higher education governance on interest group influences. Although a rich body of empirical research exists documenting the impact of postsecondary governance structures on policy outcomes in higher education both at the state and campus levels (e.g., Hearn & Griswold, 1994; McLendon, 2003b; McLendon et al., 2006; McLendon, Tandberg, & Hillman, 2014; Nicholson-Crotty & Meier, 2003; Tandberg, 2010b, 2013), studies on this relationship present a muddled picture overall. For instance, governance structures that are more centralized tend to be negatively associated with state spending on higher education (e.g., Lowry, 2001; McLendon, Hearn et al., 2009; Tandberg, 2010a, 2010b; Tandberg & Ness, 2011). At the same time, studies of the relationship between governance structures and state adoption of distinctively new policies for higher education (i.e., policy *innovations*, rather than spending outcomes) present an array of empirical results lacking any clear patterns.

This stream of research flows in several distinct directions. One such is the work of McLendon et al. (2006), which reports the results of a series of event history analyses around the influences on state adoption of three kinds of performance-accountability policies in the states. Building on Lowry's (2001) work in the area of principal-agent theory,[3] McLendon and colleagues assert that the different kinds of statewide governing boards for higher education may constitute distinctive interest group systems, facilitate the institutionalization of distinctive forms of interest-group mobilization and representation, and thus hold distinctive implications for policy outcomes relating to higher education in the states. They interpret their event history analysis findings of the factors influencing the rise of performance-accountability policies in the 1980–1990s as indicating that the different kinds of boards in effect may guard the interests of their constituent campuses, in turn producing pressures that can strengthen or weaken the probability of states undertaking certain policy behaviors.

Specifically, McLendon and colleagues find a negative relationship between the existence in a state of a consolidated governing board, a centralized, corporate-style governance structure for higher education, and the probability of the state adopting a rigorous performance-funding policy – that is, one that financially penalizes institutions for their poor performance on externally-imposed, metrics of campus performance. In explaining the finding, McLendon and colleagues reason that these centralized boards (i.e., consolidated governing boards) may have a vested interest in protecting their constituent campuses from certain forms of state oversight. They observe that, "consolidated governing boards are distinctive organizationally, because they represent a kind of academic cartel in which a central group of

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[3]See also Zumeta (1998), who proposes a similar relationship between statewide boards and policy outcomes, if for different reasons.

university-system administrators directs the affairs of campuses on a statewide basis" (pp. 18). This condition, according to the analysts, may help explain why states with consolidated governing boards tend not to adopt stronger (i.e., more penalty-laden) forms of accountability mandates: "the preference of consolidated boards, which are dominated by academic stakeholders, is to avoid rigorous performance regimes that would firmly hold constituent campuses to account. Consistent with those preferences, the academic cartels that are consolidated governing boards leverage their centralized resources in support of their states adopting programmatically weaker [assessments] because those programs lend the appearance of accountability, but lack enforcement teeth" (p. 19). The authors conclude that governance structure "matters," because authority structures can help to determine whose interests (i.e., the interests of states or of campuses and, indeed, if the latter, of which campuses) may prevail.

Although the approach these analysts provide stands only as an indirect measure of interest group influence in higher education, it does provide readily testable hypotheses that are both theoretically and empirically grounded. Adding to the attractiveness of this particular line of inquiry in future research is the availability of a set of proxy measures for interest group activity across all 50 states and over time (see McGuinness, 1997).[4] Interestingly, McLendon and colleagues have tested the "governance-cartel hypothesis" in a number of subsequent studies, finding mixed and conflicting empirical support for the proposition (e.g., McLendon et al., 2011, 2014).

Tandberg (2013) has also examined the role of state governance structures in conditioning the policy impacts of various political institutions and actors having explored the relationship primarily in the context of state appropriations decisions. He hypothesized that, when individual institutions funnel their appropriations requests through the governing board – with the governing board serving as the chief, indeed perhaps sole, advocate for the institutions – the effectiveness of the advocacy effort may be less than that found under other kinds of board arrangements, such as the less centralized, coordinating-board approach, whereby each institution advocates for itself in a disaggregated manner. Tandberg also reasons that, when a central governing board official (rather than a representative from an institution located in the official's home district) contacts an elected official, the elected official may be less inclined to support the appropriations request. Tandberg found support for both of these propositions: the presence in a state of a consolidated governing board for higher education appears to lessen significantly state spending for higher education.

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[4]The models derive from McGuinness' (1986, 1988, 1991, 1994, 1997) four-fold typology, and include consolidated governing boards, regulatory coordinating boards, advisory coordinating boards, and planning agencies. As with the challenges associated with the Hrebenar-Thomas measure, the data provided by McGuinness are updated only periodically, although the gaps between updates in the McGuiness typology are shorter than those found in the Hrebenar and Thomas surveys.

Although, these particular kinds of measures of interest group influence in higher education, namely ones that incorporate variation in the structural arrangements for postsecondary oversight in the states, enjoy both solid theoretical grounding and empirical support, research clearly would benefit from more direct, refined measures. In one such effort, Lacy (2011) has developed a Bayesian latent-variable model with informed priors. As seen in the work of others analysts in this tradition, Lacy also relies on the underlying logic of the five-fold governance typology for higher education that McGuiness (1997) popularized. Yet Lacy also incorporates, for each state, data indicating more subtle governance changes over time, resulting in a continuous measure that situates each state uniquely along a governance-centralization continuum. This particular line of work represents a promising step in the direction toward development of empirically verified measures through which researchers can better assay the extent to which state postsecondary governance structures may condition policy outcomes for higher education.

In a distinctively newer approach to the study of state interest-group influences in higher education, Tandberg (2006, 2007, 2010a) developed and tested several indicators of interest group capacity, resourcing, and competition on state funding outcomes for higher education. In one panel study, for example, he found that the percentage of registered lobbyists representing colleges and universities had a significantly positive relationship to state funding levels (Tandberg, 2010a). Other research has found confirming evidence for Tandberg's claims. Using a panel design and several of the Tandberg-developed measures, McLendon, Hearn et al. (2009) analysis of state appropriations for higher education found that for every additional registered higher-education lobbyist in a state, appropriations to higher education rose by about $0.05 per $1,000 of personal income.

Whereas, a decade ago, the literature on postsecondary governance and interest group influences in the states was scant, today both research and theory around the relationship have improved. Research, however, remains in an "exploratory" phase. More research is needed both in theory development and elaboration and in empirical application. For example, future research might examine the role and influence of national foundations and policy organizations and how their lobbying activities might be associated with higher education governance structure. Do states with centralized governance structures, based on their higher levels of authority and increased research capacity, resist or try to undermine the efforts of these national organizations? Conversely, do these national organizations play a stronger role in states with weak planning agencies? Answers to these questions about how higher education governance structures interact with the other obvious and less-obvious actors stand to greatly enhance our understanding of state higher education interest group activity.

Conclusion

Despite a vibrant interest-group literature in political science and in K-12 education, too-little research in the field of higher-education studies exists on the topic of lobbying, lobbying activities and efforts, and lobbying impacts. The conceptual and the methodological advances of the past decade, however, provide a firm base upon which to build. The conceptual framework, research questions, and data sources that we have examined throughout this manuscript begin to fill those large gaps that exist. A multi-faceted approach that builds on past research and theory in political science, applies existing conceptualizations of group influence, and leverages both established and newer data sources holds enormous potential for addressing the patently important, yet poorly-understood, phenomenon of interest-group behavior and outcomes surrounding higher education in the states.

Appendix: Prospective Research Questions Related to Interest Groups and Higher Education in the States

State Landscape of Interest Groups and How They Operate	Why do some institutions choose to employ a full-time lobbyist (e.g., director of governmental affairs) and others choose to contract with a lobbying firm or do both? What are the trade-offs?
	To what extent do higher education lobbying strategies vary by state? To what extent do they vary by sector or locus of control?
	To what extent do the tactics, strategies, motivations, and methods of higher education lobbyists and interest groups differ from other lobbyists and interest groups?
	How do the size and resource bases of higher education lobbies vary across states?
Factors Influencing the State Interest Group Landscape	What impact does the density and diversity of a state's interest group environment have on the state's higher education lobby?
	What factors influence a higher education interest group's decision making in regard to lobbying strategy?
	What is the relationship between a state's interest density and diversity and various measures of the strength of the college and university lobby (e.g., the Thomas and Hrebenar's scale)?
	How has the relative size of the higher education lobby changed over time? Which characteristics of the higher education lobby (e.g., organizational attributes, reliance on "hired guns," etc.) changed overtime? Why have these changes occurred?

Impacts of State Interest Groups on State Politics and Policy Outputs	What impact do interest groups, and specifically the higher education lobby, have on state level higher education policy?
	What, if anything, has resulted from changes in higher education's influence? What difference has the lobby made in terms of state policy outcomes? How has the policy impact changed over time?
	To what extent do state governance structures condition the impact of the higher education lobby? What structures most and least mediate the policy influence of the higher education lobby?
	Does the impact of the higher education lobby vary depending on whether an institution employs a contract lobbyist, an in-house lobbyist, or both?

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Chapter 5
Endurance Testing: Histories of Liberal Education in U.S. Higher Education

Katherine E. Chaddock and Anna Janosik Cooke

Liberal education in U.S. colleges and universities has a checkered past. It is a concept that has proved resistant to common definitions, chronological patterns, or organizing frameworks that might guide our understanding of its evolutionary journey. With at least 200 years of accelerating variability in meaning and practice, the idea of liberal education has been promoted as everything from a process for acquiring essential knowledge to a way of safeguarding liberal culture, from a preparation for social contribution to a foundation for professional achievement, and from a cure for curricular incoherence to an antidote to faculty specialization. Aims of liberal education can be found in phrases ranging from "intellectual excellence" (Newman, [1852], 1996, p. 7) to "requisite intelligence for democratic citizenship" (Hutchins, 1954, p. 58) and "perfect gentlemanship" (Strauss, 1968, p. 6). Any and all of these individual and societal purposes have been applied to the terms *liberal education, general education*, and *liberal arts education.*[1]

Given the descriptive fog shrouding the notion of liberal education, it is hardly surprising that scholarship attempting to tackle all or some of its history is difficult to analyze or even to categorize. Sources include a mix of recent reviews and earlier histories, few of which share either methods of inquiry or approaches to

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[1]For purposes of this work, histories using any of these three terms are included when they refer to labels for education that is broad in nature and scope and that emphasizes learning in areas of the humanities and/or in the seven liberal arts.

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analysis. Some historians chronicle the changing idea of liberal education (What is it anyway?), while others describe its operation in various institutions over time. Some trace debates about the purposes of liberal education, while others attempt to identify its actual or desired outcomes. And some investigate just one of many means toward liberal education to recount the histories of specific approaches such as common core, great books, distribution, and progressive experiment. Furthermore, certain official documents such as the Yale Report of 1828 and the Harvard Redbook of 1945 have become part of both the history and the historiography of liberal education by reporting its past and its future. Finally, a large body of literature has located liberal education as a persistent, if fading, strand within the totality of U.S. higher education history, for example Hofstadter and Hardy's (1952) *The Development and Scope of Higher Education in the United States*, Veysey's (1965) *The Emergence of the American University*, and Rudolph's (1977) *Curriculum: A History of the American Undergraduate Course of Study Since 1636*.

In this chapter, we take as our point of departure the varying definitions of liberal—and/or general—education in the United States as they have occurred and changed since the early nineteenth century. Prior to the Revolution and subsequent nation-building era, there was little need for concern. A curriculum common to all students and steeped in ancient languages, classical texts, logic and rhetoric, and mathematics was a liberal education by almost anyone's definition at that time. Only when the reality of scientific study and the possibility of vocational and professional learning garnered serious attention on nineteenth century campuses did historians and others begin attempts to define and defend liberal education.

We also devote a section of this chapter to the small collection of histories that have attempted birth-to-(near)death overviews of the idea and/or practice of liberal education—some explaining the enduring tensions of debates and accommodations (e.g., Kimball, 1986), some promoting social and economic context as catalysts of change (e.g., Oakley, 1992), and some surveying the history of liberal education programs at specific institutions (e.g., Rudy, 1960; Thomas, 1962). The remainder of this chapter draws upon literature related to three specific time periods in the journey of U.S. liberal education, including most of the nineteenth century, the first half of the twentieth century, and the post-World War II era. Both the body of work created by observers of key developments during these eras and the subsequent analyses of later historians significantly contribute to a full historiography of liberal education.

Much writing on liberal education in U.S. colleges and universities has for some time lamented its total collapse or its passing into forms seemingly unrelated to its earlier nature. However, we observe that despite overwhelming odds, liberal education never actually slipped into that goodnight. Instead, in a manner that was as tenacious as it was improbable, it surfaced and resurfaced throughout the late nineteenth and twentieth centuries as ideas, plans, experiments, innovations, and compromises that might prepare students intellectually, socially, and culturally. While there has been no final determination concerning what liberal education was, is, or should be, ongoing discussions about it support Derek Bok's (1986) contention that "the fact that curricular debates are inconclusive does not mean that they are unimportant. Far from it" (p. 44). Such debates continue to offer determined

defenses against academia's wholesale adoption of strictly utilitarian values, as well as hopeful possibilities that common ideals and knowledge widely shared might soften runaway self-interest.

The Fog of Definition

While historians and other scholars have rarely succeeded in clearly defining liberal education, their discourses on its aims and operations do indicate an evolutionary chronology of changing definitions. Lawrence Veysey (1965) marked the start of that evolution as a period of "discipline and piety" stridently defended by the Yale Report of 1828 and reaffirmed by many educators throughout the nineteenth century. Discipline, viewed as both mental and moral, reflected a partnership of educational and theological orthodoxy that benefited from the public speeches and written manifestos of college leaders like Noah Porter of Yale College, James McCosh of Princeton College, and J.W. Strong of Carleton College. "The everyday staple of presidential discourse was the inculcation of moral character in a religious context," noted Veysey (p. 28).

Emphasis on mental discipline was readily supported by the rationalism of John Henry Newman, whose enthusiasm for liberal education encouraged him to claim it as "simply the cultivation of the intellect" in his famous 1852 collection of lectures, *The Idea of a University* (1996, p. 12). After the Civil War, however, the ideals of education for discipline and piety quickly began to seem outdated. As educators and students exhibited growing enthusiasm for science and industry and for new interpretations of higher learning from the European continent, especially Germany, the idea of morality was recast as *character* or *whole person*. A mental discipline aim "no longer seemed relevant to an urban, worldly civilization" (Veysey, 1965, p. 55). The collapse of the classical curriculum, initially intertwined with liberal education, sparked an opportunity for not only new definitions but also new approaches.

To Veysey (1965), the new defining objective of those educators who remained outside the excitement for research means and utility ends was "liberal culture," a humane ideal that elevated the cultivation of fine tastes in art and literature, as well as noble character prompted by philosophical appreciation (pp. 180–251). Now relevant was Matthew Arnold's (1895) early claim for education in "the best which has been thought and said in the world" (p. 4) and Charles Eliot Norton's (Norton, Hadley, Sloane, & Matthews, 1895) definition of "the highest end of the highest education" as "intellectual culture in the development of the breadth, serenity, and solidity of the mind" (p. 32).

The ideal of culture, however, was a way to define only one of many purposes of higher education. The nineteenth century growth of professional training, technical and agricultural colleges, graduate studies, research, and elective coursework required liberal education to somehow accommodate demands for utility, inquiry, and choice. While some traditionalists still promoted aims related to moral and

mental training and/or culture acquisition, others also emphasized the foundational nature of liberal education for more inclusive purposes—none so eloquently as John Stuart Mill (1867):

> Men are men before they are lawyers, or physicians, or merchants, or manufacturers; and if you make them capable and sensible men, they will make themselves capable and sensible lawyers or physicians. What professional men should carry away with them from a University is not professional knowledge, but that which should direct the use of their professional knowledge, and bring the light of general culture to illuminate the technicalities of a special pursuit (p. 4).

The idea of "liberal-free" accommodation, a term coined by Bruce Kimball (1986), is a particularly relevant concept for considering how traditionalists began to position liberal education in the late nineteenth and early twentieth centuries. Maintaining early etymological emphases about freedom to learn and/or the education of a free citizen, Kimball's liberal-free accommodationists embraced the idea of a liberal education with concern for both meritocracy and modernism—primarily in languages, sciences, and research. Notions of academic rigor for the brightest of undergraduates, inclusive of rational inquiry and scientific reasoning, signaled that liberal education would be redefined with regard not only to purposes determined by educators but also to preferences indicated by future students. Studies in the liberal tradition would be able to claim a very broad objective related to liberty and loftily defined as "a free mind, an open mind, a candid mind, a generous mind" (Eliot, 1908, p. 499). After two world wars and increased access to higher education for the middle class, that aim would handily incorporate the patriotic imperative to emphasize that liberal education supported "the very foundation of our democracy . . . freedom of the mind" (Aydelotte, 1944, p. 9).

As the objectives of liberal education met with increasing expansion, the content also became subject to generalities. Historical analyses have noted that renewed support of traditional humanism was perhaps the first recognizable response to the lost content of the classical curriculum (e.g., Brubacher & Rudy, 1968; Rudolph, 1977). Humanists jumped into the growing content vacuum to hype literature, history, and philosophy as the right places to look for a liberal education and at the same time find release from the influence of newer social and behavioral sciences. The humanist resistance to loss of curricular coherence was eventually joined by forces of rationalism, including proponents of common core learning, especially via great books, who insisted that intellect—a deciding factor in human rationality—could and should be the primary concern of a liberal education. For rationalists, such as University of Chicago presidential prodigy Robert Maynard Hutchins, the single point of undergraduate education was liberal education, and its object was "to train for thinking in long-range theoretical perspective" (Brubacher & Rudy, p. 298).

Soon, however, elements labeled by Brubacher and Rudy as *naturalism*, especially as sparked by pragmatic John Dewey, surfaced in the debate about liberal education content. The idea that problems of current relevance, and particularly of current experience, were more vital than discussions of ancient philosophies and texts had special appeal for those who viewed liberal education as preparation for life in a democracy.

Throughout the twentieth century, no single notion of liberal education philosophy, purpose, or content fully dissolved or finally prevailed. Instead, like multiple sliding doors, various ideas about it slipped over and back. Clear testimony to its definitional difficulty is found in the work of Mark Van Doren, who managed in his volume *Liberal Education* (1943) to duck any temptation to clearly define his title. Somehow, his determination that "a liberal education is nothing less than a complete one" seems incomplete (p. 12). Like many scholars before and since, he found more solid ground in stating what liberal education was not and what it was not quite. "A liberal education," he reflected, "is more than a classical education, more than an education in English literature, more than an education in what is called 'the humanities,' and more than a training in the moral virtues" (p. 43). And, "liberal education is not everything except science" (p. 51). As for overarching purposes, Van Doren gave a thumbs up to democracy and access, as would be expected when writing during the World War II era. But, at the same time, he offered a nod to more traditional sentiments by claiming "the aim of liberal education is one's own excellence, the perfection of one's own intellectual character" (p. 67). And, he even included a pat on the back to the pragmatists who were experiencing marked success in progressive colleges and programs: "The prime occupation of liberal education is with the skills of being . . . . Liberal education is now" (p. 6). Finally, perhaps exasperated at his own multiple explanations, he simply concluded that liberal studies "are by definition studies which we are not at liberty to omit" (p. 81).

Like Van Doren, Everett Dean Martin (1926), widely applauded for his success in early twentieth century adult and community education, ran headlong into the problem of unfulfilled title promise. His book *The Meaning of a Liberal Education* came closer to defining purpose than meaning with his traditionalist description of liberal education as "the kind of education which sets the mind free from the servitude of the crowd and from vulgar self-interests" (p. viii). He did, however, clearly indicate what liberal education was not (e.g., narrow specialization or individual instrumentalism) in a chapter with the captivating title, "Education vs. Animal Training." Writing in 1920, Alexander Meiklejohn included in *The Liberal College* an early chapter titled "What the Liberal College Is Not" (p. 13) before he ventured into "What the Liberal College Is" (p. 29) in the next chapter.

More recently, scholars looking back on liberal education and its evolution on U.S. soil have sought clarity of definition by naming categories for various approaches to practices and purposes. Warren Bryant Martin (1982), using the search for coherence as his framework for analysis, suggested four approaches to student learning in general education: (1) *common fate* (emphasizing development in areas such as human interaction, family, and spirituality); (2) *common skills* (emphasizing skills in written and oral communication, inquiry, computation, research/analysis); (3) *common ground* (emphasizing awareness of social and economic contexts, humane action, ethical morality, and values); and (4) *uncommon individual* (emphasizing individualized and experiential learning in any setting).

Stanley Katz (2005) has noted that, although domains of knowledge and the nature of colleges and universities have changed drastically, "we have not traveled

far in our definitions over the past 100 years" (p. 6). He identified three streams in which operational philosophies of liberal education swim. The oldest, the *distribution* stream has allowed for "enforced diversity of subject matter to be provided by regular disciplinary departments" (p. 7). The *common core* stream began as a World War I course on war issues at Columbia University and soon expanded there and elsewhere to include core courses in great books, peace issues, western civilization, ideas in humanities, methods of inquiry, and the like. The *cognitive development* stream, championed by John Dewey and embraced by progressive colleges and programs—including many early honors programs—encouraged students to focus on inquiry, synthesis, analysis, and reflection, rather than specific content (p. 7).

Kimball (1986) has documented several categories of definition, attempted definition, and failed definition suggested by various scholars. The first of these, relativism, comprises an enormous range of educational philosophies in order to determine only that "liberal education is what one receives a liberal arts degree for . . . " (p. 7). In opposition to relativism, Kimball found (and preferred) attempts at historical continuity—the creation of definitions that reach back to Athens and on to Rome and Newman's Dublin to seek connections with the foundations of academic endeavors and the seven liberal arts. He also noted an area of thought that he termed the "a priori definition," which has relied on more recent history and pragmatic philosophy to claim that "liberal education means a liberating or a freeing of the mind to pursue truth" (p. 8). These definitional schemes, according to Kimball, have prompted continuing confusion and ambiguity about what liberal education is now and has been in the past, a situation which in turn encouraged him to investigate the roots of the notion in his work *Orators and Philosophers: A History of the Idea of Liberal Education* (p. 9).

Notably, discussions about defining liberal education constitute a liberal education in themselves: Interdisciplinary, historical, philosophical, literary, scientific, truth seeking, individualistic, intellectual, developmental, and contemporary. Any firm conclusions are confounded by efforts to preserve a very old educational ideal—or perhaps various old ideals—amidst sea changes in areas of expanding knowledge, advancing technologies, shifting social commitments, varying individual preferences, and fluctuating economic circumstances. The definitional fog may stem from unspoken recognition that even a broad and foundational ideal will continually need reshaping in light of new realities.

The Long View

Historians who have undertaken longitudinal analyses of most or all of the liberal education lifespan tend either to map a journey that began more than 2,000 years ago (e.g., Kimball, 1986; Oakley, 1992; Woody, 1951) or to track the march of curriculum change in U.S. colleges and universities since the seventeenth or eighteenth centuries (e.g., Carnochan, 1993; Rudolph, 1977; Thomas, 1962). More notable than chronological and geographical parameters, however, are analytical

frameworks developed to suggest ways of considering the how and why of the evolution of liberal education. In general, although without strict divisions and with some combinations and spillovers, those frameworks can be categorized under two perspectives. One perspective emphasizes curricular evolution as guided by changes in prevailing thought (both in and outside the academy) about the nature of knowledge and the purpose of higher education. The other perspective highlights the influence of changes in contextual conditions that required ongoing adaptations in meeting individual and societal needs and preferences. Changes in thought typically have been guided by scholars and experimenters, whereas changes in context have been shaped by larger environmental circumstances within and outside academic boundaries. Clearly, there is a chicken and egg conundrum here. Do changes in prevailing thought follow changes in context, or vice versa? Nevertheless, both perspectives are important for illuminating debates and ideas that have shaped varied approaches to liberal education in U.S. colleges and universities.

Changing Philosophical Underpinnings

The themes conceptualized in Bruce Kimball's elegant *Orators and Philosophers: A History of the Idea of Liberal Education* (1986) demonstrate that the foundations of thought and practice undergirding liberal education have been in evidence since Athenians considered *artes liberales*. They have remained in some forms on through the cathedral schools of northern Europe, the great universities in Bologna and Paris, the colleges that comprise Oxford and Cambridge, and the diverse adaptations in U.S. institutions of higher education. Those foundations reflect tensions between two competing ideals that have continually reconfigured to shape the nature of liberal education in various times and places.

The ancient *artes liberales* ideal, represented by Kimball's (1986) orators, was committed to building virtuous citizens for societal leadership through study in the seven liberal arts—with particular focus on the trivium of rhetoric, logic, and grammar. Kimball characterized the approach as one of dogmatic pragmatism demonstrated by the orator attitude that "the task of liberal education is to inform the student about the virtues" and the belief that "truth can be known and expressed" (p. 38). At least one reviewer noted a strong orator affinity with Robert Maynard Hutchins' contention that "knowledge is truth. Truth is everywhere the same" (Franklin, 1988, p. 203).

Slight changes in scholarly perceptions advanced through the Middle Ages, but truly new outlooks had to wait for Renaissance humanists and, more forcefully, Enlightenment modernists. These were the philosophers who coaxed a *liberal-free* ideal to the forefront in the eighteenth century to focus on a meaning of liberal that emphasized "freedom, especially freedom from a priori strictures and standards" (Kimball, 1986, p. 119). Now proponents of the liberal arts could embrace individual ends, intellect, critical thought, and the pursuit of knowledge for its own sake.

Kimball (1986) concluded that U.S. colleges began to move toward the liberal-free ideal in earnest only after the Revolution, and they were later supported by enthusiasm for German models of freedom to learn and to teach, as well as by the expansion of scientific study, the ascendancy of the research model, and the professionalization of faculty. Ultimately, accommodations were developed that allowed for balancing tensions between the two competing ideals. The *artes liberales* accommodation, according to Kimball, "amounts, in a phrase, to prescribing the reading of classical texts primarily in order to develop critical intellect" (p. 219). The *liberal-free* accommodation rests on search for truth through scientific methods, but risks creating an elite research cadre for the task.

Noting, although not contesting, relativistic arguments about the history of liberal education, Kimball cited an expansive study by Thomas Woody which "assumes that liberal education amounts to the highest educational ideals of a particular culture at any particular time" (Kimball, 1986, p. 7). Indeed, Woody's *Liberal Education for Free Men* (1951) observed liberal education as early as ancient Chinese training in music, mathematics, and military arts combined with emphases on family and civic virtues. This contrasted with later educational philosophies in Athens where Socratic inquiry could lead to virtue and where "one must seek truth among his fellows, the ordinary and those who are reputed to know . . . ." (p. 37). Other interpretations, especially those related to learning for action and public service, eventually held sway in Rome; these were furthered with the spread of Christianity. By the fourteenth and fifteenth centuries, for example, humanists managed to promote history and poetry as "studies necessary for genuine culture" (p. 171), particularly in Spanish and Italian universities. The idea of mental discipline, noted by Veysey (1965) as the first conceptual toehold in American higher education, was seen by Woody (1951) as "a later discovery of philosophers in quest of universal improvement of the mind" (p. 193).

For W.B. Carnochan (1993), the various approaches to purpose and definition in liberal education boiled down to centuries of differences between ancients and moderns, a framework for debate initially emerging from Swift's satirical pen as *The Battle of the Books* (1704). A similar dichotomy structured the work of Francis Oakley (1992) who labeled the opposing outlooks "the rhetorical vision" and "the philosophical-scientific model" (p. 5). Thus, for many historians the dividing line in opposing approaches is plotted between traditional regard for humanistic (often classical and/or moralistic) ideals and progressive commitments to learning and discovery suited to contemporary contexts. A case can be made that such dualisms echo Kimball's (1986) framework, but without his nuanced precision of historical detail. "Between the hammer and the anvil of these competing approaches little peace over the centuries has been able to grow," noted Oakley (p. 5).

In his historical account *The Battleground of the Curriculum* (1993), Carnochan credited Bacon, Locke, and Rousseau with initiating a western modernist view of educational thought which soon gained further momentum among nineteenth and twentieth century American thinkers. Perhaps mindful of Gerald Graff's (1992) suggestion to teach the conflicts, Carnochan's volume detailed differences between Mathew Arnold's ideal of cultured gentlemen and John Henry Newman's of

benevolent citizens. It then gathered steam with contrasts between Charles Eliot's conviction that the fittest will select a liberal education through free election and James McCosh's preference for at least some requisite common exposure to classical subject matter. Finally, Carnochan detailed arguments between traditional humanists calling for gentility and modern humanists calling for social responsibility. In practice, such debates eventually ignited ongoing skirmishes pitting common-core traditionalists against cultural diversity warriors who battled for inclusion of world views and political correctness in all teaching and learning. Only the objective of democratic citizenship, particularly prominent during and between wars, managed to avoid a worthy opponent in the pantheon of dualistic thought concerning liberal education.

Oakley (1992), for 8 years president of Williams College, viewed nearly all ancient education as liberal education—generally toward virtue and leadership as promoted in Greek and Roman teaching and writing, Middle Eastern scholarship, and later European monastic and guild systems. In *Community of Learning: The American College and the Liberal Arts Tradition*, he echoed Kimball's (1986) observations of a long lineage of continuing differences between the dialectic of critical inquiry on one hand and the transmission of logic and knowledge on the other. However, by the time those issues came to a head in U.S. higher education, "the intermingling of these competing approaches" led not to clear dichotomies, but to confusion and "formidable complexity [concerning] what constitutes a liberal education . . ." (p. 62).

The views of academic humanists linked to the tradition of Matthew Arnold (e.g., Irving Babbitt, George Edward Woodberry, Charles Eliot Norton) gained limited acceptance during their late nineteenth and early twentieth century campaign against pent-up demand for modernized curriculums. These scholars have generally been characterized as a "small but vocal band of counterrevolutionaries" (Miller, 1988, p. 19). Their concerns for cultivated gentlemen were moral, aesthetic, emotional, and social, particularly emphasizing literary and artistic appreciation and unity of knowledge (Miller, 1988; Veysey, 1965). Soon, however, a new generation of humanities generalists, more committed to democracy than culture and to experiment than to preservation, managed several decades of prominence. In her history of classicism, Caroline Winterer (2002) observed that general humanities, especially in modern languages, modern literature, and history, found a secure foothold in the curriculum when (and perhaps because) Greek and Latin requirements slowly disappeared. "Fewer students might know the classical languages by 1910—indeed most students were resolutely modern—but the victory of the humanities was to bestow upon these moderns the benediction of classicism—of intellectual, civic, and moral culture, of ennobling acquisition . . ." (p. 119). The new breed of academic humanists, joined by some young social scientists, would shape mass culture while promoting expansion of the liberal education agenda and coherence in the undergraduate curriculum.

From that point, Oakley's history joined those of Thomas (1962), Rudolph (1977), Carnochan (1993), and others in suggesting a fairly straight line to educators who would develop new models of rhetorical tradition in U.S. liberal education—first from John Erskine's great books seminars at Columbia University and that

same institution's contemporary civilization core courses, and then on to Alexander Meiklejohn's experimental college at the University of Wisconsin, Robert Maynard Hutchins's core curriculum at the University of Chicago, and the promise of the Harvard Red Book. Eventually, and predictably, these efforts prompted push-back—especially from swelling numbers of post-modernists, deconstructionists, feminists, multi-culturalists, and others. The result, according to Oakley (1992), was "the daunting complexity of 20th century debate about liberal education [that] springs from extraordinarily intricate and constantly shifting accommodations . . ." (p. 64).

Changing Contexts of Time and Circumstance

While scholarly thinkers and worldly philosophers contributed to the shape of liberal education through thought, discussion, and experimentation, societal contexts played a leading role in determining when and where one idea or another might take hold. While both types of influence have operated in continual and intertwining ways, it is possible, especially as liberal education played out in the young and fast-growing United States, that contextual influences trumped all else at least some of the time. Rudolph (1977), chronicling three centuries of U.S. curriculum evolution, noted very early indications of the influence of environments well beyond the colleges: "Fad and fashion entered the making of the American college curriculum for the first time when during and after the Revolution the new nation carried on an affair with the French" (p. 51). In his long view of the next two centuries Rudolph observed ever-stronger influences of context: "If in the nineteenth century the curriculum defined the market for higher learning, in the twentieth the market defined the curriculum" (p. 247).

Russell Thomas (1962) divided his historical overview in *The Search for a Common Learning: General Education, 1800–1960* into four discrete chronological periods, the first of which was steeped in the context of small colleges, religious ideals, and British educational regard. Even in that first period, the market began to matter as changing contexts prompted changes in liberal learning. By 1827, growing numbers of students preparing for law, medicine, or divinity prompted Amherst College to launch an experiment with a liberal program of studies more modern (in languages and sciences) than and parallel to its classical program. The idea, although short-lived at Amherst, modelled unusual forward-thinking concerning response to market demand for "a coherent curriculum without Latin or Greek" (Rudolph, 1977, p. 83).

Thomas (1962) demonstrated that by mid-century nearly every voice in the discourse on higher education—including those of Francis Wayland, Charles Eliot, Henry Tappan, and Paul Chadbourne—wrestled with maintaining something like liberal education while also meeting public demands for expanded subject matter, technical and professional career preparation, and knowledge shared well beyond the upper class. An overview study by Willis Rudy, *The Evolving Liberal Arts Curriculum: a Historical Review of Basic Themes* (1960), bracketed four time

periods with slightly different dates than the Thomas analysis, but agreed that changes to the classical curriculum were well underway by the middle of the nineteenth century. Rudy, however, insisted that even amidst parallel coursework leading to bachelor of science degrees and innovative new institutions like Rensselaer Polytechnic Institute of 1824 and University of Virginia of 1825, mental discipline goals of traditional liberal arts curriculums maintained prominence until late in the century. Nevertheless, later experiments with upper and lower colleges, liberal education in secondary education, and distribution systems would be traced back to the earlier marketplace messages concerning the many college students who desired something other than traditional intellectual exercise.

Most historians of the American college and university curriculum have viewed the late nineteenth century as a time of "disharmony" (Rudolph, 1977, p. 154). While that period marked the start of "the age of the university" (Hofstadter & Hardy, 1952, p. 29), it seeded doubt and confusion about what would happen to liberal education. Thomas (1962) labeled the period as a destabilizing curricular contest between "the interest of the individual and the common interest" (p. 35). Educational models in the United States were blamed for "failure to confront the contradictions between the aristocratic basis of Anglo-European approaches and the democratic, scientific, and technological realities of American life" (Wong, 1996, p. 66). According to Rudolph, even "special-purpose colleges and universities for blacks, women, and Roman Catholics made their own contributions to the confusion of purpose and style that characterized the curriculum" (p. 167).

The embrace of university research and research universities, enthusiasm for electives, specialization of faculty interests, increase in knowledge, inclusion of professional training, and growth of social sciences and psychology were significant threats to the stability of the undergraduate curriculum. However, these institutional elements were themselves responses to environmental change. The growth of American industry, production, western development, wealth, and expectations after the Civil War created both demands for new skills and resources to finance educational systems that could meet those demands (Hofstadter & Hardy, 1952; Rudolph, 1977). Rudy's (1960) study of curriculum changes at ten 4-year liberal arts colleges found steady nineteenth century expansion in modern language and science course offerings, allowance of modern language (especially French and German) as substitutions for Greek, applied scientific training (e.g., surveying and navigation), and elective course options (p. 9).

Perhaps the most stunning example of demand and response was the swelling elective system. Rudolph (1977), tracing its path at Harvard and Cornell, noted "the shape of the curriculum, the growth of departments, the peculiar instructional mix of any particular institution was a measure of the degree of choice allowed to students . . . " (p. 122). Proponents of liberal education could do little more than hang on at small private colleges and at universities with well-established humanities strongholds while waiting for a pause in market demand or a clamor for the next reforms.

In *The Meaning of General Education*, Miller (1988) noted the start of a reform period for liberal education early in the twentieth century when presidents

Roosevelt and Wilson peppered speeches with calls for widespread national welfare. Similarly, in his article "Coherence in General Education: A Historical Look," Kenneth Boning (2007) pinpointed 1910 as the beginning of the first of three eras of curricular reform toward at least some "broad general education rooted in the liberal arts and sciences" (p. 6). Helen Lefkowitz Horowitz reminded that two-thirds of the student body in 1910 were in vocational courses of study (2005, p. 21). For Russell Thomas (1962), however, the curricular reform period began as a collective sigh of relief when Abbott Lawrence Lowell became president of Harvard in 1909 and immediately signaled a retreat from elective courses.

The collapse of unified enthusiasm for elective coursework prompted the launch of "experimental general courses" in liberal education that tackled disciplinary specialization and curricular incoherence (Thomas, 1962, p. 69). The benchmark exemplars started when U.S. involvement in World War I ushered in "War Aims" courses to complement military training on campuses that hosted the Student Army Training Corps. After the armistice, War Aims continued at Columbia as Contemporary Civilization, alongside another new interdisciplinary venture in great books seminars. Other significant interdisciplinary courses soon occurred in the core curriculum at the University of Chicago, in Reed College's senior seminars, at Alexander Meiklejohn's Experimental College at the University of Wisconsin, and elsewhere. Boning (2007) echoed Thomas (1962) in noting an important distinction: "Although interdisciplinary courses represented a new way to deliver general education, they typically did not replace other courses. Instead, they were added to existing lists from which students could choose" (p. 7).

Scholars of higher education typically have observed that at this juncture the idea, or at least the label, of *general education* began to upstage the concept of *liberal education* on U.S. campuses (Rothblatt, 1988; Rudolph, 1977; Weaver, 1991). Whereas Levine (1978) found the terms often used synonymously, Miller (1988) emphasized differences in the instrumental aims of the general education label v. the internal character (toward mental processes and abstract ideas) of liberal education. Yet, warned Hofstadter and Hardy (1952), "as a defining term, general education is even more ambiguous than liberal education, inasmuch as it is not the product of a long tradition" (p. 210).

Some scholars have viewed general education as a necessary response to bewildering specialization in faculty focus and course content—a panacea in the form of a common curriculum for at least some of the students some of the time. Summarizing the ongoing need for remedy, Wong (1996) concluded that "most debates about liberal education, general education, or core curricula in the past half century have essentially turned around the question of how to reconcile the traditional aspiration for a common, shared academic culture with the separating tendencies of specialized academic disciplines" (p. 67). Rudolph (1977) noted that many common courses after World War I tackled orientation to college academics or taught approaches to learning and discovery. Others, dealing with contemporary civilization, came closer to earlier rationales for liberal education by undertaking "the cultivation and transmission of the intellectual and philosophical inheritance of the Western world as an instrument of man's understanding of himself" (pp. 237–238).

Highlighting a newfound twentieth century regard for individual creativity and breadth of life experience, Rothblatt (1988) included in the general education movement a handful of progressive experiments at colleges such as Black Mountain, Bennington, Goddard, Rollins, and Hamilton. George P. Schmidt (1957) concluded that while there was more flurry of activity in the direction of progressive practice, most large institutions simply developed a few common core courses or distribution systems. Dewey himself wrote in 1944 that the term "liberal arts college" for many institutions so labelled was "reminiscent rather than descriptive" (p. 393).

Miller (1988) did attempt a distinction between liberal education and general education, viewing the former as concerned with intellectual advancement and the latter as focused on problem solving for both individual and social action (p. 183). However, he admitted that other analysts and educators often did not recognize the same differences, or perhaps any differences at all. Scoffing that the general education movement of the mid-twentieth century was evocative of "a more distant and aristocratic past," Oakley (1992) declared it constituted an attempt to bring liberal education full circle back to "some of the values traditionally embedded in the rhetorical version of the old liberal arts ideal" (p. 63). In a stronger pronouncement, Rudolph (1977) concluded that liberal education "had been robbed of meaning by its caretakers. They had allowed—if not encouraged—election and specialization to triumph" (p. 246).

Support for Rudolph's pessimism arrived from descriptive statistics in a 1996 report by the National Association of Scholars, *The Dissolution of General Education, 1914–1993*. The study leading to the report used data from 50 highly selective colleges and showed a general decline in most markers of undergraduate liberal education. For example, while general education requirements comprised 55 % of a graduate's coursework in 1914, that had fallen to 33 % by 1993. The fulfillment of general education with distribution requirements had increased fourfold during those years, as numbers of institutions with required common or general courses dropped substantially. Precipitous decreases in numbers of required courses in foreign languages, English composition, history, literature, mathematics, and natural sciences led the report's authors to point to a significant "evaporation" of content (p. 19).

Importantly, not all scholars have agreed with the conventional historical interpretations about the nature and influences concerning the rise and fall (and rise and fall) of more than 300 years of U.S. liberal education. A stinging polemic by James Axtell (1971) charged that the concept was interred prematurely by myopic historians picking low-hanging research fruit. Such analysts failed to survey the entire landscape when they stopped at the events at large and/or elite institutions and the contributions of big shot thinkers like Thomas Jefferson, Francis Wayland, F.A.P. Barnard, and Henry Tappan (p. 341). Particularly peevish about Hofstadter's (1963) favorable treatment of the university-building era, Axtell exhumed nineteenth century liberal arts colleges and their supporters to note their large numbers, their key place in community building, and their enduring contribution in modeling "the often frail but persistent belief that a college of arts and sciences should form the heart of a true university" (p. 345).

Typically, scholarly surveys of the full sweep of liberal education and its incarnation in American higher education have observed fluctuation and diversity occasioned by both changing contexts and important ideas. But they also have recognized a long-term trend of waning enthusiasm among students, faculty, and administrators for the coherence and commonality that provoked earlier experiments in liberal education.

Doubters and Defenders of the Nineteenth Century: The Great Debate

The nineteenth century in America was a time of controversy and change for liberal education, in which the industrial revolution, the opening of the West, a changing political scene, and educational debates in Europe all played key roles (Carnochan, 1993; Clapp, 1950; Kerber, 1970). British thinkers were especially influential, with John Henry Newman and Matthew Arnold representing the "conservative" side and Thomas Huxley and John Stuart Mill more in the middle, defending a slightly modernized education that hybridized utilitarian and liberal ideals. The apologies these men produced were incorporated into the debate across the Atlantic, where an escalated argument about the meaning and essence of liberal education began nearly as soon as the experiment in liberty itself did. At the beginning of the century, Benjamin Rush and Thomas Jefferson were especially prominent in questioning the role of the classics in American education, particularly at a time when opportunities for discovery and exploration appeared at nearly every corner (Kerber, 1970). As the century unfolded, the Yale Report of 1828 is generally accepted as having "won" the initial debate about the purpose of liberal education, or at least voiced the "essentials of the views held by most of America's foremost champions of university reform at the time" (Sloan, 1971, p. 243). However, some scholars argue that the Report failed to wield lasting influence by only defining the means and not the purpose of education (Lane, 1987; Potts, 2010).

By mid-century, however, figures such as Henry Tappan, Francis Wayland, Andrew D. White, William R. Harper, Daniel C. Gilman, James McCosh, Noah Porter, and Charles W. Eliot took the floor to advocate or reject emerging reforms. Although the ideas debated were not necessarily new, they assumed an enhanced relevance due to the radical social changes which America underwent during the nineteenth century, motivating an eternal quest for university reform (Pierson, 1950). Thus, the liberal education of the time can be viewed as an idea in search of a meaningful American definition, inspired primarily by British and German universities and scholars, but with unique American details of curricular choice and response to technological advances worked out by a cohort of 'doubters' in the second half of the century (Carnochan, 1993; Clapp, 1950).

The Yale Report of 1828

The report published by the Yale faculty in 1828 in defense of the classical curriculum (Greek, Latin, and mathematics) is almost universally recognized as a crucial defining moment in American higher education; Rudolph (1978) remarked that once it was published, "the American college curriculum could not be understood without reference to [the Report]" (p. 67). The 1820s were a decade of change and unease as European ideas of educational and curriculum reform, along with Jacksonian values brought new ideas and debate to colleges even such as Amherst, Yale's intellectual neighbor, which responded by controversially abolishing the requirements of classics for matriculation (Potts, 2010). The report essentially laid out the "idea of a university" for nineteenth century America, with the foundational belief that the primary goal of undergraduate education was to learn to think and teach oneself, and that the classical subjects were the best means to this end. Potts observed that after 1828, the common phrase changed from "liberal arts" to "liberal education," recognizing a new concept of *process* over *subject*.

Although discussions of the Report are often one-dimensional references to an antiquated philosophy of education, more recent scholars have pointed out that it not only advocated mental discipline but in fact welcomed electives in the latter years of college and recognized the value of vocational training and non-classical education, albeit outside the traditional college (Potts, 2010; Rothblatt, 1997). Geiger (2010) also noted that Yale's 1828 catalogue included courses in chemistry, mineralogy, and geology, and the enrollment lists of that time demonstrate that fully one-third of the students at Yale were either resident graduates or were studying medicine, theology, or law beyond the undergraduate curriculum.

Overall, a surprising amount of controversy exists over the significance, meaning, and contemporary impact of the Yale Report. Historians can be organized by their perspective into several groups: those whose views are traditionalist, revisionist, or middle-ground. Traditionalists include Rudy (1960), Winterer (2002), Rudolph (1978), and Veysey (1970); they are characterized by an attitude of modern smugness and the assumption—often unsupported by scholarly reference—that the Report was a last hold-out of all that was antiquated and snobbish in American education. Revisionists, on the other hand, began to explicitly condemn this attitude in the 1970s and include scholars such as Lane (1987), Sloan (1971), Potts (2010), and Hall (2000). These historians protested that the Report demanded a fresh approach, and that when examined without bias, it revealed a balanced, even forward-looking response to the needs of American colleges. Sloan argued that the traditionalist view is overly belligerent: ". . . while it contains some elements of truth, [this interpretation] is anachronistic in the extreme," and has frustrated any accurate attempts "to comprehend the early American educational situation, including the views of the chief spokesmen for reform" (p. 243). Between these opposing views, other historians have written in a more or less balanced vein,

though often brief, acknowledging the main elements of influence the Report wielded and pointing out an idea or two that other scholars may not have included. Examples include Geiger (2010), Brann (1979), Thomas (1962), Hawkins (1972), and Brubacher (1982). These various historical persuasions often assume different facts of the Report's history, and sometimes appear to even overlook the Report's content (e.g., see different origin explanations set forth in Rudolph (1978)), Winterer (2002), and Potts (2010). The famous line from the Report, that liberal arts education should provide the discipline and furniture of the mind, referred to the dual ends of an undergraduate education. Most scholars have recognized that Jeremiah Day, the author of this section of the Report, spent a great deal of ink on the discipline of the mind, but hardly any on the furniture of specific knowledge (Brubacher, 1982; Lane, 1987; Potts, 2010). Hawkins believed that the Report was deliberately taking a middle stance between the paradigms of drill and of data, protesting that too many historians have ignored its concerns of imparting information and building character. The Report's comparatively less vigorous argument for the kinds of learning over the discipline of learning has evoked every reaction from scorn to earnest admiration.

For instance, Lane (1987) considered it vital to the development of liberal educational debate that the Report chose to emphasize mental discipline and to even link it definitively to individual success in life. In this way, Lane—a revisionist scholar—saw the Report as making a valiant effort to update tradition for American democracy by replacing the traditional emphasis on public good and virtue. This intriguing view also posits (with Potts, 2010) that the Report actually planted the seed for the defeat of its cause, because placing the debate in terms of individual utility allowed electives and vocational training advocates to take this argument to its logically ultimate conclusion. Other revisionist and balanced scholars remarked that the Report was a "uniquely rigorous and comprehensive" argument (Casement, 1996, p. 27), whose stress on mental discipline was well accepted by major thinkers of the day (Sloan, 1971). Similarly, it increased and directed the development of contemporary attention to mental training (Potts), and created a spirit of educational values and goals that was influential throughout the century (Brubacher, 1982). To further validate this view, Potts lengthily detailed concrete examples of college speeches, catalogues, authors, and publications heavily influenced by the Report in subsequent years, often to the point where they simply re-phrased parts of the Report according to the context at hand.

Traditionalist historians admitted that the mental discipline approach gave focus and justification to the status quo, but were inclined to sneer about its contemporary reception. Winterer (2002) called the Report "unconvincing" and an instant "fossil of 18th century classicism" that was outdated the day it was published (p. 48). Smith (1990) implied that the Report immediately drew critics who thought its emphasis really just masked a gentlemanly education that could be of little real use.[2]

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[2]There were certainly negative receptions to the Report, but they are not as often specifically referenced in historiography as are positive receptions. One concrete negative response was the

Rudolph's (1978) extensive and largely even-handed treatment of the Report's content and reception breaks down at the end of his analysis when he offered the unsubstantiated and scornful pronouncement that its mental discipline theory is, of course, complete foolishness: "The uneducated democrat in the Connecticut legislature was not impressed; a twentieth century psychologist would be appalled; even a Yale senior at the time might have demurred" (p. 68). How this meshes with his previous statement that the Report captured the general opinions of 1828 is unclear. Nor did he offer any support for the conclusion a few pages later that the authors of the Report were "trapped" in an antique world-view, "blinded" to change, unimaginative, and "class-bound" in their ideas of human worth (p. 75). This tendency among traditionalists caused Hall (2000) to remark that "… chroniclers have more or less unanimously aligned themselves with the emergent new order and, almost without exception, identified those who resisted it with the backward-looking sensibilities that held back educational development while the new nation's economic and political institutions moved relentlessly forward" (p. 196).

The significance of the Report is documented fairly clearly throughout the rest of the nineteenth century, but historians disagree again as to its exact nature and when it ceased to be influential in college curriculum. Perhaps the most popular view is that the Report ceased to have meaningful influence during the 1880s and 1890s, when the wave of reforming presidents, including Eliot, Gilman, and White, brought the elective system to fruition (Brubacher, 1982; Potts, 2010). Sloan (1971) suggested further that the Report's arguments were not adequate answers even to contemporary issues. Although retrospectively this attitude is logical, some historians offer caveats to this conclusion: Potts sounded a positive note by suggesting that the Report so influentially shaped the higher education debate that today mental discipline and liberal education are still inseparable—allowing the Report to live on intellectually even in the works of Eliot, Gilman, et al; Brubacher agreed that the spirit of the Report was influential throughout the century, but noted that social demands and the Morrill Act brought changes that could not fail to impact the curriculum. Most scholars nonetheless have held that the Report's failure to provide adequate answers to changing social expectations ultimately led to a rift between words and actions for the rest of the century; even during the next few decades, liberal undergraduate education was defended and propagated, but nonetheless was gradually left behind as students embraced utilitarian values and skipped straight to professional training, or took college courses that increasingly watered down the classical requirements (Geiger, 2010; Hawkins, 1972; Levine, 1996; Smith, 1990).

New-England Magazine, which in 1833 questioned the Report's view on taste being bestowed by the classics—the editor opined that women seem to have plenty of natural taste without Greek or Latin (Rudolph, 1978).

Influences Abroad: The British Defenders and Their Impact (1850s–1890s)

In creating a complete picture of the ideas of liberal education in the nineteenth century, it is impossible to exclude several brilliant and very popular "Victorian" authors who hailed from across the Pond: John Henry Newman, Matthew Arnold, Thomas Huxley, and John Stuart Mill. These four men interacted with and influenced each other, the burgeoning colleges of the United States, and educational philosophy even as it extends to the present day (Carnochan, 1993; Gillispie, 1950; Kimball, 1986; Pelikan, 1992). Scholars tend to universally acknowledge the continuing influence of Newman and Arnold regarding the ideas of liberal education; Mills and Huxley were more significant in their own time. Still important as defenders of liberal education today, all four stated clearly their opposition to the nineteenth century utilitarian movement in education, but their perspectives and goals were more disparate than some scholars have recognized. Interestingly, Newman and Arnold have suffered some inconsiderate handling by subsequent historians, perhaps due to personalities that are more memorable than their philosophical arguments (e.g., Ker, 1990; Pelikan, 1992).

The situation to which these luminaries were responding was the looming identity crisis of British education. Contemporary Oxbridge education was widely considered to be "watered-down" in curriculum and focused on socialization (Garland, 1996, p. 267; Gillispie, 1950), and by mid-century the rising influence of utilitarianism and industrialization had sparked a fierce debate over the place of science and religion, as well as the aims of education as a whole (Carnochan, 1993). As British colleges were established to explore professional and technical training, these writers brilliantly defended the tradition of liberal education in works broadly influential both at home and in America, where educational models were often deliberately borrowed from Europe (Carnochan, 1993; Kliebard, 1988; Meiklejohn, 1942; Pierson, 1950; Rothblatt, 1976).

Newman and Arnold, along with Mill and Huxley, thus served as beacons of clarity in a time when educational debate on both sides of the Atlantic often lacked a clear definition of the nature or goals of liberal education (Rothblatt, 1976). Newman's philosophic ponderings were deeply rooted in Christian thought and dismissed the Platonic assumption that knowledge equals virtue, while Arnold's cultural polemic was simple and stoutly upheld the perfectibility of man (Cahill, 1995; Carnochan, 1993; Jacoby, 1994; Ker, 1990). These different perspectives were imbibed and then evolved in the American sphere; though Carnochan identified Newman and Arnold as the muses for those opposing the elective and research movement in America, their ideas in reality strongly influenced thinkers on both sides of the debate. As Gillispie (1950) noted, the educational debate by the mid-nineteenth century was marked by a new level of confusion and conflict, as radical and conservative thinkers no longer agreed on whether higher education was primarily for practical application or for the cultivation of the mind. Thus, tracing the varying definitions of liberal education which these British authors promulgated reveals many of the roots of conflict in educational debate, whether in the nineteenth or twenty-first century.

John Henry Newman was certainly the most complex of these thinkers, and though his ideas sometimes lacked a final cohesiveness and suffered from hyperbolic style, *The Idea of a University* is indisputably a hallmark treatise of liberal education (Garland, 1996; Ker, 1990; Pelikan, 1992). Turner (1996) wryly wrote that Newman's ideas for public discourse in the university have never been equaled—they "stand like Banquo's ghost at the feast of the modern university community" (p. 293). The work established a vocabulary and framework for future debates, as well as offered a vision of religious scholarship that has been used (and misused) ever since. Despite this powerful influence, scholarly misunderstanding and a timidity to engage deeply with Newman's ideas have obscured many of his points in the modern educational arena (Marsden, 1996; Turner, 1996).

One of these foundational ideas which influenced contemporary educational thinkers, but today is often misunderstood both in their arguments and Newman's, is the concept of theology in education. Newman scholars usually agree that, as an orthodox Christian classicist, he believed religious truth to provide the essential world-view that could alone unify the diverse knowledge taught in a university (Pelikan, 1992; Turner, 1996). Marsden (1996) maintained that Newman's insistence on theology in learning was integral to his definition of liberal education; without it, it is impossible to "understand essential questions about the universe . . . [scholars] are attempting to understand the creation without any knowledge of the creator" (p. 305). This worldview of how ultimate truth is found (outside of ourselves) and used (to unify knowledge) sounds quaint to modern ears, leading many historians to berate not only Newman but others including Porter, McCosh, and even Gilman for not holding the twentieth century presupposition that truth can never be positively known and must be discovered with free, individual inquiry (e.g., Castro-Klaren, 1996; Rudolph, 1978; Veysey, 1970).

Research, the sciences, and vocational education are other significant themes of Newman's book that influenced contemporary thinkers. Newman declared on the first page of his work that research has no place in a university, only teaching. However, scholars debate exactly what Newman meant by "research." Pelikan (1992) wrote, "Ian Ker has quite rightly pointed out in extenuation that Newman not only planned research in science, technology, archeology, and medicine . . . . [B]ut was explicit about the research duties of university professors" (p. 78). He admits, however, that the problem is that Newman never clearly connected this duty of scholarly exploration with the teaching and diffusion of that knowledge. For this reason, most scholars agree with simpler conclusions that Newman saw no place for research in the university, and even extend that to more tenuous implications that he was uninterested in new knowledge (Brann, 1979; Castro-Klaren, 1996; Garland, 1996; Levine, 1978; Turner, 1996). Again, this complicates the dichotomous understanding of nineteenth century debate as being between research on the one side and liberal arts on the other.

The role of "the sciences" in Newman's *Idea* is also a tricky subject, complicated by the fact that so much has changed in the nearly two centuries since *Idea* was penned. At the time, "science" meant a specific branch of learning—e.g., the science of grammar; later the word meaning was narrowed to connote the study

of the material universe and phenomena only (Pelikan, 1992). This point is not often recognized, and scholars generally treat Newman's comments on science as relating only to the natural world, which obscures his original argument and confuses the historiographical literature (Castro-Klaren, 1996; Ker, 1990; Pelikan, 1992; Turner, 1996).[3] Levine (1978) perhaps found an optimal balance in his explanation that Newman believed "acquaintance with the full circle of knowledge is a requisite for a liberal education," but valued literature above the sciences for training the mind because the material has had longer to be evaluated and proved in worth. As Rothblatt (1997) astutely concluded, "a number of critical issues have become entangled" (Kimball, 1986, p. 196n), both in understanding Newman and in understanding what nineteenth century thinkers actually meant when they debated the role of "the sciences."

Vocational learning in Newman's philosophy, finally, is weakly expounded—a failure which leaves a glaring hole in his formative defense of liberal education. Liberal learning is practical for Newman, Jacoby (1994) explained, because it can be used in every vocation and activity; at the same time, it must never be burdened in advance with the expectation of utility. This concept sounds clear enough, but several scholars point out that Newman really failed to clearly flesh out this idea. For instance, Pelikan (1992) demonstrated Newman's urgent desire to show that utilitarianism threatens real utility (because "utility" changes with each generation), and argued that Newman saw a "reasonable connection" between the university's duties and the learned professions in the now familiar process of liberal education followed by specific training; however, the balance of this was never really explained adequately. This issue of professional training "more than any other, raises fundamental and troubling questions about his principle" of knowledge as its own end, which "is at best ambiguous" "both historically and intellectually" (pp. 102–103). Turner (1996) found Newman's discussion on professional education similarly disappointing, pointing out that in this section Newman mostly quoted already published material on the subject and "joust[ed] somewhat weakly with his own formulation of utilitarianism" (p. 273). Thus a convincing explanation for the relationship between liberal and professional education was effectively deferred to later thinkers, weakening the power of these ideas in the new age of confusion to which Gillispie (1950) referred.

Despite these more vague aspects of the *Idea*, Newman clearly presented a compelling case for liberal education that does not always fit into the preconceived notions of Newman's contemporary or modern critics (Ker, 1990). These concepts have been fundamental to the liberal arts debate ever since their publication, and

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[3]Pelikan (1992) seeks to clarify that Newman did not mean by this to say that every possible subject in the world could be included in study. He cites Newman's explanation from the last of the Discourses: "...all branches of knowledge are, at least implicitly, the subject-matter of its teaching." Jacoby concludes, "In other words, a university must be in principle hospitable and in practice not hostile to any kind of knowledge" (p. 23). Ker (1990) and Pelikan (1992) differentiate between Newman's views on the sciences as a discipline and the "mechanical arts," which include the study of new facts and discoveries for practical use; these distinctions are too often lost.

to understand them correctly scholars would be wise to note Jacoby's (1994) point that "the history of education cannot be condensed into a battle between liberal and utilitarian education or classical and practical schooling ... [these] categories are too broad, and their meaning does not remain constant" (p. 17). Drawing such lines obscures many subtle but significant points of Newman and therefore of the nineteenth century educational debate.

Matthew Arnold, in contrast to Newman, had relatively simple ideas which still ring familiar to modern ears because he defined liberal education as reading and thinking "the best that has been thought and said in the world" (Arnold, 1969, p. 4). His rationale for education was virtue for society via the individual—a view echoed in the slightly later writings of Charles Eliot (Carnochan, 1993). Although Arnold's definition of culture has endured and been alluded to in reference to liberal education almost ad nauseum, his writings were concentrated on secondary rather than higher education, and he never gave a coherent prescription for how his vision for "the best" should work (Meiklejohn, 1942). Arnold's influence in America was notable in several ways: Carnochan argued that his ideas resonated especially well with the educational reformers, who hybridized this esoteric goal of culture with the elective, evolutionary model pioneered in the new university structures of the late nineteenth century. This is slightly ironic, as Arnold was passionate about defending liberal arts against utility, based on what Jacoby (1994) described as a "profound distaste for industrial society" and the machine-like vision of mankind that the society built upon (p. 12). Rothblatt (1976) concluded that Arnold, through his immortal definition of culture, integrally impacted the nineteenth century effort to defend liberal education by repackaging some of the ideas of the previous century into a new, socially resonant expression that drew upon the same reservoir of humanism and welfare that the proponents of utility used.

However, Arnold's repackaging campaign left a number of important issues very poorly explained, most notably how the sciences and practical study fit into the concept of liberal education as cultural refinement. Certainly he frowned on the emphasis of measuring achievement, whether with school grades or professional training, but how far this idea extended was unclear perhaps even to Arnold himself (Gillispie, 1950). Culture should be free of utility, he believed, but it should also seek to understand life as a whole and to address how industry can be joined with beauty and knowledge (Smith & Summerfield, 1969; Jacoby, 1994; Rothblatt, in Westbury and Purves, 1988). Kliebard (1988) explained that Arnold ultimately was more interested in the humane letters than in facts about the natural world, and that he thus rejected the idea of making scientific training the main part of study for most students. Meiklejohn (1942) made the intriguing statement that Arnold thought that the sciences themselves were good but doubted that scientists could teach them without destroying the broader context of liberal studies; he concluded, however, with a warning that Arnold was a commentator, not a reformer—so it is reasonable to conclude that the details of how science and culture fit together is ultimately not a question that he was perhaps prepared to fully answer. These irregularities on vital educational questions ultimately meant that while Arnold provided influential ideas about culture, his writings could easily be reduced to empty catch-phrases in educational debate.

Arnold's contemporaries John Stuart Mill and Thomas Huxley also had profound influence on the debate for liberal education, but their most lasting contributions are a few thought-provoking quotes, rather than serving as an ideological spearhead like Arnold or providing a philosophical framework like Newman. These British authors stood against utility in education, which brings them under the umbrella of "defenders," but some scholars point out that in fact they did not always agree with other defenders any more than Newman and Arnold actually agreed about liberal education in many details. Mill believed that liberal education should teach men to judge what is right and wrong (which is Newman's goal but Arnold's idea of morality via learning), and was fond of pointing out the utter lack of great thinkers that Oxbridge had produced in the last century. His famous declaration that "men are men before they are lawyers" is preceded by the argument that universities were not created to teach knowledge specific enough to earn a living (Jacoby, 1994, p. 17). Scholars otherwise rarely mention Mill, merely placing him among the array of Victorian British writers who believed that the education crisis should be solved by other means than introducing vocational instruction.

Huxley was a more complex figure, remembered chiefly for his tenacious defense of the sciences—which he defiantly brought into the fold of liberal education by use of the same traditional arguments of mental discipline, much as some of the American educators did (Barzun, 2000; Kliebard, 1988). Indeed, Huxley's invitation to give the inauguration address at the dedication of Johns Hopkins University indicates not only such an allegiance but a definite affinity with American educational ideals of the time (Kimball, 1986). Huxley's arguments were passionate to the point of occasional exaggeration in support of science, declaring that the goal of education was "to acquaint the student with the laws of nature" even to the neglect of scientific interpretation and analysis (Kliebard, 1988; Martin, 1926, p. 264). However, he was quite traditional in his insistence that liberal education was for "the development of the intellect," not for a means to another end, such as producing better workers (Kliebard, p. 37). Rothblatt (1976) posited that Huxley's definition of liberal education, like Arnold's, reconfigured traditional elements to make the liberal arts meaningful for an industrial society.

Interestingly, Kimball (1986) explained how over-simplification of Huxley's arguments, along with Arnold's, was present from the moment they delivered their addresses. In 1880, Huxley attacked Arnold's definition of culture by arguing that truth and the advancement of knowledge depends on use of the scientific method, necessitating an integral place for the natural sciences in education. Arnold responded by reiterating the ability of classical texts to produce character and culture. Kimball pointed out that each misunderstood the other: both admired the classics or the sciences, respectively, but wanted to *emphasize* one above the other (not exclude the other altogether). Similarly, Kimball discussed how Huxley viewed the "criticism of life" to mean the evaluation and potential rejection of traditional knowledge via critical reasoning, whereas Arnold employed the same term to represent the process of using traditional values to evaluate everything else in the world (see Martin, 1926, p. 268). These distinctions illustrate a larger point:

despite the fact that these educational philosophers are generally classified together as "defenders" of liberal education, they actually were more united by a common enemy (utility and vocational training) than by a generally accepted definition of what liberal education consisted of, or even for what purpose it existed.

The Big Seven: American College Presidents in the Age of Reform (1840–1910)

As the nineteenth century progressed, subject specialization and increasingly complex fields of study, as well as the expansion of natural science and the implications of Darwinism, made the goal of fitting "all" knowledge into one course of study—or even under one college roof—seem impossible (Schmidt, 1953). Although a number of scholars have pointed out the surreptitious false dichotomy of *classics* versus *sciences*—a more accurate distinction is classics versus vocationalism (Guralnick, 1974)—avant-garde American college presidents during this time are often presented as individuals who updated the "traditional" curriculum with more "scientific" subjects (Herbst, 1962; Lee, 2008; Veysey, 1970). Broadly speaking, however, this period marks a time when American universities came into their own, and liberal education was given "an evolutionary and possibly relativistic twist" (Veysey, p. 79) by the larger-than-life university presidents. These presidential administrators are most famously represented by Francis Wayland, Henry Tappan, Charles Eliot, James McCosh, Noah Porter, Andrew D. White, Daniel C. Gilman, and William R. Harper.

Although two opposing sides emerged—McCosh and Porter on the traditional defense, and the rest as reformers—no two had the exact same approach to liberal education within their own institutions, nor did they even all agree on what exactly liberal education is. Scholars nonetheless see their influence as achieving a singular end—namely, changing the American conception of the liberal arts' place in higher education, both practically and theoretically (Mahoney & Winterer, 2002; Rudolph, 1978). The specific nature and implications of those changes is, however, a controversial subject.

The earliest reformers usually discussed by historians are Francis Wayland and Henry Tappan, presidents at Brown and Michigan, respectively, during the 1840–1850s. These men believed that the liberal arts curriculum needed to respond to expanding fields of knowledge; Veysey (1970) wrote that Wayland instituted a more flexible, departmentalized curriculum but retained the traditional view of science as a deductive subject not at odds with the traditional liberal education, while Tappan met with spectacular failure in his attempt to imitate some features of German research universities. Thomas (1962) was one of the few scholars who examined these two in more detail, as other historians have tended to mention their names as heroic reformers too visionary for their own time, without discussing their ideas in much specificity. Thomas represented Tappan as responding to the new fields of

learning by advocating the creation of a separate college and university system for liberal education prior to specialization. Both parts would aim at developing the student's mind and abilities via an integration of subjects. Wayland, on the other hand, he described as responding to the new learning with the idea of keeping liberal education in the college while extending the years of study or reducing subjects to achieve more practical education; Wayland also was an early advocate for professional training. Rudolph (1978) made this point even stronger, arguing that Wayland viewed the mental discipline approach with suspicion and tried to add courses in agricultural chemistry and civil engineering to meet the country's immediate needs. Tappan and Wayland were the vanguard for inevitable changes, Thomas (1962) concluded: "Within the decade after 1850 the conflict between the defenders of the old classical conception of liberal education and the protagonists of reform was, for all practical purposes, dead. The arguments continued but defenders of the old order were fighting for a lost cause" (p. 24).

The three reformers most commonly discussed are contemporaries and friends White, Gilman, and Eliot. Although all three consciously identified with education reform and the introduction of professional training and utility, their actual conceptions of liberal education and its place in the American university can be varied and surprisingly traditional. Veysey (1970) argued that Eliot and his fellow reformers "were in conscious revolt against the liberal arts," but added interestingly that when they actually spoke or wrote, their words were focused on moral themes and social uplift, which ultimately brought them to "more closely [resemble] the cultural humanists than ... the pure scientists" (p. 79). Veysey also pointed out that a philosophy of utility appeals more to a man of action than a deep thinker, which certainly rings true in the case of Gilman, White, and Eliot, and helps explain why often their "philosophy of education" is less than clear.

Andrew White, the first of these to become president of an institution (Veysey, 1970), approached liberal education somewhat ambiguously, and different historians highlight different aspects of this. White always lambasted his undergraduate experience at Geneva College as dull and useless (Schmidt, 1953), yet stated that he wanted Cornell to be "a true *liberal* university" (Hawkins, 1971, p. 354). Veysey (1970) concluded that White was a complex figure, who was not a researcher or even initially enthusiastic about sciences; travel, food, and fine art were his life-long passions. Veysey highlighted but did not answer the question of why White led the charge for technical training when he himself thought that scientific study and culture (the aesthetic) should be balanced. Winterer (2002) and Rudolph (1978) further described White as rejecting the concept of the traditional college in a common sense manner; studying the classics could be an important "means of culture" (Winterer, 2002, p. 122), but the traditional liberal arts would only be part of a more extensive curriculum. Thus the classical curriculum was valuable because it provided good general education and should be studied by "those who have time and taste for them," but if students were forced to study it against their desire it would actually damage what White referred to as their "mental power" (Rudolph, p. 120).

White's biographer Altshuler (1979) perhaps best demonstrated White's view on liberal education by highlighting the dichotomy: White wanted the agricultural and industrial students at Cornell to become respected leaders, but in order to do so they had to become cultured men—something that only a liberal education could do. He believed the two could not be separated and "insisted on giving all students liberal arts training" (p. 73). Thus Altshuler concluded that White tried to take a middle position and not fully abandon the ideals of liberal education, but "paradoxically, because White's rhetoric banished the ghost of tradition, the university became a rallying point for reformers far more willing than he to depart radically from the past" (Veysey, 1970, p. 85). This idea was echoed somewhat by Veysey, who also concluded that White eventually came to believe that a student's personal growth was a significant aim of education after all.

For White (1873) this perspective mirrored the cultured citizen rationale of liberal education, and he insisted that college women—at Cornell since 1870—should receive "the same moral, mental and esthetical" advancement as their fellow male students (p. 222). "In the main," he argued, "the best studies for developing the most worthy culture in young women are identical with those required of young men" (p. 223). White's view lent support for those women's colleges (e.g., Mount Holyoke, Smith, Vassar, Wellesley, Wells) that were building 4-year curriculums and reflected an argument by Vassar College president John Raymond (1873): "The intellectual and moral nature of woman is, generically, the same with that of man, and if she is to be allowed the benefits of liberal training, she will have to get them on substantially the same conditions with others" (p. 34).

Daniel Coit Gilman, the founding president of Johns Hopkins, has been lauded for his role in establishing the first true graduate school, in spite of mild discouragement from Eliot and White. Veysey (1970) argued that although Gilman was identified with Eliot and White in the utilitarian model of education, he was more conservative than either of them, especially in his early career. Gilman gave a speech in the 1870s in which he spoke of the value of all branches of learning and the danger of letting the new excitement over science diminish the study of humane letters; in 1886 he spoke specifically of mental disciple and character building. His speeches, Veysey scoffed, "were filled with the bland moral adjectives appropriate to gentlemen of the mid-nineteenth century" (p. 161). He even mirrored some of Newman's ideas about Christianity—not just theism or any religion—being the heart of a university. Thus, Gilman supported liberal education with all of its traditional rhetoric: he spoke in 1878 of the university's "first care" being excellent instruction in science, math, and language, but hoped that Johns Hopkins could look beyond that to advanced study, including professional training and research (Flexner, 1946, p. 55). Gilman's biographer Franklin (1910) concluded that Gilman saw merit in both liberal education and scientific training, and that he advocated both from an early stage. Gilman raised the standards for scholarship in both areas through his work at Johns Hopkins and helped establish the curricular "group system" (Flexner, 1946; Levine, 1978). Franklin saw a greater break between Gilman and the past than Veysey, however, as he pointed out that Gilman spoke of

the "restricted notions of the past" in "college government," from which he, Eliot, Porter, and White were breaking away, but to which they had not yet found an acceptable alternative (p. 330).

Overall, then, Gilman promoted research (though he disliked the term) and practical studies, while retaining some very traditional ideas about liberal education and objecting to a strictly elective system (Hawkins, 1966; Rudolph, 1978; Veysey, 1970). He sought to correct the fledgling misconception that the classical and scientific were pitted against each other, pointing out that the correct differentiation was classical and vocational training (Guralnick, 1974). Veysey actually implied that Johns Hopkins (which fit into the general trend of specialization and research) and not Gilman was influential on the reform and utility movement—"no statements of purpose uttered by a university president had less to do with the actual nature of the institution he superintended than did those of Daniel Coit Gilman," he remarked (p. 161).

Charles W. Eliot, the gargantuan figure that looms over the American higher education scene from the mid-nineteenth century until its turn, has been discussed more often than any other single educator of his time. Several historians point out that this is largely because Eliot remained at the helm of the oldest American university for 40 years, a circumstance which allowed his influence to permeate and define the age more than any great originality on his part (e.g., Carnochan, 1993; Pierson, 1950; Rudolph, 1977). Recent scholars have balanced their acknowledgement of Eliot's influence with a candid portrayal of his failings and limitations (Carnochan, 1993; Hawkins, 1972; Thomas, 1962; Veysey, 1970); in contrast, those writing closer to Eliot's death can have a sycophantic style (e.g., Neilson, 1926).

Eliot's view of liberal education encompassed whole-hearted belief in its value, but conceived of that value primarily in terms of benefiting society through individual growth and subsequent contribution. Thus his "evolutionary twist" on the idea allowed—even depended upon—the concept of electives, as modern American society depended on the new technologies (Veysey, 1970, p. 79). This interesting melding of liberal education concepts makes it difficult to understand Eliot's perspective without a comprehensive examination of his speeches and writings, since different quotes seem to indicate opposing ideas.

First, Eliot's stance against liberal education as a traditional discipline, with classical subjects and primarily for the mind and character, is clear. Veysey (1970) argued that Eliot cannot be classified as a humanitarian, since he was too utilitarian to accept art or even knowledge for its own sake. Mahoney and Winterer (2002) showed that Eliot believed English literature vastly surpassed Greek literature, and the same sentiment applied to medieval learning: Eliot once stood to make a spontaneous declaration following a faculty member's reading of a paper on medieval universities, saying, "The American university has nothing to learn from medieval universities, nor yet from those still in the medieval period" (Veysey, p. 94). The idea that the classics were needed to make a gentleman was "vulgar" and despicable to Eliot (Schmidt, 1953, p. 33), and he worked diligently to drop the Greek requirement for acceptance to Harvard (Rudolph, 1978), as he believed that the classics had no advantage for training the mind over scientific courses

(Winterer, 2002). Studies without direct utility (music was a personal favorite) were still worthy subjects, but not imperative—Eliot termed them "culture courses" and "favored them as an attractive appendage," wrote Hawkins (1972) in his stellar biography of Eliot (p. 202).

On the other hand, Eliot embraced the idea of liberal education as a means of bringing higher education into a vibrant, supporting role in American society. Russell (1957) in fact argued that all of Eliot's urgings for reform were based on the idea that liberal education could be beneficially expanded; he saw liberal education as "that quality in any curriculum which develops superior insight, or the capacity to knit together extensive realms of knowledge" (p. 434). Thomas (1962) agreed with this interpretation, demonstrating that Eliot wanted all knowledge taught, both practical and classical, and in fact defined general education as part of liberal education. By this logic, electives are themselves liberal education. Thomas added the critique that Eliot's ideas suffered from flawed arguments (as well as a lack of sound judgment), and noted that Eliot never really defined the difference between liberal and professional education, nor what balance there ought to be between them. The new subjects were essential for Eliot, Winterer (2002) remarks, because without them students would not be prepared to work in a modern society and thus would fail to contribute to it.

Why was the idea of contributing to society so important? Hawkins' (1972) exemplary summary argued that Eliot defended all of the courses at Harvard as "liberal," but his definition was not Arnold's; instead, his goal was "an open mind and broad sympathies" (p. 285). Eliot may have spoken the rhetoric of "mental discipline," but he did not consider it the primary purpose of education; he also broadened the definition to include a liberal *attitude* that could be applied to every study or profession. Thus, there was indeed a focus on the individual in terms of choosing subjects (Thomas, 1962), but the overall goal of a liberal education was to make that individual able to understand the world (so dramatically changing and expanding in the nineteenth century), find a place for service, and discover a passion for truth. "For justification, he proposed that his plan was liberal, for it met the new conditions of life," Russell (1957) concluded (p. 438). This would clarify Thomas' dilemma, for Eliot would not be likely to discuss the balance between liberal and professional studies if he viewed both as contributing equally well to the end of forming a "liberal" person who could contribute creatively to the modern world.

In hindsight, scholars have noted that this rather radical interpretation has had a number of effects upon liberal education. In negative terms, Rudolph (1977) squarely placed blame for the fragmentation of learning upon the elective system that Eliot so influentially advocated. Dropping Greek requirements and ending the classical tradition of liberal education left jagged gaps between liberal learning and research models which severely hurt humane learning in the colleges, where the only real "depository of liberal values and humane learning" in American society remained, Rudolph argued, leaving it "crippled and confused" (p. 207). Pierson (1950) called Eliot's push for electives a "two-edged sword" that ultimately caused a "great educational war" (pp. 88–89) between new university ideals and the unity of the colleges. Regardless of sincerity, Eliot probably overestimated the ability

of the elective system to provide a liberal education, and such attempts could not be sustained anyway due to a lack of foundational education (Carnochan, 1993; Russell, 1957).

More positively, Hawkins (1972) made the case that Eliot actually "strengthened" the liberal arts college because he put his influence behind requiring a bachelor's degree for admission to professional schools (p. 202). In any case, it seems clear that Eliot expanded the definition of liberal education in a way that kept it prominently in the educational reform debate (Kliebard, 1988; Russell, 1957). How lasting and widespread this influence has been is less certain; there was a definite reaction against the elective system at the turn of the twentieth century, when Eliot was succeeded at Harvard by Abbot Lawrence Lowell (Hawkins, 1971). Interestingly, Veysey (1970) also suggested that Eliot's real influence was less than his personality made it appear; in reality, the West Coast schools (which pressed academic utilitarianism) and the opposite trend set by Yale and Princeton towards a reconceived liberal arts education were more pervasive, partly because Harvard was too unique geographically and demographically to be truly imitated. Although the elective system as it was at Harvard was never again attempted, it is arguable that after Eliot it was no longer viable on a broad scale to implement fixed curriculum for the goal of mental discipline (Carnochan, 1993; Rudolph, 1978).

McCosh and Porter, defending liberal education as it had been conceived in previous generations, are generally relegated by modern scholars to a dusty shelf of intransigence and ultimate insignificance, helpless against the tide of electives and utility. Both were committed Christians who believed that religious truth should be integrated into the life and worldview of the college (Veysey, 1970), a view which reflected the ideas of Newman strongly. McCosh's autobiography was published shortly after his death (Sloane, 1897), but other sources, especially scholarly ones, are rarer. Veysey discussed McCosh's views on liberal education in terms of a focus on developing mental and moral faculties; McCosh saw the training of the mind as the ultimate end of education, but interestingly did not specify exactly what subjects that should include.

However, Veysey concludes that McCosh failed to have a real influence over the educational debate because of his uncontrolled and violent temper; this dismissal is surprisingly devoid of any further evidence. Rudolph (1978) similarly finds McCosh to have been ultimately insignificant due to his "intransigence and temper," adding that he did not trust humans in general and students in particular and tried to "keep the future at bay" (pp. 173, 23). McCosh's famous 1885 debate with Eliot is viewed in various ways. Rudolph essentially believed that McCosh's sarcastic arguments were popular with those educated in the old order but related to a "fading" past already being overtaken by Eliot and the utility movement (p. 195). On the other hand, Carnochan (1993) agreed that the clash was ultimately one of world-view, but argued that McCosh ultimately had the last word because his definition of a university was one of scholarly community more than physical classrooms or skill sets. However, these discussions do not explore the influence McCosh has had on liberal education through his pioneering defense of the distribution system, which he introduced at Princeton—an omission which leaves a regrettable historiographical gap.

Noah Porter, like McCosh, viewed liberal education as learning distilled through the study of the classics, with the goal of developing and disciplining the mind. He in fact defended the classics in an influential book, *The American Colleges and the American Public*, advocating that liberal education is essential for a civilization to survive (Bledstein, 1974; Veysey, 1970). In contrast to Eliot's conception of liberal education, Porter's vision was focused on the ends of education—an organic, holistic development of the student that would be damaged by adding electives too soon in the curriculum (certainly before the junior year of college) (Bledstein). Since he believed that some truths can be known for certain, it was only logical that students should be taught such truths in their studies, acquiring both a worldview and a disciplined mind to serve as tools for enquiring after further knowledge (Veysey). Like McCosh, Porter supported graduate study, but believed its proper realm lay outside the college proper (Herbst, 1962). It is on the basis of this worldview of Christian truth and classical learning that scholars judge this "earnest" effort from Porter and his pious colleagues to have ultimately failed—electives and the sciences simply could not be stopped—as well perhaps because of personal failings of "weakness" in administrative leadership (Bledstein, 1974; Veysey, 1970, pp. 49, 52). However, some of this criticism is based fundamentally upon the idea of science versus traditional liberal arts, a position which Guralnick (1974) and Axtell (1971) challenge on the basis of oversimplification and anachronistic classification.[4]

The "new" class of administrators of the 1890s generally continued the trends of graduate education and specialization, but they were relatively uninfluenced by abstract ideas of education (Veysey, 1970, p. 369). William Rainey Harper was the paragon of this last wave of utilitarian development, but played no real part in educational debates (Veysey). Instead, he was significant in higher education because he shaped the "outlook and expectations" for his contemporaries and promoted the division of upper and lower college classes (Rudolph, 1962, p. 349; Thomas, 1962). Harper's efforts to promote a standardization process for education in which universities set the standards for colleges and academies were, in the opinions of some, distinctly negative for liberal learning in America. Irving Babbitt irately declared that Harper in doing this neglected "the real aim of the small college that survives, namely, to teach a limited number of standard subjects vivified and informed by the spirit of liberal culture" (Hawkins, 1971, p. 359). The nineteenth century therefore ended on a note of defense for liberal education, but also featured a backlash against the pure elective system and the mid-century enthusiasm for utility that set the stage for the complex educational arena of the early twentieth century.

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[4]Veysey (1970) engaged in such simplification to some degree, but he did offer a fuller and more interesting explanation for the collapse of mental discipline in American liberal education—a changing social mindset—that makes his argument more compelling, if not as entirely lucid as it could be.

Adaptations and Innovations in a New Century

The story of liberal education in the first half of the twentieth century, particularly between the wars, is remarkable for themes of curricular experimentation, forceful personalities, and at least some real institutional change. Scholars who have surveyed the ideas and activities of this period include not only historians digging for archival gems, but also educators of the time publishing essays and memoirs, biographers detailing lives of leaders and thinkers, and institutional analysts studying new programs and new colleges. Big names abound: Alexander Meiklejohn, Robert Maynard Hutchins, John Dewey, John Erskine, W.E.B. Du Bois, Alfred North Whitehead, Arthur Lovejoy, Harold Taylor, Frank Aydelotte, Scott Buchanan, and many others. Striking evidence of the cult of personality recounted in later histories is found in the opening line of Edward Shils', 1990 portrayal of the start of the general education program at the undergraduate College of the University of Chicago: "Robert Maynard Hutchins was the most handsome man I have ever seen, a man of natural elegance in bearing and manners" (p. 211).

Testimony to the flurry of curricular activity just after WWI occurred when editors of *The New Republic* found it necessary to publish a special supplement, "The American College and Its Curriculum," in 1922. In it, notable college presidents like Alexander Meiklejohn of Amherst and H.B. Chase of the University of North Carolina joined well-known scholars like John Erskine (Columbia), Stuart Sherman (U. of Illinois), and Clifford Moore (Harvard) in describing distribution plans, survey courses, great books, and other recent routes to liberal education on their campuses. Notable innovations in new, restyled, or revived liberal education occurred at sites ranging from venerable institutions like Columbia University and the University of Chicago to small campuses like Reed College in Oregon, Bennington College in Vermont, and Black Mountain College in North Carolina. Together, they forged an impressive array of endeavors aimed at interdisciplinary coherence, common learning, general knowledge, intellectual and social community, and/or personal and interpersonal understandings. As reported in the 1939 *Thirty-Eighth Yearbook of the National Society for the Study of Education* (Whipple, Ed.), distinctive endeavors toward liberal learning could be found at new or retooled free-standing colleges (e.g., St. John's, Sarah Lawrence, Bard); liberal undergraduate colleges within large universities (e.g., colleges at the University of Chicago, the University of Wisconsin, and the University of Minnesota); or general education programs within liberal arts colleges (e.g., programs at Knox, Reed, and Colgate).

Rudolph (1962) hailed the early twentieth century as a time of "new respect" for general education as "the mark of a gentleman and a passport to human understanding" (p. 456). Miller's (1988) analysis observed two distinct approaches to liberal, or general, education during this period. The instrumental approach, concerned with individual welfare toward democratic societal goals, was grounded in the pragmatic philosophy of John Dewey and was practiced at progressive colleges like Bennington, Sarah Lawrence, and the General College of the University of Minnesota. The humanistic approach split into two subtypes. One of those Miller

labeled "traditional or academic humanism" (p. 35), as preferred by Robert Maynard Hutchins with his regard for common learning through reading and philosophical discussion. The other, "a naturalist approach" (p. 53), could be found in Columbia's contemporary civilization core courses and in Alexander Meiklejohn's College at the University of Wisconsin centered on studies in great books, physical sciences, and contemporary communities.

To Michael R. Harris (1970) much about early twentieth century efforts related to liberal education smacked of somewhat predictable reactions to new directions in late nineteenth century higher education. He viewed those new directions as sweeping changes in educational purposes from advancement for individuals toward usefulness to society—an "operational utility" that found practice in approaches "which are intended to develop the ability of students to play useful roles in society and which will result in the production and communication of useful knowledge" (p. 13). The rising tide of utilitarianism soon gathered vocal critics who surfaced at the forefront of discourse and/or practice concerning ways to save liberal education. Including Thorstein Veblen, Irving Babbitt, Alexander Meiklejohn, Abraham Flexner, and Robert Maynard Hutchins, they garnered extensive public attention; but, they eventually had to accommodate the growing swell of utility in education.

Accommodation, however, might seem understated to David O. Levine (1986) who concluded that by mid-century "practical and pecuniary considerations emerged triumphant in higher education, as elsewhere in American life," and most institutions chose to respond to "modern economic and social pressures rather than to an academic ideal" (p. 90). Yet Levine was decidedly unfavorable to Thorstein Veblen's (1918) suggested solution of separating professional and technical schools from universities. Instead, he highlighted worthy innovations throughout the interwar period, particularly in the application of scientific methods to the social sciences that attempted "to establish a curriculum that would satisfy both those who sought to preserve a cultural orientation and those who welcomed a more utilitarian emphasis" (p. 92).

Similar questions occurred about curriculum directions for black students, especially on historically black campuses. Those institutions founded for free blacks before the Civil War and by religious missionary organizations immediately after reflected wide-ranging diversity in curriculum and educational aims. The 1867 charter of Howard University, for example, stipulated "a University for the education of youth in the liberal arts and sciences" (Logan, 1969, p. 21). Soon, however, "the pervasive influence of industrial philanthropy" pushed the historically black colleges and universities to emphasize manual and vocational training (Gasman, 2007, p. 14). Efforts at universities like Fisk and Howard that attempted to resist strict adherence to donor curriculum preferences echoed the ongoing differences articulated by Booker T. Washington and W.E.B. Du Bois (Gasman, 2007; Roebuck & Murty, 1993; Willie, Reddick, & Brown, 2006). In the earliest years of the twentieth century, the vast differences spanning institutions from Atlanta University to Tuskegee Normal and Industrial Institute indicated pockets of support for both the call for a liberal arts foundation for future black leaders and the insistence

on work-related training. Yet, Gasman noted a change beginning in 1915—led by shifting industrial philanthropist attitudes—toward "attention to those black colleges that emphasized the liberal arts" (p. 14). The black colleges were then poised to take part in the welcoming atmosphere for liberal education that occurred between the wars.

Surveys, Cores, and Common Learning

Typically, accounts of early twentieth century endeavors to retain some elements of liberal education in practice have noted the introduction of survey courses, especially those required of all students at a certain level. Most credit Alexander Meiklejohn, then president of Amherst College, with the first survey course experiment in 1914 (e.g., Brubacher & Rudy, 1968; Levine, 1986; Rudolph, 1977). That course, "Social and Economic Institutions," provided all freshmen a general orientation that could undergird more specialized social science courses. Rudolph (1977) noted that although some earlier freshman orientation courses existed, only one, instituted at the University of Rochester in 1911, included broad contemporary social issues.

In a comprehensive account that reviewed general education efforts at 18 colleges, Russell Thomas (1962) described the initiation of such survey courses as "the significant first step in curricular reform" (p. 69) during a period that he viewed as a collective flight from higher education's previous overreliance on the elective system. Historical treatments of survey courses generally have credited the curriculum element of the World War I Students' Army Training Corps (SATC) program as the initial model, along with its speedy metamorphosis at Columbia University into a peacetime survey course. Quickly adopted by other campuses, comprehensive survey courses then took on "the character of a movement" (Rudolph, 1977, p. 237).

Timothy Cross's detailed work about the survey headwaters at Columbia University, *An Oasis of Order: The Core Curriculum at Columbia* (1995), reminds readers that changes in Columbia's curriculum, as well as its student body, began well before World War I. Required Greek and Latin were out, while electives and middle class students were in. Specialization and fragmentation were on the rise, as was the usual hand-wringing about what could be done to counteract them. The winds began to shift, however, with the SATC course "War Issues," developed for students in Army training on campus in 1917 and 1918 before heading for Europe. To the amazement of contemporary academics, it took only a year after the armistice for Columbia faculty to agree to carry on the spirit of War Issues by launching Contemporary Civilization (dubbed "peace issues" by some). The year-long required course began in the fall of 1919 with a syllabus developed by faculty from multiple disciplines and covering a range of U.S. and European historic and contemporary issues. Undoubtedly, help in cracking the ethos of departmental specialization came from the boost the course provided to the culture of faculty publication. Texts required in the early years of the course were typically authored

by Columbia faculty for a ready campus market, including: *Human Traits and Their Social Significance* by Irwin Edman; *Making of the Modern Mind* by J.H. Randall; *Man and Civilization* by John Storck; *Political and Social History of Modern Europe* by Carlton J.H. Hayes; and *Social and Economic History of the United States* by Harry J. Carman.

Gilbert Allardyce (1982) aptly noted that the road to initiating the survey course idea at Columbia mirrored the fluctuating thought patterns of heavy-handed president Nicholas Murray Butler. An early "paladin of professional scholarship, committed to the hegemony of the graduate school," Butler eventually sided with forces "seeking to recover the inner unity of knowledge and finally, under the patriotic influence of the First World War, to the cause of a common education for citizenship" (p. 703). Cross (1995) further positioned the survey course as a gauntlet thrown at the feet of liberal education adversaries who had aligned with social utility and individual careerism. Succinctly supporting that view, one faculty member remarked that "Columbia has operated on the assumption that it is not the fundamental business of the College to turn out specialists in a narrow field ..." (Carman, 1925, p. 2). Historian Carol S. Gruber (1975), however, emphasized another early aim of Contemporary Civilization as "a bulwark against radicalism" (p. 244). And, indeed, Columbia dean Herbert E. Hawkes (1919) touted it as teaching undergraduates to "meet the arguments of the opponents of decency and sound government" (p. 144).

In intent and structure, Contemporary Civilization appeared to offer something for just about everyone who had criticized faculty work, student learning, or college aims. By 1929, it was expanded to 2 years of required coursework and was widely adopted beyond Columbia, often adapted and renamed. At Stanford and Dartmouth the core course was Problems of Citizenship. Elsewhere, it was Problems of Democracy. Allardyce (1982) claimed: "For a time between the First World War and the campus protests of the 1960s, all roads led to the Western Civ class .... Students from every discipline and from science programs and professional schools came in mass numbers to brush with culture ..." (p. 695).

Contemporary Civilization was only the first chapter in the story of endeavors to revive liberal education. The next, also the second chapter in Cross's history, occurred at Columbia a year later with the launch of a Great Books course of study. Although Gerald Graff (1987) credited World War I as the breeding ground for both Contemporary Civilization and the Great Books program, Columbia literature professor John Erskine had in fact proposed a year-long course for all juniors and seniors, covering a classic text each week, well before U.S. involvement in the war. After much faculty bickering about a new course and Erskine's leave of absence in France as an Army educator, the 2-year sequence finally began in 1920. Louis Menand (2010) extolled it as "the first general education course in the humanities ever given in an American university, and it was a hit with the students" (p. 15). According to one of those enthusiastic students, Lionel Trilling, "it was from this course that the movement of General Education in the humanities took its rise and established itself not only in Columbia College but in numerous colleges throughout the nation" (1979, p. 234).

For Erskine, common knowledge was as important as the books themselves, and he was determined to "restore the social aspects of scholarship while providing seminar discussion of important ideas in common" (Chaddock, 2012, p. 87). Cross (1995) viewed the dedicated instructors and teaching assistants in the weekly classes as particularly crucial, including at various times Mark Van Doren, Mortimer Adler, Joseph Wood Krutch, Jacques Barzun, Rexford Tugwell, and others. The course eventually morphed into the Colloquium in Important Books. In 1937, Columbia installed a required freshman course in humanities that signaled "the College had established an undergraduate curriculum that promised to give all students a firm grounding in the liberal arts" (Cross, p. 34).

By far the most comprehensive history of the use of great books as a route to liberal education in U.S. colleges and universities is a two-volume University of Chicago Ph.D. dissertation by Hugh S. Moorhead titled *The Great Books Movement* (1964). Robert Maynard Hutchins, in *The Higher Learning in America* (1936a), made an attractive case for the goodness of Great Books learning. Then, in 1954, in *Great Books: The Foundation of a Liberal Education*, he simply made a stubborn case, beginning with "great books contain a liberal education, and everybody ought to try to get one" (p. 15). Eva Brann (1979), for many years a tutor and dean at St. John's College, included some useful history of "the tradition" (p. 64), as well as a particularly coherent argument for education through literary classics in *Paradoxes of Education in a Republic*. But it was left to controversial University of Chicago professor Alan Bloom to author a best seller on the issue, *The Closing of the American Mind* (1987), and to pose a student influence argument that, while developed anecdotally, claimed that "wherever the Great Books make up a central part of the curriculum, the students are excited and satisfied, feel they are doing something that is independent and fulfilling, getting something from the university they cannot get elsewhere" (p. 344).

Defenders of common core approaches have always drawn fire from the other side, particularly from proponents of more individualized progressive education. Black Mountain College founder John Andrew Rice and progressive icon John Dewey sparred with Hutchins in popular journals during the 1930s; and a scathing attack from Hutchins' own flank came from University of Chicago associate professor Harry D. Gideonse in an angry monograph titled *The Higher Learning in a Democracy: A Reply to President Hutchins' Critique of the American University* (1937). By 1939, one scholarly observer noted that "controversy concerning the nature of general education apparently will not soon abate in either professional or popular magazines" (Eurich, p. 6).

By 1982, scholarly columnist and news commentator Martin Kaplan pronounced the idea of core curriculum as "the wrong solution to the right problem" (p. 3). W.B. Carnochan (1993) charged that the accomplishments of core survey courses have been overstated under the influence of nostalgia (p. 70). More recently, however, in a masterful summary of great book endeavors on and off campuses, *A Great Idea at the Time: The Rise, Fall, and Curious Afterlife of the Great Books* (2008), Alex Beam reminded that "Erskine's class [at Columbia] exists to this day. LitHum, or

Literature and the Humanities, and CC, Classical Civilization, are still taught in two-hour-long sessions in Hamilton Hall, right where Erskine first addressed his first class" (p. 19).

The Supporting Cast: Structural Rearrangements

As core and survey courses inserted at least some elements of liberal education content into undergraduate curriculum requirements, they were supported by new structural arrangements such as upper and lower colleges, distribution arrangements for course selection, and honors work undergirded by liberal education aims and content.

The growth within universities of 2-year lower (or junior) colleges particularly friendly to liberal education occurred between the wars, but this was not a new idea. Allardyce (1982, p. 30) reminded that founding University of Chicago president William Rainey Harper was an early vocal proponent; and by 1932, the "Chicago idea" put into effect common core courses in the social sciences, humanities, and natural sciences during the first two undergraduate years, while reserving the upper class years for specialized study (Dzuback, 1991, p. 121). Alexander Meiklejohn, while president of Amherst College, pointed to "a demand for unified knowledge accepted as the standard of a junior college" of freshman and sophomore years which "would make the concept of general liberal education a definite one" (pp. 157–158).

Observing in 1938 a "movement" in the expanding embrace of lower colleges for common core coursework, Donald Cottrell claimed that "the collegiate work actually grew to be the main work of many universities" (p. 9). However, Robert Maynard Hutchins was not so satisfied with elements of the movement that still, unlike his own campus, treated the junior college as "an extension of the high school curriculum" (1936b, p. 449). In his famous 1936 volume *The Higher Learning in America*, as well as a series of articles in *Harper's Magazine* the same year, he repeatedly insisted that dedicating the first 2 years of college to general education was essential to having a real university. Historian David O. Levine (1986) found more pragmatic reasons for the distinction of junior and senior colleges in their contributions to resolving internal conflicts. "The battle line between those who favored undergraduate vocational education and those who condemned it was generally drawn between the sophomore and junior years," (p. 99), Levine claimed, while noting that by 1930 the majority of both private and public universities had established junior and senior colleges.

Distribution systems of course selection—categorizing courses into discrete areas and requiring students to select a certain number of courses from each—also supported the notion (if not the fact) of liberal education during the first half of the twentieth century. Again, however, the arrangement was not wholly new. James McCosh, arriving at Princeton in 1868, determined that by "laying restraints on electives" the college could provide "branches which are necessary to the full

development of the mind, which every educated man ought to know" (McCosh, 1897, p. 199). Princeton's trinity of studies defined those branches as philosophy, language and literature, and science.

Stanley Katz (2005) observed that the distribution approach to liberal education is the oldest and most persistent, surviving as "a vague notion of enforced diversity of subject matter, to be provided by regular disciplinary departments" that is still "all we have to provide structured liberal education at Old Nassau" (p. 17). A 1931 description of requirements and courses at five colleges, titled *Five College Plans* (Coss, ed.), suggested that distribution, generally partnered with a concentration in an area of personal interest, was a handy and frequent compromise between mandate and choice. It replaced Harvard's elective cornucopia in 1910, and it guided Wabash College freshmen and sophomores to two courses each in science, social science, foreign languages, and English.

Historical research on the distribution route to liberal education is sparse, likely owing to the undramatic nature of its very limited change in use throughout most of the twentieth century. For example, a study of 50 selective colleges and universities found that the average number of areas, or clusters, from which students selected general education courses grew only slightly, from 1914 to 1964—from 4.2 to 4.7. During the same time span, the percentage of graduation credit hour requirements taken in general education areas decreased only slightly, from 17 to 15 % (National Association of Scholars, 1996, p. 9). Yet, historians also have devoted little attention to the near demise of all general education distribution requirements between 1964 and 1995.

Honors programs, particularly as pioneered in 1922 at Swarthmore College under president Frank Aydelotte, also supported the idea that upper and lower colleges could be divided to assure greater attention to liberal education. At Swarthmore, students were admitted based on testing in an area they wanted to pursue in depth after 2 years of mostly required courses. Three related areas of study made up the honors field for each student (Aydelotte, 1931, p. 63). Not unaware of the downside of specialization, Aydelotte emphasized that Swarthmore's honors students were encouraged "to form the habit of acquiring general knowledge not by attending a wide variety of miscellaneous courses but rather by doing a great deal of general reading" (1927, p. 409). Like the Swarthmore plan, drafted when Aydelotte was still aglow from his Rhodes Scholar years at Oxford, the early honors program at Harvard included access to tutors, independent selection of study areas, small seminars, and minimal attendance requirements to encourage independent work (Hanford, 1931, pp. 44–45).

Historians looking back on early honors work, especially as junior and senior projects at small colleges, have expressed varying views of its outcomes and effects on liberal education. George Schmidt (1957) concluded in his overview of liberal arts college practices that honors programs in the original Swarthmore mode proved too financially difficult to sustain on most campuses (p. 234). While maintaining that the honors program influence was "more symbolic than real," David Levine (1986) insisted that nevertheless "honors work suggested that small liberal arts colleges could play a special role in the education of the nation's most talented young men"

(pp. 110–111). Yet, in a different take on the influence of honors on the ideal of liberal education, Willis Rudy (1960) determined that honors and independent study among upperclassmen advanced the opportunities for specialization. He noted that college catalogues "frankly admitted that undergraduate specialization by means of individual honors or independent study programs would serve as a valuable preliminary to later professional specialization in graduate school" (p. 45).

Progressive Experiments and Distinctive Colleges

In a handy chronological list of more than 200 "turning points" in the evolution of the American college curriculum, Levine and Nidiffer (1997) populated the first half of the twentieth century primarily with the establishment of innovative courses, programs, and colleges aimed at various routes to liberal education (pp. 73–76). The first such entry in this area is W.E.B. Du Bois's advocacy for general education alongside vocational education for the "talented tenth" of African Americans (1903). Also on the list are Harvard's introduction of general education distribution requirements (1909), Amherst's creation of the first survey course (1914), Columbia's Contemporary Civilization course (1919), Antioch's introduction of a work-study program in a liberal arts curriculum (1921), Swarthmore's honors program (1921), the initiation of the experimental college at University of Wisconsin (1927), the founding of progressive Sarah Lawrence College (1927), the founding of progressive Bennington College (1932), the founding of the 2-year General College at University of Minnesota (1932), the founding of experimental Black Mountain College (1933), and the founding of the Great Books curriculum at St. John's College (1937). Clearly, this period in American higher education was notable for innovation and experimentation with new pathways to liberal education, and many of those entailed the initiation of new or wholly remodeled colleges—freestanding or within existing universities.

Depending on founders and founding philosophies, various analysts have referred to the new institutions and programs of the early twentieth century as experimental, progressive, distinctive, unusual, and/or experiential. Gary Miller (1988), for example, clustered them under three philosophical categories: humanism, progressivism, and instrumentalism. Although he made little distinction between progressivism and instrumentalism, his progressive examples (Bennington and Sarah Lawrence) were clearly akin to John Dewey's emphasis on learning that tapped into the interests and experiences of individual students and that included democratic social contribution among its goals. The General College at the University of Minnesota modeled a way to combine progressivism with instrumental aims, "interpreting it to fit the land grant orientation, the research ethos that predominated in the large state universities, and the characteristics of the students that the university tended to attract" (p. 98). The humanist programs (e.g., the Experimental College at University of Wisconsin, the College at the University of Chicago) focused on cultural heritage, intellectual advancement, and social values.

In a 1939 study of "general education in experimental liberal arts colleges" (p. 193), Donald P. Cottrell found that while "within the past fifteen years it has virtually become the style for colleges to devise novel plans," not all were truly experimental (p. 195). Those that qualified had explicit philosophies, values, and purposes that self-consciously guided curriculum, teaching, and administrative practices. Those that Cottrell found satisfying those criteria and worthy of further investigation included Reed, Bennington, Black Mountain, Bard, and St. John's colleges—all founded or redesigned between 1921 (Reed) and 1937 (St. John's). He concluded with the hope that they would "continue to blaze new trails and to contribute distinctive understandings of the complex problem of general education" (p. 218). Indeed, of these, only Black Mountain College has since closed its doors.

In a later analysis of ten "distinctive colleges" created or recreated largely during the same period, Townsend, Newell, and Wiese (1992) determined that although small in size and number, such experiments in general, or liberal, education "foster practices and harbor ideas that are essential to the vitality and responsiveness of undergraduate programs everywhere" (p. 15). Heading their list was the transformed Antioch College of 1920 which, under the guidance of idealist engineer Arthur Morgan, became a leader in general education through a unique combination of liberal education in class and industry experience out of class. They also included Berea College, with its commitment to service to Appalachian communities; Reed College, which managed both humanistic and progressive elements in a liberal education of high academic standards; Deep Springs College, founded in 1917 as a community, a demanding education, and a working ranch for high-achieving students whose liberal and multifaceted curriculum could include math and sciences, humanities, governance, and more; the humanistic and experiential Experimental College at University of Wisconsin; the College at the University of Chicago focused on 2 years of general education; Black Mountain College, founded in the Deweyan individualistic and communitarian mode in 1933 in North Carolina, but eventually best known for study and practice in art and literature; St. John's College, in 1937 completely overhauled into a thriving great books college in Annapolis, MD (eventually with a second campus in Santa Fe, NM); and two post-World War II innovations, Evergreen College in Olympia, WA, and College of the Atlantic in Mt. Desert Island, Maine.

Schmidt (1957) maintained that new or renovated colleges and programs tended either toward a conception of liberal education similar to that of John Dewey or of Robert Maynard Hutchins, claiming "the success of either the Hutchins or the Dewey idea would be measured by the extent and the amount of change that each could bring about in the curriculum." While noting that "few colleges went all-out for either philosophy" (p. 222), he found the majority of activity in the Dewey camp where he cited newly founded Black Mountain, Bennington, and Sarah Lawrence colleges, as well as the reorganized Rollins College in Florida and Goddard College in Vermont (p. 222). These colleges shunned intellectual tradition for whole life experience and supplanted required coursework with individualized programs of study. Similarly, Benezet's 1943 study, *General Education in the Progressive College*, applauded Bennington, Bard, Sarah Lawrence, Black Mountain, and

Rollins for "aims and methods, beliefs and practices fundamentally akin to those of the progressive movement in twentieth century American education" (p. 17).

Not surprisingly, the growth of progressive pathways to liberal education invited immediate responses in print from the unconvinced. Sarcastic humanist Norman Foerster, for example, disparaged professors committed to "individual differences, spontaneous choice, vocational motivation, research from the earliest possible time (the pre-school years, as some contend), education with a 'kick,' the adventure of learning, the joy of creative activity, the thrill of discovery, the inalienable right to a personal philosophy, yes, even a social gospel based on continuous change" (1938, p. 43). Although Foerster was somewhat sanguine about the College at University of Chicago and the General College at the University of Minnesota, he warned: "Can it be seriously denied that the liberal arts colleges within the state universities have been gradually made over into service colleges, or servile colleges, meekly serving the ends of vocational knacks and professional skills?" (p. 64).

David O. Levine (1986) pointed out an even more serious problem, however. The willingness of liberal arts colleges between the wars to experiment with curriculum rarely extended to racial or ethnic diversity. For example, Antioch turned down a worthy African American applicant in 1925 as "a matter of expediency," and even at Oberlin, with a 4 % African American student body, prejudice from whites on campus was a constant issue (p. 159). By 1927, 77 historically black colleges and universities, from land grant institutions to small private colleges, offered higher education opportunities. A study by Gasman, Lundy-Wagner, Ransom, and Bowman (2010), however, reiterated that from the early twentieth century to well into the 1960s, teacher education was the most prominent degree emphasis at these colleges and universities, including among those considered liberal arts colleges.

Contributions of Leaders, Builders, and Their Institutions

The history of liberal education in colleges and universities is also the history of thinkers and leaders (sometimes one and the same) and their ideas, preferences, agendas, and abilities. Critical and thorough biographical histories, particularly those written without any special authorization from subjects or their relations, have become important sources of detail concerning how and why various approaches and philosophies have taken hold or lost traction.

The period between the wars, with its numerous strong campus administrators and faculty members, has been especially prolific in prompting biographical histories that allow the endeavors of leaders to tell the story. Brilliant and controversial Robert Maynard Hutchins, arguably the most celebrated university president of the period, has appeared in numerous books and articles for his dedication to general education, his outspoken defense of personal freedoms, and his controversial decisions. While Mary Ann Dzuback (1991) relied on documents and interviews to describe his variously courageous and problematic leadership, his close associate Harry S. Ashmore (1989) was able to produce an insider's biographical portrait.

Hutchins's colleague and great books champion Mortimer Adler penned two autobiographies (1977, 1992) and many essays that, not surprisingly, applauded the University of Chicago enthusiasm for general education. Notably, it is at least possible that sheer volume of literature has accounted for the prominence of that institution in activities to promote the survival of liberal education.

Also garnering exceptional attention during and since his time on the national scene, educator and activist W.E.B. Du Bois has been the subject of biographical treatments that shed light on his hopes for liberal education for a talented tenth of Black citizens who could stand shoulder to shoulder with their white counterparts and would become the leaders of their race. Prominent among those is David Levering Lewis's Pulitzer Prize winning *W.E.B. Du Bois: Biography of a Race, 1868–1919* (1993), an elegant and comprehensive treatment followed by his second Du Bois volume and also Pulitzer winner, *W.E.B. Du Bois: The Fight for Equality and the American Century, 1919–1963* (2000). Derrick Aldridge in *The Educational Thought of W.E.B. Du Bois: An Intellectual History* (2008) reminded that the liberal education DuBois sought emphasized the classics of western literature and was not unlike Du Bois's own undergraduate education toward a bachelor's degree in philosophy at Harvard.

John Erskine, after plowing new ground in liberal education by convincing Columbia University to approve a 2-year course in great books, managed an academic record of three personal, if anecdotal and selective, memoirs: *The Memory of Certain Persons* (1947), *My Life as a Teacher* (1948), and *My Life in Music* (1950). Coverage of his full and busy life, including his struggles to bring liberal education to students of all backgrounds and his service as the first president of Juilliard College, was finally completed in a scholarly biography, *The Multi-Talented Mr. Erskine: Shaping Mass Culture Through Great Books and Fine Music* (Chaddock, 2012). On the other hand, Swarthmore College president and honors program originator Frank Aydelotte never got around to sorting through his mountains of material for an autobiography and instead authorized the task to his friend and Swarthmore dean, Frances Blanshard (1970). However, Aydelotte's brother-in-law, the iconoclastic founder of progressive Black Mountain College, John Andrew Rice, wrote an award-winning anecdotal memoir, *I Came Out of the Eighteenth Century* (1942); and, more than 50 years later, Rice got his own unauthorized, critical biography, *Visions and Vanities: John Andrew Rice of Black Mountain College* (Reynolds, 1998).

Several educators—Dewey, Du Bois, Hutchins—stand out for inspiring scores of books and articles about their lives, thoughts, letters, and influence on liberal education. The thorough coverage has allowed readers to comb through for relevance and objectivity. But others, such as Scott Buchanan and Stringfellow Barr, founders of the great books approach at St. John's College, have received only authorized volumes that each are candidly subtitled as a *Centennial Appreciation of His Life and Work* (Nelson, 1995, 1997). Pertinent in terms of critical potential are two cautionary axioms about biographical subjects from journalist and author Alex Beam: "The deader the better. Few living relatives, good; no living relatives, best" (2011).

Institutional Studies as History and Public Relations

In recent years, historians have become less willing to produce strictly "house histories" that applaud their own institutions, and a number of excellent volumes now give valuable detail about how curriculums and programs related to liberal education have been nudged into place. Columbia University offers a good example. A 1947 history, *Columbia: Colossus on the Hudson*, covered the liberal education victory related to common core courses with glowing commentary like, "these are healthy signs of a lively college, aware of the kind of world in which it is situated and prepared to give the student the kind of education the 20th century demands" (Coon, pp. 355–356). Yet, Columbia's most recent and by far most balanced and comprehensive history is dotted with warts and all. In *Stand Columbia: A History of Columbia University in the City of New York, 1754–2004* (McCaughey, 2003), readers discover that the common core has never been smooth sailing: "By the later 1930s, departments frequently eased the burden on their regular members by requiring visiting faculty to teach CC. In the years after World War II, and acutely in the 1960s, the staffing of the Core became the problem it has remained since" (p. 296).

Perhaps the greatest contribution that institutional histories have made to the history of liberal education is in capturing portraits of the small, often experimental, private colleges which might otherwise remain relatively unheralded as a group that modeled new possibilities for teaching and learning. To Burton R. Clark, who managed a thorough study and analysis of three such colleges in *The Distinctive College: Antioch, Reed and Swarthmore*, the extent of writing about such campuses should not be surprising. After all, he commented, "the private liberal arts college is *the* romantic element in our educational system" (1970, p. 4).

Two such colleges that closed, Black Mountain and the Experimental College at University of Wisconsin, have earned some of the most comprehensive accounts. Black Mountain, from founding to finish, was described in Martin Duberman's lively *Black Mountain: An Exploration in Community* (1972) and in Mary Emma Harris's *The Arts at Black Mountain College* (1987). Notably, and somewhat unusually for such histories, neither author had any formal association (e.g., student or faculty) with the college. On the other hand, Alexander Meiklejohn wrote the authoritative account of his Wisconsin college, *The Experimental College* (1932), which gives a dispassionate, if somewhat dry, treatment of rationale, curriculum, class assignments, student and advisor relationships, and the like.

Apparently, scholars of the history of higher education continue their interest in small and significant liberal education ventures through all eras. An Antioch history appeared in 1946, a St. John's history in 1953, a Bennington history in 1981, and a Reed history in 2012. The latest in the field is a long-awaited overview of the nearly 100-year-old Deep Springs College that deftly incorporates both the history of the college and the biography of its founder to illuminate "the smallest, most remote, most selective, and certainly the most unusual liberal arts college in the world" (Newell, 2015, p. XV). Happily, *The Electronic Edge of Academe: The Saga*

of Lucien L. Nunn and Deep Springs College will not be the last historical analysis to recall the contributions of distinctive institutions in the struggle for survival of liberal education.

Regrouping and Recounting a More Recent Past

Unlike the period immediately after World War I, the post-World War II era produced more interest than invention in liberal education. A great deal of the important literature on the subject in the 1940s through the 1960s comprised official reports, scholarly essays, and journalistic commentaries about why and how a new spirit of reform—now typically referred to as "general education"—was due. Only later did historians find themes for analysis that allowed them to weigh in on the shape and meaning of liberal education since mid-century.

The Harvard Redbook and the Truman Commission Report

As Jacoby (1994) wisely noted, the various reports about curriculum written during the late nineteenth and early twentieth century may make for boring reading, but they contain a treasure trove of information about the development of crucial issues. "Curriculum is the turf where relativism and multiculturalism play out; here more abstract issues of what students should learn are presented," he concluded (p. 93). The mid-twentieth century saw a number of college reports published by various sources to elucidate the role of liberal education in America—such as the Association of American Colleges in 1942, the Harvard Report or Redbook in 1945, and the Truman Commission Report of 1947. However, there has been little historical analysis of these efforts, with the exception of the Redbook and, to a lesser extent, the Truman Report. These two are considered to not only reveal evolving conceptions of liberal education, but also to have been highly influential in the post-war education debates (Rudolph, 1962; Smith, 1990).

Scholars view the Harvard Redbook as both a result of and an influence on national trends during the post-war years. A number of contextual factors are attributed: first, that the close of World War II saw a new global balance of power in which non-Western nations were highly influential and, in response, European and American educators placed a newly deliberate emphasis on Western heritage (Oakley, 1992). In addition, Smith and Bender (2008) pointed to the threat of totalitarian governments and their negative influence on liberal thinking as a decisive factor in Harvard's president Conant's creation of the Redbook committee. Conant also anticipated the post-war flood of new students, and, recognizing that the changes to Harvard curriculum in the previous decade had not ended curricular discontent, he charged a committee of faculty to deliberate and examine ideas about how to continue liberal education in undergraduate education (Levine, 1978; Smith, 1990).

The Redbook specifically reflects the general education movement which began arguably at Columbia in 1919, and was part of the national postwar urge to reexamine curriculum and core courses in general (Levine, 1996; Rudolph, 1962). Rudolph (1962, 1978) strongly argued that the Redbook was actually a late party to this movement, a sort of capitulation to the trend of restoring order while turning away from specialization and toward holistic development in the tradition of liberal education. He identified the Redbook as "an attempt to capture some of the sense of a continuing intellectual and spiritual heritage" lost in the elective system. The faculty were "shocked" to realize how far Harvard had drifted from this heritage, and "belatedly discovered the idea of general education" as a means of restoring it (p. 456, 484). Interestingly, Rudolph (1978) saw the Redbook as a latter-day Yale Report, striving to impart the values and concepts of that report in a way that upheld liberal education, yet simultaneously answered the social and political needs of mid-century America.

The Redbook addressed several topics—such as how leadership could be revitalized, what community education might accomplish, and the role of education in preventing the rising lower classes from wreaking chaos—but focused mainly on issues of liberal learning through general education (Levine, 1978; Rudolph, 1962, 1978). The Redbook decided upon Western heritage as the foundational concept and emphasized a continuity between religious and classical education (which together reveal the "Western mind" in the "spirit of Protestantism") in its discussion of the normative and positive features of general education (Kravitz, 1994; Oakley, 1992, p. 46). General education, it stressed, promoted the most valuable mental abilities—thinking, communication, and moral judgment—and holistic education was not only paramount but feasible through certain shared courses that would flex slightly to individual needs (Levine, 1978; Rudolph, 1962; Williams, 1968). Smith and Bender (2008) argued that the Redbook took the aims of the Great Ideas and Great Books courses even further and emphasized the need for education to foster intelligent democratic citizenship. "It stressed the importance of the humanities to undergird a liberal arts bachelor's degree in an increasingly technological and scientific age," they concluded (p. 14).

Although the Redbook is almost universally credited as being well-circulated and highly influential—even "an unparalleled influence" on the postwar education debate—there has been little written to explain the details of that influence (Oakley, 1992, p. 46; Rudolph, 1962). It is verifiably true that the Redbook was widely published, as 40,000 copies had been sold by 1950 (Smith & Bender, 2008), but this does not adequately prove the extent or nature of its influence on educational leaders or other schools. Some have pointed out, furthermore, that the Redbook was largely a failure at Harvard itself: the faculty voted agreement with its general principles, but rejected the foundational recommended courses under the criticism of being too Western-focused (Carnochan, 1993; Oakley, 1992). Levine (1996) remarked that when so many alternatives to the core were approved, the entire effort reverted back to an elective-style curriculum; Carnochan blamed the lingering influence of Eliot and a contemporary national aversion to limits for this failure. In fact, the Redbook has come under a certain degree of fire from historians who

viewed its efforts as doomed from the beginning. Although Levine (1978) viewed the Redbook as the best known of postwar educational reassessments, recognized nationally for a coherent vision of higher education, it has been noted also that the Redbook was itself "curiously airless"—lacking historical or societal context, possessing little originality, and pinning all its hopes on a temporal understanding of curricular form that failed to truly connect with the American people (Carnochan, 1993, p. 91; Rudolph, 1978). It therefore failed to revitalize the undergraduate curriculum, and perhaps could not have succeeded in any case under the rising influence of professorial specialization, ending isolationism, and the age of the Cold War (Carnochan, 1993; Kravitz, 1994; Rudolph, 1978).

While the Redbook is often cited but more rarely discussed, the Truman Commission Report of 1947 has been even less analyzed. Smith and Bender (2008) were some of the few to discuss it, introducing the text as an "ambitious report" that "criticized existing economic and racial barriers to equal education" and "recommended a system of higher education" to better meet diverse needs (p. 1). It was unique in that it was the first instance of a presidentially-initiated engagement with higher education: President Truman's goals were to "re-examine our system of higher education in terms of its objectives, methods, and facilities; and in the light of the social role it has to play" (p. 84). Hutcheson (2007) echoed this theme of general education for a diverse world, emphasizing that the Report presented a "bold vision" for future direction and calling for institutions to "radically revamp their curriculum" to meet the needs of the day (p. 360). Despite the "enduring impact" of the Truman Report on higher education in America (Hutcheson), and the fact that it is often mentioned in conjunction with the Harvard Redbook's similar focus on general education, the Truman Report's actual recommendations have not been much examined in light of the goal of liberal education. The Report is simply cited as the most prominent of a growing number of education reports that culminated in the 1960s, a tradition apparently riddled with "guilt" about abandoning traditional learning for the sciences (Rudolph, 1962; Smith, 1990, p. 142). Smith and Bender concluded that both the Redbook and the Truman Report ultimately were early instances of the American response "to the challenge of extending the ideal of liberal education into a greatly enlarged academic establishment" (p. 13).

From Commentary to Histories

While commentary related to liberal education is very old, it has enjoyed special prominence during times of curricular encroachment from research, specialization, vocationalism, market preferences, funding preferences, and/or national mood. Essays closely before, during, and after mid-century were typically mild and often eloquent appeals about individual and social needs for intelligent, humane, and contributing citizens—not new ideas, but reiterations widely welcomed amidst the stark reality of war. Alfred North Whitehead (1929), no friend of narrow knowledge acquisition, managed in *The Aims of Education and Other Essays* to make all

university learning seem like a liberal education if it committed to "welding together imagination and experience" (p. 93) and if it supported students in "the apprehension of general ideas, intellectual habits of mind, and pleasurable interest in mental achievement" (p. 6). Liberal Spanish philosopher José Ortega y Gasset (1946) also promoted "suffusing knowledge with imagination" (p. 9), but in his powerful work *Mission of the University* favored dividing university aims into "the cultural disciplines and the professional studies . . . offered in a rationalized form based on the best pedagogy—systematic, synthetic, and complete . . . " (p. 73).

Similarly, other noted essayists of the time bypassed any prolonged whining about what was going wrong. Some, like French philosopher Jacques Maritain, simply ventured specific suggestions for change. Maritain proposed his rules for the fundamental norms of education during lectures at Yale University later published as *Education at the Crossroads* (1943). Wary of relativism, he peppered the rules not only with appeals for intuitive thought and spiritual unity, but also with a case for knowledge and truth seeking. He recommended an undergraduate liberal education with a year of mathematics and literature, a year of natural sciences and fine arts, a year of philosophy, and a year of ethics and political and social philosophy (pp. 67–68).

Although Norman Foerster, in *The Future of the Liberal* College (1938), applauded great books while objecting to the University of Chicago approach to a common core, two other educators, Mortimer Adler and Mark Van Doren, wrote book-length appeals for liberal education through common learning based in classical works—just as they both had witnessed at Columbia University. Adler's best seller, *How to Read a Book: The Art of Getting a Liberal Education* (1940) contained both analytical reading advice and appeals for a liberal education through the western classics, while Van Doren's *Liberal Education* (1943) promoted "skills of being" (p. 67) which he suggested could best be acquired through common learning from classic texts.

Eventually historians could study the postwar period of the twentieth century for themes and events concerning liberal education. Most agreed with Michael Lind's (2006) observation that "in the 1950s and '60s . . . liberal arts education managed to hold the menace of vocationalism at bay for awhile. In the booming post-World War II economy, liberal arts enrollment increased" (p. 56). However, as Linda Eisenmann (2006) determined in her study of higher education among women during the postwar years, liberal education still had not greatly extended to female students by the start of the second half of the century—especially not to African American women. Although the gap had closed a bit since World War I, "even in the 1950s, African American women were much less likely than white women to hold degrees from four-year liberal arts institutions" (Eisenmann, p. 124).

At a 1957 conference organized by the Commission on the Education of Women (a project of the American Council on Education), a number of participants supported the liberal arts as preparation for the various directions that female students might take after college. Additionally, however, some support also surfaced for vocational subjects, home economics, and social service (Eisenmann, pp. 103–04). Similarly, Mills College president Lynn White, Jr. (1950) applauded diversity in

subject matter for both college women and men—from vocational training to liberal education—noting that "The liberal arts, limited though they may be, enshrine an ancient and sophisticated tradition in which any student may rejoice regardless of sex . . . " (p. 63).

Concerns about extending liberal education to newer student groups became muted when "by the 1970s and '80s, a troubled economy and an uncertain job market pressured students to focus on career training," noted Michael Lind (2006). He also found that, "At the same time, increased competition for admission to selective professional schools inspired a growing number of undergraduates to follow pre-professional tracks" (p. 56).

Indeed, from 1967 to 1974, general education requirements were reduced at a majority of U.S. colleges and universities (Gaff, 1983). And, from 1970 to 2000, "the system grew by 50 percent [but] almost every field which constituted the old arts and sciences core of the undergraduate college was in absolute decline" (Brint, 2002, p. 235). Some observers blamed the influence of student activism and liberal campus responses, as did Allan Bloom (1987) in claiming that curriculum changes after the 1960s "were without content, made for the 'inner-directed' person. They were . . . directly traceable to both the teachings and the deeds of the universities in the sixties" (p. 321).

However, economic forces, growth in student numbers, faculty preferences, and other factors also contributed to the decline of general education after mid-century. A report from a survey by the National Association of Scholars (1996), ominously titled *The Dissolution of General Education: 1914–1993*, indicated that long-term trends also were at work. Plotting time points in 1914, 1939, 1964, and 1993, the survey found that the average number of general education credits required for graduation had steadily declined from 55 % of the total credits in 1914 to 33 % in 1993 (p. 5). Survey courses, foreign language requirements, rhetoric requirements, and other indicators of liberal education all slid steadily downhill throughout the time period, with the sharpest downturns occurring from 1964 to 1993. Colleges classified as liberal arts institutions enrolled about 25 % of all students in the mid-1950s, but only 8 % by the early 1970s (Oakley, 2005, p. 5).

Alston Chase (1993), surveying general education from 1945 to 1980, offered a particularly expansive rationale for its decline. Although increased citizenship aims boosted general education to "national phenomenon" status in the 1940s and 1950s, ultimately "it was the product of external social forces, and it was killed by the academy. It was not rejected because students found it too elitist, but because too many professors decided it was not elitist enough" (p. 21). Chase found general education expansion after World War II (typically through large required survey courses like Western Civilization and Problems of Democracy) everywhere except in southern institutions and Catholic colleges. Soon, however, faculty balked at the dual mission of imparting values (democratic citizenship) while practicing disinterested scholarship, at the coordination demands of team and/or interdisciplinary teaching, and at the necessity for agreeing on course work and grading standards across all sections. Compromises to alleviate these issues, such as replacing general education courses with big freshman seminars,

soon undermined the effort. Chase reported that "by 1970 most general education programs had been fully discarded" (p. 33) except at some small liberal arts colleges and the early pioneering institutions like Columbia and Chicago. At Harvard and elsewhere, according to Louis Menand (2010), "specialized courses crept into the interdepartmental general curriculum (it was, after all still taught by specialists)," and "students were able to fulfill [general education] requirements with courses such as Scandinavian Cinema." After all, he reminded, "academic life in the sixties was not friendly to concepts like consensus and the canon" (p. 43).

In the 1970s, Harvard academics recommitted to the idea of a core of general learning for all students. Menand, however, viewed the new Harvard Core (with students selecting courses from 11 categories) as "a move from subject matter to methods" which allowed faculty to teach methods of inquiry in their own areas of particular interest in a Core that embraced "learning to learn" (p. 51). Among the other institutions that adopted methods courses for general education programs at about this time were Brown (Modes of Thought) and the University of Michigan (Approaches to Knowledge). Menand pointed out that by 1976 the prescriptive core approach to general education survived at only about 7 % of American liberal arts colleges, while 90 % opted for the greater choice of distribution systems. He further noted: "The danger that faces liberal education today is the same as the danger that it faced in Eliot's day: that it will be marginalized by the proliferation, and the attraction, of non-liberal alternatives" (p. 53).

Although largely operating separately from various attempts to resuscitate general education, great books endeavors on campus had their own bumpy ride in the curricular firmament. Charles Eliot's highly successful pre-packaged five-foot shelf of *Harvard Classics*—advertised in 1910 as a self-taught liberal education that could be acquired by devoting 15 min a day to the task—had introduced a middlebrow audience to classic texts; and after World War II, middlebrows were going to college in record numbers. Pundits and historians (e.g., James Atlas, Alex Beam, W. B. Carnochan) have viewed this period as a short burst of promise for great books curriculum endeavors, followed almost immediately by push-back from vocal anti-canonists. While political correctness adherents saw white elite oppression in the western texts, a number of analysts have concluded that the inclusion of great classics in the curriculum had the democratizing effect of widely sharing once elite emblems (Chaddock, 2002, 2012; Kass, 1973; Lacy, 2012)—in harmony with "Erskine's message about the accessibility of culture" (Rubin, 1992, p. 191). However, Casement (1996) observed that even when removed from the high culture pedestal, great books core courses tended to drift away from the unity of interdepartmental offering to various courses in English departments (ancient literature), history departments (intellectual history), philosophy departments, and elsewhere.

Alex Beam, observing the 1952 venture by *Encyclopedia Britannica* that produced the 54-volume *The Great Books of the Western World*, found "icons of unreadability, 32,000 pages of tiny, double-column, eye-straining type" (2008, p. 3). Edited and ceaselessly hyped by Mortimer Adler, Robert Maynard Hutchins, and Chicago advertising mogul Bill Benton, the massive book sets found their way

into living rooms (largely for display) and even some classrooms; however, the endeavor was far more about the cash register than the campus, and eventually "the culture wars of the 1980s effectively buried the great books in a blizzard of anti-establishment, multicultural rhetoric" (p. 192).

More recently, Tim Lacy's (2012) comprehensive treatment of Adler's presence as great books ringmaster at the University of Chicago and the *Encyclopedia Britannica* demonstrated that by the late 1960s the great books idea, and especially its commitment to promoting a democratic culture, was already being "overwhelmed" by "mass higher education, the Vietnam War, and the Civil Rights Movement" (p. 97). The classic text approach to liberal education on and off campus had peaked, and "a new cultural paradigm, multiculturalism, would supersede the liberal pluralism (and conservatism) that had allowed for almost 20 years of increasing great books exposure" (p. 97). Nevertheless, historians have convincingly argued that a key aim among proponents of great books approaches to liberal education was to spread emblems once reserved for the upper-class few to the middle- and lower-class many (Chaddock, 2002, 2012; Kass, 1973; Lacy, 2012; Rubin, 1992). And, until much of higher education became concerned with career preparation and marketplace positioning, the various routes to liberal education could be seen in that light.

Current Thought and Future Directions

Current discourse in U.S. liberal education generally turns to one of several themes. One centers on the demise of liberal education and its disciplinary underpinnings in humanities and social sciences. A second area of discussion focuses on why, but rarely how, liberal education is still important to students and to a democratic society. And, a third, but far smaller, commentary concerns ideas for new approaches that might assist in survival. Although these are not aimed at new inquiry into the history of liberal education, they generally are informed by some attention to questions of how and why we arrived at our current state.

The decline of liberal education—seen in reduced numbers of liberal arts colleges and students, as well as diminished clarity of purpose in curriculum requirements and distribution systems—represents somewhat of an inevitable evolution. Russell Jacoby (1994) noted that early proponents from Arnold and Mill to Du Bois distrusted utilitarian education and applauded culture. Yet, since their time, general enthusiasm for consumerism and careerism has ballooned, puffed up by the enormous expansion of higher education beyond the privileged few. Now, according to Jacoby, "anyone who challenges the narrow practicality that dominates education will be suspected of elitist or aristocratic pretensions" (p. 15). Another analyst, Donald N. Levine, lamented "the decline of the vision of liberal learning as a training ground for mature human beings and informed citizens" (p. 3). Francis Oakley (2005) eventually suggested that the prominence of recent "narratives of decline" has become as threatening to the survival of liberal arts colleges as their real issues of relevance and identity (p. 2).

Reasons, and sometimes blame, for diminishing interest and practice in liberal education have been named as both contextual (e.g., the changing culture, the political polarities, the growth of knowledge) and internal (e.g., the research ethos, student self-interest, faculty reward systems, administrative explosion). Historian Louis Menand (2002) found after 1975 an age of diversification in whom and what was taught. New populations and new subject matters meant "the meritocratic rationale was exploded" (p. 227) while "an emphasis on universalism and greatness has been replaced by an emphasis on diversity and difference" (p. 228). However, Menand determined that this is not necessarily a bad thing, but a thing that creates difficulty in reconciling liberal education with all the other interesting and often useful options. Stanley Katz (2005), agreeing that diverse student bodies with an expanding range of motivations for attending college have brought about a contextual sea change, also noted problems with internal responses that attempt to satisfy market demand—structural changes, particularly among research universities, that "tend to marginalize undergraduate education . . . [and] make it difficult to theorize and put into effect anything like liberal education" (p. B8). Yet worse, humanities and social sciences disciplines, key to flourishing liberal education, are where faculty "teach more, get paid less, and have fewer resources for research than their colleagues in the natural sciences . . . . They are in a weak position to influence decisions within their universities" (p. B8).

Although problem identification seems far easier than solution development for most analysts, a few have floated a small cache of resuscitation ideas. Menand (2010), for example, suggested that since professional training is here to stay, we might want to recognize that the practical is not, after all, the enemy of the true. Although "any liberal arts field can be made non-liberal by turning it in the direction of some practical skill . . . conversely, any practical field can be made liberal simply by teaching it historically or theoretically" (p. 55). Therefore, liberal education might best be advanced by teaching and learning that recognizes "the liberal arts and these nonliberal fields have something to contribute to one another" (Menand, 2002, p. 231). In this he echoed Alfred North Whitehead's much earlier warning that "there can be no adequate technical education which is not liberal, and no liberal education which is not technical" (1929, p. 48). Tackling structural barriers, Stanley Katz (1996) has urged educators to think in terms of the "liberal arts years" which could run from the last 2 years of high school through the first two of college; to determine a "core of common knowledge based on history, large ideas, and significant texts;" and to develop "courses and other learning experiences" that could happen prior to specialized university work (p. 81). Although apparently less willing to outline specific solutions 10 years later, Katz (2005) still insisted that any curricular reform would fail "unless we take seriously the structural constraints of higher education today" (p. B9). Other ideas zero in on what liberal education should be rather than how it might get there; and these include notions about: subject matter, such as "global citizenship" (e.g., Nussbaum, 2010); approaches to learning, such as "critical inquiry" (e.g., Weaver, 1991); and developmental outcomes, such as "intellectual virtues" (e.g., Roche, 2010). Small examples in all these areas occur as reminders and models of liberal education past and perhaps future.

Although suggestions and polemics abound, there remain a number of substantial needs in the historiography of liberal education. On the most basic level, the past few decades have seen a distressingly small number of historians willing to buckle down and reexamine original documents closely or comprehensively; Veysey (1970) and Rudolph (1978) remain the most thorough sources despite their relative age. Some scholars (e.g., Potts, 2010; Winterer, 2002) have set the example by engaging in meticulous research, albeit along relatively narrow themes, but a larger effort is needed to continue to expand our understanding of what liberal education has meant and continues to mean. In addition, the past 20 years of educational debate remain generally unchronicled; if scholars would direct greater attention to recent developments, the present would perhaps elicit fewer laments and instead employ new research to undergird the effort to define and contextualize liberal education for the twenty-first century.

Several specific areas of investigation would particularly enhance the historiography. First, as Hutcheson and Kidder (2011) have recently noted, philanthropy for women and Blacks in higher education has recently come into scholarly vogue, but very little research has been done on the relationship of either group to liberal education. Historically Black colleges have a great wealth of literature institutionally, but there is a distinct dearth of exploration of how liberal education ideals in post-Reconstruction and even Civil Rights America fit with the intensely influential movement for industrial education for Blacks. Anderson's (1988) seminal study of Black education in the South lays the groundwork but, along with higher education in the West (including minority groups like Catholic and Spanish institutions), the lack of research into these issues of race leaves a vital part of nineteenth and twentieth century liberal education untouched. Women's colleges are similarly under-researched in terms of how closely the curriculum was based in liberal studies; although comments like the aforementioned 1833 editorial reveal a certain expectation for feminine graces, how that social goal meshed with the realities of higher education has been largely unexplored. A few seminal works have focused on this relationship between liberal education and women's learning in specific time periods (e.g., Eisenmann, 2006; White, 1950), but to better understand the needs, opportunities, and purposes of liberal education in the lives of women throughout the development of higher education, much scholarly work remains.

Second, rich institutional sources abound, but there is little systematic exploration of what happens at unusually distinctive liberal arts colleges—such as Deep Springs, Alverno, or St. John's—to make them thrive even while other colleges with distinctive curriculum wither and fade. Cubbage (2009) has provided a model concerning great books colleges. An even more significant question may be about the path their graduates have followed, and whether those former students believe that their liberal education actually achieved what it claimed it would. Such individual voices would provide invaluable insight into the development of higher education beyond the arena of the academic journal and board room, while offering a clearer and more practical indication of where and why liberal education succeeds.

Similarly, there is a distinct need for better information on the limitations of liberal arts programs in large universities. Practical research on how well they work, what the student perspective is on various adaptations, and what the general attitude on campus is toward liberal learning would be a vital addition. Issues include whether liberal courses are viewed as simply something to get out of the way, whether teachers seek to engage their students in the traditional sense of deepening the powers of the mind, and whether it is something that is merely included out of a sense of obligation to school norms.

Finally, these recommendations, mirroring those throughout this chapter, suggest that two crucial gaps exist in current historiography. One of these is a distinct lack of good biographies of key educational reformers in the past two centuries. William R. Harper, James McCosh, Frank Aydelotte, and Noah Porter are a few of the great names who remain largely unchronicled, especially from a scholarly point of view. Sympathetic students or devoted secretaries simply do not make reliable historical records, and the understanding of how liberal education has been changed and implemented in America would be far less obscured, as well as less open to casual errors of interpretation, with a more careful examination of the lives and work of these men.

The second and most fundamental recommendation has been voiced by a minority of scholars (e.g., Guralnick, 1974; Marsden, 1996) but has yet to be considered holistically. The significant developments in liberal education discussed in this historiography have taken place during some of the most ideologically turbulent centuries of recorded history, yet few credit the vast shifts in worldview as having any real influence on those changes. The Judeo-Christian worldview standard in Jeremiah Day's time can no longer be considered anything even approaching dominant in current academic circles, a change which has led to fragmentation of values and goals in an age often described as relativistic and even post-modern. A careful study of how the *Weltanschauung* of the western educational sphere has altered over the past two centuries would provide an invaluable tool in charting the muddied waters of educational debate for the liberal arts; it would at least prevent modern criticism from becoming confused over differing assumptions.

In addition, as with any aspect of historical study, the literature of liberal education would be similarly enhanced by a more careful effort to avoid false dichotomies. Jacoby (1994) astutely quipped that "the history of these disputes is not simply the story of old fogies defending traditional studies and idealistic reformers embracing the future" (p. 93), but his point is often lost in the comparative ease of organizing history by either choosing sides or trying to cover everything outside of a cogent theory (Hutcheson & Kidder, 2011). Until these issues of historical perspective are adequately addressed, our grasp of liberal education as it was and is will be incomplete regardless of how well the remaining topical gaps of scholarship are met.

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Chapter 6
Promoting Effective Teaching and Learning in Higher Education

Rodney A. Clifton, Jeremy M. Hamm, and Patti C. Parker

Higher education in North America is in crisis—once again! In many colleges and universities, students are increasingly complaining about rising tuition fees, and parents are questioning the quality of their children's education. University administrators are concerned about uncertain revenues, professors are worried about their collective agreements, part-time and sectional instructors are concerned about renewing their short-term contracts, and traditional, brick-and-mortar universities are being challenged by massive open online courses (MOOCs) (see, for example, Burke, 2005; Clifton & Rubenstein, 2002; Cote & Allahar, 2007; Hacker & Dreifus, 2010; Massy, 2003; Pakravan, 2006; Sowell, 1993; Vedder, 2004; Zemsky, Wegner, & Massy, 2005).

In response to these concerns, some college and university administrators claim that they need more instructors, fewer tenured professors, more administrators, and, especially, more money, but with fewer constraints on its use. For example, Dr. Emoke Szathmary (2006), who was president of the University of Manitoba in 2006 said: "Were more revenue available universities could … meet the costs of providing a proper education to their students." Eight years later, her successor, Dr. David Barnard, said: "Manitoba can't enjoy the benefit of the best from the best students as long as they're so underfunded. Historically, we've been underfunded compared to other medical/professional universities" (Martin, 2013, A4). Similarly, Dr. Harvey Weingarten, the president of the University of Calgary in 2008, claimed:

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"If you look at the funding in Canadian public universities relative to public universities in the United States, we are really underfunded. The average gap is about $5,000 per student per year. That's huge. Imagine what a university could do if it had another $5,000 for every student to spend every year" (Werb, 2008, p. 12).

But, do more instructors, more administrators, and especially more money really mean that more undergraduate students will graduate with degrees? Over the years, this question has been asked in both Canada and the U.S.A. and the answer has been disheartening. Even with more money, more instructors, and more administrators, fewer than 60 % of the students who enroll in their first-year of college or university, graduate with degrees within 6 years (see Barefoot, 2004; Feldman, 2005; Perry, 2003; Tinto, 2010). Consequently, questions about the nature of undergraduate education are being asked by students, parents, think tanks, and government agencies. As a result, virtually all colleges and universities in North America are being forced to pay more attention to many issues relating to the purpose and process of undergraduate education (Association of American Colleges and Universities, 2007; Association of Universities and Colleges of Canada, 2011; Burke, 2005; Canadian Council on Learning, 2009; Cote & Allahar, 2007; Laidler, 2002; Weingarten & Deller, 2010; Zemsky et al., 2005).

University administrators and instructors typically claim that universities and colleges educate students to become well-educated citizens, which means that they become relatively mature scholars. Specifically, students learn to appreciate ideas, they attempt to understand, evaluate, and interpret ideas and arguments, they develop critical thinking skills, refine their writing skills, and they learn to speak and argue well. Ideally, these educational experiences ultimately shape the lives of citizens (Geertsen, 2003; Rauch, 2013; Vedder, 2004; Wegener, 1978). In this respect, the American philosopher, Mortimer Adler (1988), defines a mature scholar as "a person who has a good mind, well disciplined in its processes of inquiring and judging, knowing and understanding, and well furnished with knowledge, well cultivated by ideas" (pp. 109–110). Of course, the process of disciplining the minds of students by having them engage in scholarship, research, writing, and debating takes a life time, but it begins in earnest when they are undergraduate students.

In this chapter, we consider institutional and individual factors that can potentially help undergraduates become relatively mature scholars, mainly in the Arts and Humanities. We do not consider the specific requirements that are necessary in the professional faculties, such as Education and Social Work, nor do we consider the requirements that are necessary in graduate programs. We use "instructor" to refer to all college and university teachers, whether they are actually classified as instructors, graduate students, or professors. In addition, we use "university" to refer to both colleges and universities.

We begin by examining a few important characteristics of undergraduate education, then we discuss the authority of instructors, and finally we discuss student factors, focusing on the significance of perceptions of academic control and on enhancing these perceptions among at-risk students using a control-enhancing treatment, Attributional Retraining (AR). We show that AR treatments can, in

fact, facilitate undergraduate students' adaptation and success. We conclude by discussing new developments in AR designed to personalize the treatment and ultimately improve the success of students.

Undergraduate Education

Unique Characteristics of Universities

Some critics of undergraduate education assume that it is relatively easy to mold students into well-educated, relatively mature scholars and productive citizens. All that is required is for universities to use reward and accountability systems that are similar to those found in businesses (see, for example, Blumenstyk, 2006; Drucker, 1993; Reeves, 2006). Unfortunately, these critics do not seem to realize that there are substantial differences between businesses and universities that make it much more difficult for young people to function effectively as students than as employees (Clifton & Roberts, 1993, pp. 20–59; Reiter, 1991). In fact, there are at least five differences that help identify the unique challenges faced by university instructors.

First, the objectives of universities are many, uncertain, and often controversial (Bedeian, 1980; Weick, 1976, 1982). Parents, politicians, trustees, students, instructors, and administrators often have different perspectives, thus ensuring that departments and faculties operate with objectives that are complex, shifting, and often conflicting. As a result, it is difficult to determine what the objectives really are, and, consequently, it is almost impossible to determine if and when they have been achieved. Therefore, universities are unlike businesses where profits and customer satisfaction—two mutually supportive objectives—are primary, and where it is relatively easy to determine if and when these two objectives have been achieved.

Second, universities are loose organizations characterized by rights and responsibilities that are not clearly specified (Bedeian, 1980, p. 98; Weick, 1976, 1982). As a result, administrators have difficulty directing the activities of instructors, most of whom have, or believe they have, considerable academic freedom, which implies that administrators have difficulty enforcing teaching standards. In turn, instructors have difficulty coordinating the activities of students, particularly undergraduates, to achieve the many amorphous educational objectives. In comparison, employers in businesses have much less difficulty directing the work of employees to meet their relatively few and more precisely defined objectives.

The third distinctive characteristic of universities is the age homogeneity of the majority of students in a typical undergraduate classroom, where the bulk of students are between 17 and 22 years old. This characteristic is not common in businesses where people occupying a status are not generally the same age. Although age homogeneity helps standardize the teaching and evaluation of students, it increases the potential of students resisting their instructors' demands (Clifton, 2012; Clifton

& Roberts, 1993; Perry & Smart, 2007). Resistance is less likely to occur in businesses because, as noted above, the objectives are more clearly defined, older and more experienced employees show younger and less experienced employees "the ropes," and employees are paid to serve the needs of the business (see Reiter, 1991, pp. 131–161).

The fourth distinctive characteristic of universities concerns the interaction patterns between students and instructors. Specifically, instructors must be attentive to the demands of inquisitive students while keeping track of all the other students, some of whom are attempting to avoid surveillance as they send text messages or play video games while in class (Clifton, 2012). There is little doubt that instructors have difficulties managing the activities of 200 or more students in large lecture halls. Maintaining authority under such circumstances is not typical of businesses where people most often interact with each other sequentially. In business, employees typically serve one customer at a time, and employers typically reward or reprimand one employee at a time.

Finally, the changing identity of students complicates the work of instructors far more than it complicates the work of employers (Clifton, 2012). Generally, over the last 30 years or so the perceptions of young people have shifted from identities derived from their social roles (e.g., friend, sister, student, and employee) to identities expressing their individuality (e.g., authenticity, dignity, and myself) (Bergquist, 1993; Clifton, 2012; Hacker & Dreifus, 2010; Nisbet, 1971). "To thine own self be true" has become a guiding principle for young people, and when asked about their responsibilities in university, undergraduates may reply "Instructors are paid to serve my academic needs." For instance, students often request responses from their instructors by e-mail or telephone at any time of the day or night (Clifton, 2012). This attitude does not exist in businesses where employees are paid to serve customers, at a specific time, and who, in turn, pay for legitimate services and products.

To accommodate the changing self-identities of students, universities have expanded their objectives to help them "self-actualize" (Clifton, 2012; Zemsky et al., 2005) by, for example, hiring increasing numbers of students' counselors and advocates. In response to the increased power of students, instructors often strike a "non-aggression pact" where they will not ask too much from their students and students will not expect too much from their instructors (Reeves, 2006). With such unwritten agreements, instructors can concentrate on their research, scholarship, and publications—the tangible outcomes that universities typically value—and students can concentrate on getting reasonable grades while having time for other important activities in their lives. Such bargaining is unlikely to happen in businesses where employers tell employees that the business objectives must be met or the business will fail, their salaries reflect the quality of their work, and their work determines whether or not they will be retained, promoted, or fired.

These five interrelated characteristics mean that universities are unique even within service-oriented organizations. For this reason, universities cannot be administered in the same way that businesses are administered. In other words, the principles that establish young people's commitment to their jobs are not directly

applicable for establishing their commitment to their university education. In order to gain students' commitment, administrators and instructors must realize that both teaching and learning are cooperative responsibilities (Perry & Smart, 2007).

Educating Undergraduates is a Shared Responsibility

In undergraduate education, universities have three interrelated responsibilities: selecting, evaluating, and teaching groups of relatively young students. The selection and evaluation functions are largely the responsibilities of departments and faculties, while the teaching is largely the responsibility of individual instructors (Perry & Smart, 2007).

Obviously, to effectively educate students, it is necessary to carefully select those who are able and willing to learn. That is, students must be willing to change the way they think, feel, and act. There is little use spending resources, time and money, attempting to educate students who are unable to acquire new knowledge or unwilling to change their thinking, attitudes, or behaviors (Sowell, 1993, pp. 122–131; Wegener, 1978, p. 146). To a considerable extent, departments and faculties select students on criteria that are more-or-less appropriate. High quality programs use a combination of high school grades, standardized examinations (SATs and ACTs), and interviews to admit students; lower quality programs use fewer criteria and/or lower standards.

Selecting good students is a necessary, but not a sufficient condition for their scholarly transformation. Excellent programs evaluate students on criteria that have some degree of external validity. James Coleman (1993), for example, makes this point explicit, stating "When an external criterion is imposed, effort toward learning begins" (p. 535). For this reason, most professional programs require students to pass rigorous admission tests (e.g., MCAT) and certification exams (e.g., bar exam). In the absence of external exams for admission and certification, instructors are, to a degree, in a conflict of interest because they are responsible for both establishing and maintaining the standards of scholarship, which gives students the opportunity to "bargain down" their instructors' expectations as noted previously (see Nisbet, 1971, pp. 30–40).

In this respect, universities are called "loosely coupled institutions" by sociologists, meaning that instructors have considerable academic freedom in constructing and teaching their courses, and they are not necessarily constrained by their departments and faculties (Perry & Smart, 2007; Sowell, 1993; Terenzini, 1996; Vedder, 2004; Weick, 1976, 1982; Wilms & Zell, 2003). In fact, Coleman (1973) says that universities are "organizational anachronisms," largely because there are few ways of ensuring that instructors, especially tenured professors, teach well. Despite this challenge, departments and faculties have the responsibility of designing and approving courses, assigning instructors to teach courses, and, of course, ensuring that instructors are good, if not excellent, teachers (Coleman, 1973; Sowell, 1993, p. 202; Vedder, 2004, p. 116).

A number of scholars have proposed ways of improving undergraduate teaching, but there has been considerably more talk than action largely because the incentives are larger for conducting research and obtaining research grants than for teaching undergraduate students (see Feldman, 1998; Hattie, 2009; Perry & Smart, 2007; Weimer, 1990). Many of these scholars claim that scholarship and teaching are linked mainly because scholarship results in articles and books that are intended to educate both colleagues and students. Nevertheless, the strength of this linkage is relatively low (Sowell, 1993, pp. 223–225). However, Robert Nisbet (1971) says that "Research develops with teaching just as teaching develops with research" (p. 79). Thus, if students see that their instructors are competent as both teachers and scholars, they are more likely to value the knowledge and skills they are learning. Moreover, if scholarly standards are consistent across courses and programs, students are more likely to appreciate the educational expectations of their instructors and the scholarly culture of the department, the faculty, and the university.

Some Principles of Effective Teaching

In order to create scholarly standards, instructors must clearly outline their expectations for students at the beginning of the term. Specifically, students must understand how and why they are required to learn the material, gain new insights, develop new skills, and change their attitudes and behavior before they begin doing course-work (Davis, 2009; Kuh, Kinzie, Schuh, & Whitt, 2005). For this reason, the rationale for the knowledge and skills to be acquired are presented by good instructors in course syllabi, which includes course goals, objectives, assignments, and examinations, all of which are established so instructors can evaluate how successful their students have been in learning the material.

In designing courses, instructors must ensure that the courses are intellectually demanding. In fact, Bredemeier and Bredemeier (1978) assert that "[a] condition for any learning or changing is to be dissatisfied with the present state of affairs. Frustration . . . is a necessary condition for changing" (p. 168). But, in challenging students, the objectives must not be set so high they cause undue stress, and they must not be set so low they bore students (Clifton, Mandzuk, & Roberts, 1994; Clifton & Roberts, 1993; Geertsen, 2003; Kramer, 1991). To ensure that students are appropriately challenged, instructors can use, for example, the taxonomy of educational objectives developed by Anderson and Krathwohl (2000), which has six hierarchical levels: remembering, understanding, applying, analyzing, evaluating, and creating. Obviously, introductory courses will focus on the lower levels—remembering, understanding, and applying—and higher level courses will focus on the middle and upper levels—applying, evaluating, and creating. Put simply, effective instructors set objectives that exceed the students' current level of knowledge, but not so high that they create debilitating anxiety.

When courses are challenging at the appropriate level, students will be moderately frustrated, but some may experience anxiety, fear, and perhaps even anger, as

they attempt to acquire the new knowledge and skills (Bredemeier & Bredemeier, 1978). Both instructors and administrators must expect a range of emotional responses from students, particularly first-year students, because some will have low tolerance for frustration while others will have high tolerance. Consequently, department heads, deans, and other administrators should not necessarily interpret the students' expressions of frustration, or perhaps anger, as indicating that an instructor is a poor teacher. When students experience anxiety and frustration, at least in moderate degrees, they should neither be rewarded nor punished as long as the intellectual demands are reasonable; the students are neither bored nor overly anxious. The fact that instructors give students course syllabi that have been vetted by departmental and faculty committees (where they exist), and that students have the necessary dispositions and skills determined by the selection process, means that at least most students will be capable of completing the course work if they invest the requisite time and effort.

Because there is variability between students in their responses to challenges, instructors must be empathetic to the students' varying perspectives, especially in first-year courses (Cornelius-White, 2007; Noddings, 1992, 2003). Empathy means that instructors do not lower their expectations because students will be bored, nor do they raise their expectations because students will become overly anxious. Rather, effective instructors challenge their students without boring them or creating undo anxiety. For this reason, instructors who tell first-year students that one-third of them will probably drop out by the end of the first semester should *not* be supported by departments and faculties. Rather, departments and faculties should encourage instructors to inform students that they must work hard because their expectations will increase in lock-step and slightly ahead of increases in the students' performances (Clifton & Roberts, 1993). In other words, the students will be continually challenged by the course material.

In turn, the students' effort to meet their instructors' expectations must be rewarded no matter how hesitant that effort is at the beginning. This is especially important for first-year and other at-risk students. Mastering disciplines and becoming scholars is not achieved during initial attempts at learning something new and complex; rather, mastery and scholarship are best achieved with persistent practice and dedicated work over relatively long periods of time, at least the 3 or 4 years that are required to complete an undergraduate degree. Each time students move closer to mastering new knowledge, developing new skills, and changing their behavior in a scholarly direction, they should be rewarded by instructors, administrators, and other students. When students act in ways that are not congruent with the goals and objectives of courses, the appropriate response from both instructors and administrators must be to insist on the desired changes and not, initially, to question the course objectives or the competency of the instructors.

Following these principles essentially means that effective teachers work to preserve the dignity and self-respect of students. In this respect, John Rawls (1971, p. 62) points out that people protect their dignity and self-respect at almost any cost. Thus, when the difficulty of courses comes close to threatening these core values of students, they will often need support from instructors, administrators,

and especially from other students. Under demanding circumstances, as social psychologists have noted, social support gives students resources that help them perform at scholarly levels beyond what they previously believed was possible (see Bredemeier & Bredemeier, 1978, p. 177). In fact, this is one of the reasons that team-based learning has been particularly successful in university courses (see, for example, Barkley, Cross, & Major, 2005; Clifton, Cranston, Long, & Mandzuk, 2013; Michaelsen, Knight, & Fink, 2002).

Supporting the Dignity and Self-Respect of Students

John Rawls (1971) describes the conditions that are required to support the self-respect of people "The Aristotelian Principle" because Aristotle first proposed this principle in the *Nicomachean Ethics* almost 2,400 years ago:

> [O]ther things equal, human beings enjoy the exercise of their realized capacities (their innate or trained abilities), and this enjoyment increases the more the capacity is realized, or the greater its complexity. The intuitive idea here is that human beings take more pleasure in doing something as they become more proficient at it, and of two activities they do equally well, they prefer the one calling on a larger repertoire of more integrate and subtle discriminations. (p. 426)

In fact, Aristotle suggests that three conditions are necessary for students to maintain their dignity and self-respect. First, the subject matter students are studying must be *important*. In other words, students must understand that their educational activities are significant for their scholarly growth and development, and that this growth and development is important for their long-term success in society. Second, the scholarly activities must be *challenging*. If the scholarly activities are either too easy or too difficult, the students' dignity and self-respect will be threatened. Finally, students must perform the scholarly activities *competently*. In other words, students must have the requisite ability, skills, and motivation to overcome the challenging expectations set by their instructors.

Figure 6.1 represents The Aristotelian Principle using a graph where the X-axis represents the intellectual skills of an undergraduate student and the Y-axis represents the instructor's expectations for the student (Clifton, 2009; Csikszentmihalyi, 1997). It is assumed that an empathetic but reasonably demanding instructor is teaching only one student and she understands, and accepts, the goals and objectives of the course. As such, both axes begin at relatively low levels in Anderson and Krathwohl's (2000) taxonomy and progress to moderate levels because this student is just beginning her degree program. In terms of the taxonomy, this student is already familiar with the major arguments in the discipline at both the remembering and understanding levels, but she cannot yet adequately apply, analyze, evaluate, or create arguments at the level of a mature scholar.

The diagonal arrow represents the proposed progression towards the course objectives that the instructor expects the student to make. *Anxiety* is written at the top left and *boredom* is written at the bottom right indicating that if the instructor
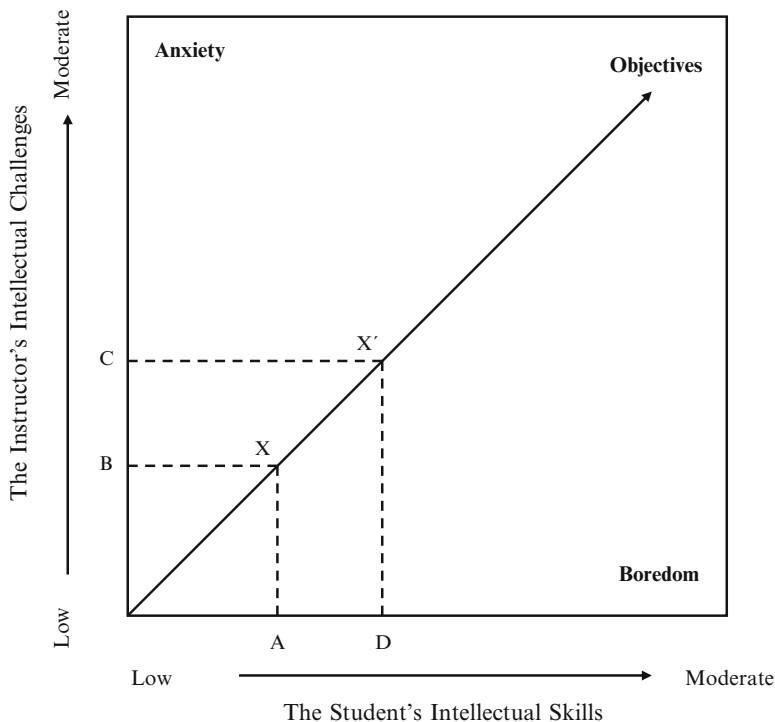
Fig. 6.1 The Aristotelian Principle applied to undergraduate teaching

sets objectives that are far above the student's intellectual skills, the student will become anxious; in contrast, if the instructor sets objectives that are far below her intellectual skills, she will become bored. In both cases, the student has *not* been respected and her dignity has been threatened. The diagonal line represents the balance between anxiety, on the one hand, and boredom, on the other, that an empathetic but demanding instructor establishes for this particular student. The general teaching principle is that when instructors set challenges, within reason, above the level of the students' intellectual skills, they strive to perform at that level, developing the necessary intellectual skills and, with hard work and dedication, meeting the expected objectives (Clifton, 2009).

Now, assume that this hypothetical student performs at a specific level indicated by X, which is a balance between her intellectual skills, A, and the challenging objectives set by her instructor, B. Because this student is comfortable, neither being overly anxious nor overly bored, the instructor sets higher challenges, C, increasing the student's anxiety, causing her to strive and to increase her intellectual skills to D, resulting in her performing at a new and more advanced level, X′. For this particular student, the distance between B and C is a moderate challenge, whereas it may be too small or too large for other students who have different levels of tolerance for anxiety and boredom.

Nevertheless, this particular student has worked hard to learn the complex material, improve her intellectual skills, and as a result, both her dignity and self-respect have been enhanced. Specifically, she has the respect of her instructor and other students, and she has self-respect because she has successfully met the new challenges set by her empathetic but demanding instructor. This student, in fact, should be enjoying her course and is on her way to becoming a mature scholar (see Pekrun, Goetz, Daniels, Stupnisky, & Perry, 2010). In turn, her instructor is helping her achieve this goal with her dignity and self-respect intact, perhaps even enhancing these dispositions (Clifton, 2009).

Obviously, this figure is a heuristic device to illustrate a process that is much more complicated, especially because undergraduates are often in classes with many other students. As suggested earlier, undergraduate students, particularly first-year students and other at-risk students, are likely to vary in their tolerance for anxiety and boredom; some will expect courses to make small incremental steps while others will expect larger increments with more intellectually challenging material. This model suggests that it is much easier to teach one student, and it is much more difficult to provide an optimal combination of both intellectual challenges and empathy for large groups of diverse students, particularly those in first-year courses. Nevertheless, if empathetic and demanding conditions are established, authoritative and respectful instructors along with capable and resourceful students, who have been specifically selected for the degree program, are more likely to cooperate in effective teaching and learning relationships (see Coleman, 1988, 1993; Perry & Smart, 2007). Instructors and students will cooperate with one another, which will, in turn, help both students and instructors preserve and enhance their dignity and self-respect. Nevertheless, even when students and instructors share many academic interests, there still may be underlying tension that arises about the authority of instructors.

The Authority of Instructors

In modern, loosely-structured universities, teaching is more-or-less a continuous effort by instructors to maintain high academic standards while being empathetic towards students (Clifton, 2012; Perry & Smart, 2007). Even though course objectives are included in syllabi, there is, nevertheless, still the potential for tension to exist between students and instructors, which raises an important question for students: "Why should we accept the right of instructors to direct our conduct?" Instructors have three possible ways of answering this question: coercion, persuasion, and authority (Clifton & Roberts, 1993).

Coercion occurs when instructors are able to impose their will on students despite their resistance. In using coercion, instructors are saying: "If you do not do what I ask, I will force you to do it." The assumption behind coercion is that instructors can control critical resources, such as grades and degrees, so that students must comply to get what they want without suffering intolerable losses to their

dignity, self-respect, and academic success. The problem with coercion, however, is that it breeds resentment and alienation (Clifton et al., 1994). As well, coercion exemplifies a dubious moral stance for instructors who are committed to the ideal that universities are responsible for "searching for the truth" in both research and teaching (Rauch, 2013). Consequently, coercion does not engender the "give and take" that is necessary to reach the "truth," and it does not engender the stable and cooperative relationship between students and instructors that is necessary for effective teaching and learning. Essentially, coercion threatens the students' dignity and self-respect and is therefore rejected as a means of gaining compliance.

Persuasion, in turn, is based on the assumption that by negotiating with students, instructors can reach an agreement that will align with their objectives. In using persuasion, instructors answer the question asked by students, "Why should I study for this course?" by saying: "Because the rewards I am offering exceed the value of the freedom I am asking you to sacrifice." Given the course objectives, instructors can, within the constraints imposed by departmental and faculty regulations, vary their payment and students can vary the value of their freedom. Course syllabi are the written contracts that limit bargaining, so most students and instructors consummate agreements that are more-or-less acceptable. Nevertheless, persuasion can still create the conditions for continuous negotiations on many aspects of classroom life. Consequently, instructors risk having to negotiate and justify to each student in the classroom every activity that takes place. Such bargaining can consume considerable time and lead to treating students unequally because some are better negotiators than others. For these reasons, persuasion is an inefficient way of gaining compliance from students and is also rejected.

The final way for instructors to gain compliance from students is by using authority, which entails voluntary compliance and is rooted in students and instructors sharing objectives and mutually accepting the existing institutional structure. In relationships based on authority, the question, "Why should I follow your directives?" is answered with, "We agree that the department, faculty, university, and my expertise give me the right to make these legitimate requests of you, and as students, you are obligated to comply with them." A distinctive advantage of classrooms based on authority is that resources are *not* consumed by bargaining as when persuasion is used, and instructors are not continually trying to overcome resistance as when coercion is used.

In elaborating on the concept of authority, the sociologist Max Weber (1947) identified three distinct types: traditional, charismatic, and rational-legal authority. Traditional authority is based on the belief that, as guardians of the university's tradition, instructors have a legitimate right to make demands of students. In appealing to tradition, an instructor responds to the hypothetical question, "Why should I?" by saying: "It is my right to tell you, and it is your duty to comply because traditionally undergraduate students have complied with the legitimate requests from their instructors."

Charismatic authority, in contrast, is legitimated by the respect that people have for the attributes of individuals. Simply, charisma implies that instructors truly care about their students (Cornelius-White, 2007; Noddings, 1992, 2003). Thus,

the language of charismatic authority is filled with the connotations of altruism, care, and empathy. In fact, empathetic authority is a better term because charisma is often associated with divinely-granted attributes while empathy reflects the capacity that most people have for vicariously experiencing and responding to the feelings of others. For this reason, we use empathetic authority, which is personal and diffuse because it is based on instructors' psychological dispositions and not on their positions in a department, faculty, or university. In appealing to empathy, an instructor may respond to the hypothetical question from students, "Why should I?" by saying: "Because I value you as university students, and you will be better off if you follow my advice."

The third type of authority, rational-legal, has two dimensions: expert (rational) and official (legal) authority (Clifton & Roberts, 1993). Expert authority is based on access to technical knowledge and experience that makes it reasonable for students to comply within the realm of an instructor's expertise and experience. Official authority, on the other hand, is inherent within a position held by instructors in departments, faculties, and universities. That is, instructors are identified by specific titles—assistant professors, associate professors, and the like—and they are given the legal or official right to demand compliance from students by virtue of their position. In using this type of authority, instructors say something like, "It is my right to ask for compliance, and it is your duty to comply because due process (our legal responsibilities) and rational considerations (my expertise and experience) have been legitimately used to define our respective obligations."

The essence of rational-legal authority centers on students and instructors sharing objectives, instructors possessing the expertise and experience necessary for attaining the objectives, and both students and instructors cooperating within the legitimate university structures of departments and faculties that grant them legal rights and responsibilities. In this respect, the CEO of the British Higher Education Academy, Professor Paul Ramsden (2008), supports this argument when he says:

> The most effective higher education environments are ones in which students are diligently involved as part of a community of learners... As part of this they work together with academics to enhance teaching, assure quality and maintain standards. Joint responsibility is the key to ensuring a successful future for our universities and colleges.

Thus, in extending Max Weber's (1947) typology, university instructors have four dimensions of authority at their disposal. Two of these, legal and traditional, are institutional and are derived from the legitimate authority vested in departments and faculties. The other two, expertise and empathy, are individual and are derived from instructors' cognitive, affective, and behavioral characteristics. Figure 6.2 represents both institutional and individual authority as a typology which suggests that instructors can use resources that are vested in both the institution and the individual to secure compliance from students. The best situation for both instructors and students is represented by the cell at the upper left-hand corner where both the institution and the instructor have substantial legitimacy, and the worst situation is represented by the cell at the bottom right-hand corner where the institution and the instructor have little legitimacy. This typology guides us to ask an important

	Institutional Authority			
	High Legal		Low Legal	
	High Traditional	Low Traditional	High Traditional	Low Traditional
High Expertise				
Low Expertise				
High Expertise				
Low Expertise				

Individual Authority — High Empathy / Low Empathy

Fig. 6.2 A typology of institutional and individual authority

question: What can be done to support both institutional and individual authority so that instructors are more effective teachers?

Institutional Authority

Generally, when students first enter classrooms, they encounter instructors whose personal (empathy) and professional (expertise and experience) dispositions are largely unknown, except, of course, by reputation. Thus, at the beginning of each academic term, instructors need to rely, to a considerable degree, on institutional authority. For this reason, instructors will most likely introduce themselves to their students by using an honorific title: "Professor" if they hold a legitimate university position (assistant, associate or full-professor), and "Doctor" if they do not hold a legitimate institutional position and they need to rely on their expertise. For this reason, we provide three suggestions for improving the institutional authority of instructors.

First, it is necessary for departments, faculties, and universities to establish a restricted set of clearly articulated objectives for undergraduate courses and programs. As noted, the goals of departments and faculties are often unstated and may be as diverse as offering intellectual development, job preparation, and the development of the students' authentic selves. However, courses and programs cannot reasonably be expected to achieve such diverse, often amorphous, and sometimes conflicting objectives without diluting their institutional authority. Consequently, departments and faculties need to limit their objectives to relatively few that can be realistically achieved by students.

Second, instructors and administrators must ensure that these objectives are clearly defined and are meaningful to students at their particular university level (1st, 2nd, 3rd years, etc.). In addition, these objectives should be achievable without causing undue anxiety, on the one hand, or undue boredom, on the other. Moreover, instructors and department administrators must evaluate the extent to which students are meeting the agreed-upon objectives. Obviously, if the objectives are not being met, corrective action will be necessary.

Third, it is important to carefully and precisely define the rights and responsibilities of students, instructors, administrators, and support staff. To be credible, institutional authority must be supported by clearly defined statuses and explicit offices with specified rights, duties, and responsibilities. Similarly, violations of the legitimate responsibilities that institutional members have must be corrected. This implies that the institutional structure of universities must be tightened, which is in contrast to the historical trend of loosening the institutional structure of universities.

Instructors, of course, not only have access to institutional authority, they have individual authority, represented, for example, by a doctorate degree in the subject they teach, the empathy they have for students, and their professional experiences. So, besides improving the institutional authority of universities, the individual authority of instructors must be improved, and the following four recommendations are aimed at enhancing instructors' expertise and empathy (Feldman, 1989, 1990).

Individual Authority

First, in E.D. Hirsch's (1988) words, instructors must be "culturally literate," with specific expertise in the discipline they teach. In essence, university teachers must be members of the intellectual elite with the ability to speak competently on a number of topics related to their disciplinary expertise (Rauch, 2013).

Second, instructors must be adequately versed in pedagogy, theories of learning, and measuring achievement. All of these topics, which are found in educational psychology, are necessary for developing and delivering effective courses and degree programs. In other words, well-designed courses and programs will be compatible with the students' academic capabilities, and they will be delivered in ways that are most likely to increase their scholarly development.

Third, instructors must be knowledgeable about the social organization of classrooms (Barkley et al., 2005; Clifton et al., 2013; Michaelsen et al., 2002). Both teaching and the management of students' behavior are, essentially, social activities that must be understood by instructors. This sociological reality has become increasingly true as universities have shifted towards more loosely structured organizations (see Bedeian, 1980; Bergquist, 1993; Weick, 1976, 1982). Research on these issues is found in the sociology of education literature, and instructors should become familiar with the ways groups function so they can manage the social conditions created by groups of students.

Finally, instructors must display genuine empathy for their students. As the educational philosopher Nell Noddings (1992, 2003) writes, good teaching "touches the souls" of students. To do this, empathetic instructors are warm and supportive, helping students maintain their dignity and self-respect as budding scholars. More specifically, as Aristotle has noted, empathetic instructors show students that their work is *important*, *challenging*, and *that they have the requisite competencies to excel* if they expend the necessary time and effort.

Of course, promoting the authority of instructors is only one method of improving undergraduate education. As outlined earlier, universities must also ensure that they admit only the most promising students, that their instructors use evidence-based teaching techniques, and that they evaluate students on appropriate educational objectives (Anderson & Krathwohl, 2000). In doing this, universities must ensure that the students' dignity and self-respect are maintained while empowering instructors with appropriate authority to teach effectively.

But, even as universities strive to realize these ideals, many capable students experience considerable academic difficulties; these students are at-risk of failing courses and dropping out of university. In other words, good teaching is necessary, but not sufficient, in promoting students' academic achievement and scholarly progress, particularly during the first-year when many of them face a variety of novel challenges. For instance, freshman students can become overwhelmed by new tasks, pressures to succeed, occasional failures, unstable social relationships, and important career choices (Perry, 1991, 2003).

In fact, survey evidence shows that by the end of first-year university, between 20 and 30 % of students have dropped out, and fewer than 60 % graduate with degrees within 6 years (Barefoot, 2004; Feldman, 2005; Tinto, 2010). For this reason, Perry and his colleagues suggest that there is a *paradox of failure* wherein talented and motivated students fail to succeed in first-year university (Perry, 2003; Perry, Hladkyj, Pekrun, & Pelletier, 2001). This paradox is clearly illustrated by Malcolm Gladwell's (2013) story about Caroline Sacks, a student who enrolled in the Faculty of Science at Brown University:

> Sacks sailed through high school at the top of her class. She took a political science course at a nearby college while she was still in high school, as well as a multivariant [sic] calculus course at the local community college. She got As in both as well as an A in every class she took in high school. She got perfect scores on every one of her Advanced Placement pre-college courses. (p. 69)

Even though Sacks loved science and was capable, she began doing poorly during her first-year at Brown. Not unlike many other intellectually talented and motivated first-year students, Caroline Sacks enrolled in a first-rate university where, contrary to her experience in high school, she was no longer the top student. To her surprise, she was below average; in fact, she was at-risk of failing. For the first time in her life, Ms. Sacks was scrambling to keep up and felt overwhelmed by a seemingly never-ending stream of demanding academic work. After struggling for a year, with considerable anxiety, she transferred to a program in a less demanding faculty. Fortunately, Caroline Sacks graduated from Brown, but not without having her

dignity and self-respect threatened by the academic expectations by her first-year instructors in the Faculty of Science.

What caused Ms. Sacks to struggle during her first-year? Undoubtedly, her struggles were multifaceted, similar to the struggles and anxieties of many at-risk students. However, we suggest that students' perceptions of academic control have powerful effects on their academic performances. In short, students who believe they are "in control" are much better equipped to succeed than students who believe they are "out of control."

Perceived Control

In the psychological literature, perceived control is a well-recognized construct with a long and rich history. Over the past 50 years or so, researchers have explored the influence of perceived control using labels such as competence motivation (White, 1959), locus of control (Rotter, 1966), personal causation (DeCharms, 1968), learned helplessness (Seligman, 1975), mastery (Dweck, 1975), self-efficacy (Bandura, 1977), and primary and secondary control (Rothbaum, Weisz, & Snyder, 1982) among others. Although the definition of perceived control has varied over time (Skinner, 1996), we use a simple definition consistent with past theory and research: perceived control concerns the beliefs that people hold about their capacity to predict and influence important events in their lives (Perry, 1991, 2003). For university students, the important events largely concern their short-term academic successes and the long-term prospects of completing their degrees and obtaining rewarding jobs.

The theoretical work on causal attributions by Bernard Weiner (1985, 1995, 2006, 2012)—called attribution theory—has arguably had the greatest impact on our understanding of the ways in which individuals interpret their successes and failures since the pioneering work of Fritz Heider (1958; see Fiske & Taylor, 1991). Weiner's theory is based on the conception that humans are strongly motivated to understand why important, negative, and unexpected events occur in their lives. Generally, people attribute such events to one or more causes (Perry, Stupnisky, Daniels, & Haynes, 2008), which are referred to as causal attributions. Thus, when intelligent and motivated students, like Caroline Sacks, struggle and still come close to failing, they typically attempt to understand why these negative outcomes have occurred.

Fundamental to Weiner's (1985, 1995, 2006, 2012) theory, is that attributions are underpinned by three dimensions as illustrated in Fig. 6.3. The first dimension is *locus of causality*. Weiner argues that a perceived cause can be either internal (e.g., effort) or external to a person (e.g., room temperature). The second dimension is *stability*. Some causes are perceived as being stable (e.g., aptitude), and others are perceived as being unstable (e.g., fatigue). Finally, causes vary in their *controllability*. Some causes are perceived as being controllable (e.g., arriving late) while others are perceived as being uncontrollable (e.g., exam difficulty). People who perceive

	Internal		External	
	Stable	Unstable	Stable	Unstable
Controllable				
Uncontrollable				

Fig. 6.3 A typology of Weiner's three causal dimensions: locus of causality (internal vs. external), stability (stable vs. unstable), and controllability (controllable vs. uncontrollable)

that a cause of an important event is internal, unstable, and controllable (such as *not* studying enough), are more likely to change their behavior and do better than people who believe that a cause is external, stable, and uncontrollable (such as a professor's inability to teach well).

Weiner (1985, 1995, 2006, 2012) suggests that there are many cognitive, affective, and behavioral consequences associated with each of these three dimensions. The locus dimension, for example, has implications for affective outcomes involving self-esteem and pride. When a person attributes a failure to an internal cause (e.g. ability), the person's self-esteem and pride are lowered because the person believes that it is something about him- or her-self that caused the undesirable outcome. Conversely, if a failure is attributed to an external cause (e.g., professor quality), the person's self-esteem and pride remain relatively unaffected. Following a successful performance, however, attributing the success to an internal cause results in an increase in a person's self-esteem and pride, but attributing the success to an external cause has little effect on these two affective states.

Weiner also says that the stability of a cause is significant because it affects an individual's expectation of future success, which triggers either hopefulness or hopelessness. If a failure is attributed to a stable cause (e.g., aptitude), a person's expectation of future success is reduced, and the person may feel hopeless, but if a failure is attributed to an unstable cause (e.g., effort), the person may feel hopeful.

Finally, Weiner asserts that the controllability of a cause drives the cognitive outcome responsibility in addition to several affective outcomes, including guilt, shame, sympathy, anger, and gratitude. Thus, attributing failure to a controllable cause (e.g., effort) as compared with an uncontrollable cause (e.g., aptitude) has significant implications. Specifically, attributing failure to insufficient effort (controllable) results in both responsibility and guilt, whereas attributing failure to low aptitude (uncontrollable) leads to a decreased perception of responsibility but an increased feeling of shame.

Most relevant to first-year and other at-risk students, the attributions they ascribe to important outcomes (e.g., exam failure) have considerable implications for their subsequent perceptions of control and ultimately to their academic success (see Perry, Hall, & Ruthig, 2005; Perry et al., 2008). In particular, attributing failure to controllable factors (e.g., insufficient effort, poor strategy) enhances perceptions

of control over time, whereas attributing failure to uncontrollable factors (e.g., low aptitude, exam difficulty) erodes perceptions of control. In support of this claim, Hamm, Perry, Chipperfield, et al. (2014) have shown that students who attributed their poor academic performance to controllable factors *increased* their perceptions of control over the course of an academic year, while students who attributed their poor performance to uncontrollable factors *decreased* their perceptions of control. These effects remained significant and important when pre-existing differences in perceived control were statistically controlled. In sum, evidence suggests that causal attributions are an important precursor to perceptions of control, which in turn, is a major determinant to students' academic performances and ultimately to their success in university.

Perceived Control Facilitates Academic Success

Extensive research has examined the influence of perceived control in classroom settings ranging from elementary schools to universities (Perry, Hladkyj, et al., 2005; Skinner, Connell, & Zimmer-Gembeck, 1998; Skinner, Wellborn, & Connell, 1990). Despite the divergent settings and ages of students, the effects of perceived control have been remarkably consistent. Our focus is on the benefits of perceived control for university students, particularly those who are at risk of academic failure.

Perceptions of control affect students' cognitions and motivation. High control students exert more effort, report higher motivation, are more optimistic, and believe that they are more successful than their low control peers (Perry et al., 2001; Ruthig, Haynes, Perry, & Chipperfield, 2007). Perceived control is also linked to metacognitive strategies. Specifically, students who report being in control are more likely to use self-monitoring practices, engage in cognitive elaboration by relating course material to their existing knowledge, and think critically about the validity of the content they are studying (Cassidy & Eachus, 2000; Perry et al., 2001; Stupnisky, Renaud, Daniels, Haynes, & Perry, 2008). As well, students' perceptions of control are related to increased positive emotions and reduced negative emotions. High-control students experience more enjoyment and less boredom in their courses than low-control students (Pekrun et al., 2004, 2010; Perry et al., 2001). Not surprisingly, they also report more happiness, joy, hope, and pride; at the same time, they report less anxiety, helplessness, anger, and shame (Hall, Perry, Ruthig, Hladkyj, & Chipperfield, 2006; Pekrun et al., 2004; Perry et al., 2001; Schönwetter, Perry, & Struthers, 1993).

Of course, the most critical outcome for students is their grade point averages (GPA), which represents a relatively objective measure that, in turn, predicts their future academic performances, occupational status, and incomes (Strenze, 2007). The critical question is: Do high-control students who believe they can influence their academic achievement actually attain higher grades than their low-control peers? Perry and his colleagues (2001) show that perceived control measured in the first term of a course is positively related to the students' final course

grades measured 7 months later. High-control students, in fact, outperformed their low-control classmates by roughly two levels in letter grades: low-control students averaged C+, whereas high-control students averaged B+. The effect of perceived control remained strong even when students' incoming high school grades were statistically controlled.

Perry and his colleagues have replicated and extended these results by exploring whether or not perceived control affects students' broader measures of academic achievement. Perry et al. (2005), Hall, Perry, Ruthig, et al. (2006), Ruthig et al. (2007), and Stupnisky et al. (2008) showed that perceived control assessed in the first term of the academic year positively predicts students' cumulative GPAs at the end of the academic year. Further, Perry, Hladkyj, Pekrun, Clifton, and Chipperfield (2005) have shown that students' perceived control assessed in the first term of their first year was positively related to their GPAs at the end of the first, second, and third years, showing, once again, that high-control students achieve better GPAs than low-control students. A meta-analysis by Richardson, Abraham, and Bond (2012) support these findings and show that perceived control is the strongest psychosocial predictor of GPAs for university students. Even more impressive, the influence of perceived control on cumulative GPAs remains significant when pre-existing aptitude differences (i.e., high school grades/SAT/ACT) have been controlled.

Finally, perceived control affects students' persistence in university. Not surprisingly, students who report being in control are less likely to withdraw from courses (Hall, Perry, Ruthig, et al., 2006; Perry, Hladkyj, et al., 2005; Ruthig et al., 2007) and more likely to remain in university than their classmates with less control (Perry, Hladkyj, et al., 2005). Thus, in addition to achieving higher GPAs than their low control peers, high-control students are more likely to complete courses and return to university in subsequent years. In summary, there is little doubt that perceptions of control play a vital role in the academic achievement and persistence of university students, particularly during the challenges they experience in transitioning from high school to university. Interestingly, however, perceived control may benefit individuals with certain characteristics more so than others.

Who Benefits Most?

Put simply, the research literature indicates that perceptions of control advantages some students more than others, such as those who are preoccupied with their failures or who maintain an adaptive emotional state (low boredom, low anxiety, or high enjoyment; Perry, Hladkyj, et al., 2001, 2005; Ruthig et al., 2008). Most pertinent to administrators and instructors, however, is research suggesting that good teaching may fail to benefit low-control students who are in the greatest need of assistance.

In an early laboratory study, Perry and Dickens (1984) examined the interaction between teaching quality (ineffective, effective) and perceived control (low, high). These researchers manipulated perceived control by providing students with either

unpredictable (low control) or predictable (high control) failure feedback on a test. Not surprisingly, the high-control students who received effective instruction outperformed their peers who received ineffective instruction. But, the low-control students who received effective instruction did not perform significantly better than their peers who received ineffective instruction. Hence, these results suggest, somewhat paradoxically, that good teaching fails to help low-control students who need the most help.

A limitation of Perry and Dickens (1984) study was that it was cross-sectional; the students received a lecture and wrote a test in one session. Consequently, studies by Perry, Magnusson, Parsonson, and Dickens (1986), Perry and Dickens (1987), and Perry and Magnusson (1989) replicated and extended these findings by demonstrating that this pattern extended to performance over time. Collectively, these studies demonstrated that, although high-control students benefit from effective (vs. ineffective) instruction, low-control students do not. Thus, it appears that good teaching is *not* necessarily an effective way of helping students who are at risk of academic failure; in other words, low-control students likely need to begin believing that they can influence their academic outcomes before they can benefit from good teaching. Of course, departments and faculties should still make sure that their instructors are good, if not excellent, teachers. Nevertheless, it is important to ask: is it possible to help low-control students using methods designed to target and rectify their maladaptive causal thinking? Encouragingly, an extensive body of evidence suggests that a procedure called *Attributional Retraining* may provide a simple and cost-effective means of promoting perceived control and academic achievement among at-risk students.

Attributional Retraining

Based on Weiner's attribution theory (1985, 1995, 2006, 2012), Attributional Retraining (AR) is a treatment designed to modify maladaptive causal thinking in achievement settings by encouraging students to endorse controllable (rather than uncontrollable) attributions for their achievement failures. Although the research on AR began with elementary school children (Chapin & Dyck, 1976; Dweck, 1975), it has since been developed into an effective treatment for countering a paradox of failure in which capable university students, not unlike Carolyn Sacks, fail courses and withdraw from university (Perry, 2003).

In two early studies, Wilson and Linville (1982, 1985) recruited a group of first-year university students who were concerned about their academic achievement, and exposed a random sample of them to videotaped testimonials suggesting that students' grades increase over time. The researchers were trying to modify the *stability* of these students' attributions for failure; that is, they attempted to change their attributions from being stable to being unstable. The results were clear: The students in the AR treatment group performed better on Graduate Record Examination (GRE) items, had higher GPAs, and were less likely to drop out

of university than students in the control group. In two subsequent studies, Van Overwalle and colleagues (Van Overwalle & de Metsenaere, 1990; Van Overwalle, Segebarth, & Goldchstein, 1989) focused on altering the perceived *controllability* of students' attributions for poor performance using videotaped testimonials. Again, the students in the experimental group had higher test scores, were more likely to pass their final exams, and achieved higher GPAs than their peers in the control group (Van Overwalle & de Metsenaere, 1990).

Although these studies demonstrated the ecological validity of the AR treatment, they did not establish the internal validity of the procedures. To correct this limitation, Perry and Penner (1990) examined the effects of AR on subsequent achievement in a carefully designed laboratory study. Students in the experimental group were exposed to AR, and then both the experimental and control groups viewed a videotaped lecture and were provided with a take-home reading assignment based on the lecture. The results showed that students in the control-enhancing AR experimental group scored higher on the assignment than their peers in the no-treatment group. Thus, Perry and Penner demonstrated that the AR treatment had internal validity. Over the years, considerable evidence has shown that AR is an effective and valid intervention, especially for at-risk students like Caroline Sacks.

Administering Attributional Retraining

Administering the Attributional Retraining (AR) treatment takes less than an hour. The latest AR treatment, developed by Perry and his colleagues over a number of years, has a five-stage sequence (see, for example, Haynes, Perry, Stupnisky, & Daniels, 2009; Perry, Chipperfield, Hladkyj, Pekrun, & Hamm, 2014). First, a *pre-AR diagnostic assessment* of the students is carried out after they have completed approximately 1 month of university. In this stage, the students complete a questionnaire containing standardized items that measure a number of psychosocial variables (e.g., perceived control, self-esteem, intrinsic motivation, etc.), which allows the researchers to identify the students who are likely to be at-risk.

Second, a *causal search activation* stage is initiated by having students reflect on the causal explanations for their academic outcomes. As suggested in Weiner's theory, the causal search is most effective when it follows performance feedback (e.g., exam grades). This activity is designed to prime the students in the experimental group for the AR intervention. Following the completion of these two stages, the randomly selected students in the control group are dismissed, whereas their randomly selected peers in the experimental group remain for the final two stages.

The third component is the *AR induction* stage (Haynes et al., 2009). In this stage, the students are presented with information—via a videotape (Struthers & Perry, 1996), a handout (Hall, Perry, Chipperfield, et al., 2006), or internet presentation (Hall, Perry, Ruthig, Haynes, & Stupnisky, 2005)—suggesting that developing adaptive attributional mindsets can help students improve their future grades. Specifically, these students are encouraged to use controllable attributions

(e.g., I didn't put in enough effort) in explaining poor performance rather than uncontrollable attributions (e.g., the test was too difficult).

Fourth, a *consolidation activity* follows for these students. This stage encourages the students to process the information so that it is transferred from their working-memory into their long-term memory (Haynes et al., 2009). The research suggests that the consolidation activities, group discussions, aptitude tests, writing assignments, and take-home handouts, are all effective ways of having students deeply process and retain the treatment content (Haynes et al., 2009).

Finally, there is a *post-AR assessment* for the students in both the experimental and the control groups (Haynes et al., 2009). After several months, the students complete questionnaires measuring a number of psychosocial variables to determine if the intervention has, in fact, had a lasting impact on their academic perceptions and behaviors. In addition, academic achievement data (e.g., test scores, final grades, GPAs) are collected from institutional records at the end of each academic year. Notably, research has repeatedly shown that AR benefits a wide range of achievement-related outcomes, especially for at-risk students who are in greatest need of assistance.

The Positive Impact of the AR Treatment

In fact, over the last two decades, considerable evidence has demonstrated that the AR interventions developed by Perry and his colleagues have been very effective in improving long-term psychological and achievement outcomes for a large number of at-risk students (see, for example, Haynes et al., 2009; Perry, Chipperfield, et al., 2014). Specifically, students who receive the AR treatment are more likely to emphasize controllable attributions and de-emphasize uncontrollable attributions than students who received no treatment (Hall, Perry, Chipperfield, et al., 2006; Hamm, Perry, Chipperfield, et al., 2014; Hamm, Perry, Clifton, Chipperfield, & Boese, 2014; Haynes, Ruthig, Perry, Stupnisky, & Hall, 2006; Menec, Perry, Struthers, & Schönwetter, 1994; Perry, Stupnisky, Hall, Chipperfield, & Weiner, 2010). Students who receive AR also report higher expectations of future academic success (Hall, Hladkyj, Perry, & Ruthig, 2004; Haynes et al., 2006; Menec et al., 1994) and increased intrinsic motivation (Hamm, Perry, Clifton, et al., 2014).

Moreover, the research suggests that the AR treatment enhances students' positive emotions and diminishes their negative emotions. Students who receive the AR treatment report that they enjoy their course work more, and they are less likely to be bored than students who receive no treatment (Hamm, Perry, Chipperfield, Clifton, & Dubberley, 2012). AR also promotes the students' hope and pride, while reducing their shame, helplessness, and anger (Hall et al., 2004; Hamm, Perry, Chipperfield, et al., 2014; Hamm, Perry, Clifton, et al., 2014). Most importantly, students who receive the AR treatment perform better on post-treatment achievement tests and homework assignments (e.g., Menec et al., 1994; Perry & Penner, 1990; Perry et al., 2010; Van Overwalle et al., 1989) and earn significantly

higher year-end GPAs than their no-AR peers (Hall et al., 2004; Hamm, Perry, Clifton, et al., 2014; Haynes et al., 2006; Perry et al., 2010; Van Overwalle et al., 1989; Wilson & Linville, 1982).

In summarizing this research, Perry and his colleagues (2010) show that the treatment effects can be considerable. Students receiving AR outperformed their no-AR peers by nearly a standard deviation on a subsequent course test ($d = .92$), by nearly half a standard deviation on their final course grades at the end of two terms ($d = .43$), and by half a standard deviation on their GPAs at the end of the first academic year ($d = .51$). Students who received the AR treatment are also 61 % less likely to withdraw from first-year courses and *more than twice as likely to graduate within 5 years* in comparison with students who do not receive an AR treatment (Hamm, Perry, Clifton, et al., 2014; Perry, Hamm, et al., 2014).

New Developments in Attributional Retraining

Recently developed computer technology has enabled Perry's laboratory to personalize the AR treatment, allowing students to complete all the stages at their own pace on their personal computers (either in the laboratory or at home). Most promising, however, is a consolidation activity that presents students with a visual representation of their own attribution styles called *causal attribution mapping* (see Fig. 6.4). Immediately following the induction stage (Stage 3), students view a matrix on their computer screens with two axes. The X-axis ranges from internal to external and the Y-axis ranges from controllable to uncontrollable. If a student's score is in the most adaptive internal-controllable quadrant, a green check mark appears with a message congratulating the student and encouraging him or her to
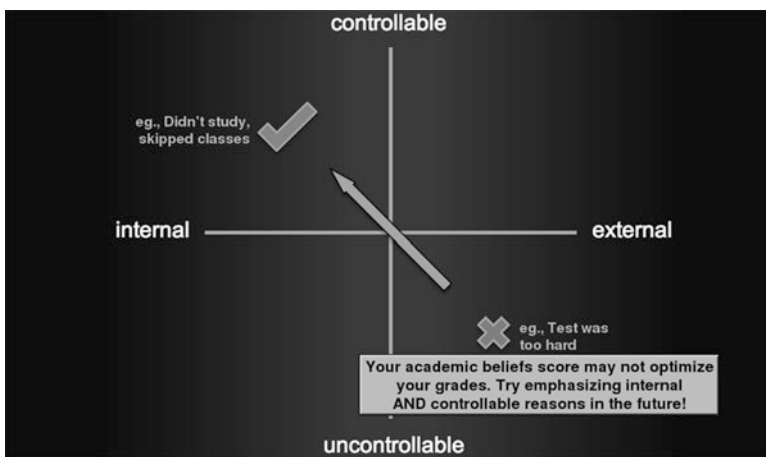
Fig. 6.4 Personalized causal attribution mapping feedback

continue making similar attributions. But, if the student scores in any of the other quadrants, a red X appears with a message encouraging the student to make internal-controllable attributions in the future.

The purpose of the personalized attribution mapping is to help students understand their own attribution styles, providing them with insights into how they interpret their failures. Such insights may facilitate deep processing of the AR information and enable students to more efficiently transfer this knowledge from their working memory to their long-term memory. After viewing their attribution styles, the students are asked to summarize the information and to discuss how they can use the information in their lives. Seeing their own attribution styles reflected on a graph immediately before responding to the consolidation questions gives students accurate and personalized information that seems to provide a deeper understanding of their own attributional processes. A deeper understanding of their attributional styles may help students change that style if it is maladaptive, and in this way it helps them think in more adaptive ways that facilitate their future academic success.

Conclusion

Based on this evidence, it is apparent that AR enhances the academic achievement and graduation rates of at-risk university students, such as Caroline Sacks (Perry, Hamm, et al., 2014). The goal of improving the achievement of these students is to help them graduate with degrees and to help them become relatively mature scholars. Of course, AR is not the only means of promoting academic achievement for at-risk students. As we have already noted, better administrative structures can also help at-risk students succeed in university. In this respect, administrative structures need to give appropriate authority to instructors and ensure that both administrators and instructors actually value teaching, particularly the teaching of first-year and other at-risk students (Adler, 1988; Geertsen, 2003; Rauch, 2013; Vedder, 2004; Wegener, 1978).

Despite the increased emphasis on effectively teaching undergraduates, between 20 and 30 % of first-year students fail to progress to their second year, and fewer than 60 % graduate with degrees within 6 years (Barefoot, 2004; Feldman, 2005; Perry, 2003; Tinto, 2010). Students and their parents may be the most directly impacted by this problem, but they are not the only people asking questions about the quality of education provided in colleges and universities. Other stakeholders, such as think tanks and government agencies, are suggesting that universities need to be more accountable for teaching undergraduate students. In other words, universities need to graduate a higher percentage of students, specifically those who are at risk of failing. As a consequence, colleges and universities are being forced to take their teaching responsibilities, particularly the teaching of undergraduate students, more seriously (Association of American Colleges and Universities, 2007; Association of Universities and Colleges of Canada, 2011; Burke, 2005; Canadian Council on

Learning, 2009; Clifton & Rubenstein, 2002; Cote & Allahar, 2007; Laidler, 2002; Massy, 2003; Pakravan, 2006; Sowell, 1993; Vedder, 2004; Weingarten & Deller, 2010; Zemsky et al., 2005).

Can all the problems in higher education be solved by administering a simple control-enhancing treatment and changing the administrative structures to reward excellent teaching? Undoubtedly not, but certainly the retention of first-year and other at-risk students can be improved. Hopefully, these improvements will mean that in the future more first-year students will graduate and most of them will develop into relatively mature scholars. Perhaps these students will also speak more positively about their university education, and, perhaps, at some later point in their lives they will even donate money to their universities, showing that they truly value the education they received.

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Chapter 7
Critical Advocacy Perspectives on Organization in Higher Education

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Higher education organization dynamics (e.g., structures, cultures, politics) contribute to and sustain inequity and injustice in postsecondary educational access, outcomes, and lived experiences. Dismal institutional treatment of adjunct faculty (e.g., limited or no job security, exclusion from shared governance, low pay) is a prime example of organizational inequity that has been well documented in recent higher education media coverage, legislative testimony and scholarly inquiry (June, 2014; Kezar, Gallant, & Lester, 2011; Kilgannon, 2014; Kingkade, 2013; Schmidt, 2014). Although there is already an expansive and growing body of higher education organization research (Bastedo, 2012c; Kezar & Dee, 2011; Manning, 2013), much of this scholarship is framed by post-positivist and social constructivist paradigms which are not guided by an explicit aim of advocating for social change. Accordingly, we assert scholars interested in playing a role in the transformation of U.S. higher education to a more equitable and just educational system would be well served to adopt a critical advocacy perspective when studying higher education organizations. As Shields (2012) argues,

> most researchers enjoy a social location of power and privilege, one that requires that we take a stance as public intellectuals . . . . Critical research which begins with questions of inequity and disparity holds the most promise for promoting policies and practices that can lead to economic, ecological, and human justice, and a suitable global future. (p. 3)

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In this chapter, we build upon and extend Shields' argument, illustrating the promise of critical advocacy inquiry[1] to both advance understanding of organizational inequities in higher education, and more importantly, contribute to meaningful change.

As elaborated upon later in this chapter, critical advocacy inquiry is a multi-faceted, research paradigm comprising a diverse collection of critical ontologies (being), epistemologies (knowing), methodologies (research design), axiologies (ethics), and praxiologies (doing) which share a commitment to documenting, describing and overturning injustice (Kincheloe, McLaren, & Steinberg, 2012; Shields, 2012; Tierney, 1991b). Although certainly not an exhaustive list of critical inquiry frameworks, critical race theory, critical feminism, queer theory, and post-colonialism are examples of critical perspectives which have gained prominence within and beyond the field of educational inquiry (Brown, Carducci, & Kuby, 2014; Cannella & Lincoln, 2012; Kezar & Dee, 2011). Although we do not focus attention in this chapter on the organizational inquiry implications of specific strands of critical theory (preferring instead to draw upon shared theoretical assumptions to frame a broad critical agenda for the study of higher education organizations), we encourage higher education organization scholars to develop inquiry projects anchored in relevant critical theories (e.g., postcolonial theory for the study of global education initiative's or queer theory to examine the heteronormative culture of governing boards) as specific theories help sensitize the researcher to particular, powerful, and often deeply embedded constructs of organizational oppression.

Critical scholarship is both unapologetically ideological and methodologically rigorous (Shields, 2012). The ideological aims of critical scholars are evident in their engagement "with issues of race, gender and socioeconomic level, as major shapers as well as components of historically reified structures of oppression" (Cannella & Lincoln, 2012, p. 105). The interrogation and disruption of taken-for-granted assumptions which inform oppressive structures, hegemonic power dynamics, and dominating discourses are characteristic features of critical advocacy inquiry (Alvesson & Deetz, 2006; Brookfield, 2005; Shields, 2012).

Another defining feature of critical advocacy inquiry is methodological rigor (Shields, 2012). Despite their explicit emphasis on using inquiry as a vehicle for advocacy, critical scholars do not privilege ideology above conducting "rigorous, trustworthy and authentic" research (Shields, p. 3). Critical researchers have developed a robust body of methodological scholarship that describes emergent and fluid, yet conceptually sound, approaches to conducting critical inquiry using innovative research designs such as counter-storytelling, photovoice, performance ethnography, arts based inquiry, and autoethnography (Brown, Carducci, & Kuby, 2014; Denzin, Lincoln, & Smith, 2008; Steinberg & Cannella, 2012).

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[1]In this chapter we use the terms critical, critical advocacy and critical qualitative inquiry/research interchangeably to describe research which draws upon critical social theories and qualitative methodologies to produce knowledge that is explicitly ideological and transformative in orientation.

Although critical methodologies encompass a diverse collection of data collection and analysis processes, they embrace a common vision of the researcher as an engaged advocate (Alvesson & Deetz, 2006; Shields, 2012; Tierney, 1991b). Moving beyond the mere documentation of oppression and hegemonic power, "critical advocacy-oriented research requires a commitment of the researcher to support and advocate for those whose voices are not always clearly heard. It implies a commitment to work to influence policies and practices that perpetuate marginalization and exclusion" (Shields, p. 10). For Shields engaging in advocacy-oriented inquiry does not mean researchers must participate in protest marches, strikes, sit-ins or similar forms of activism (although they may choose to do so). The advocacy dimension of critical inquiry, however, does demand more from scholars than disseminating their research via traditional academic texts such as conference papers and peer-reviewed journals. It requires researchers "to engage the stakeholders on an ongoing basis with findings and implications of a critical research study . . . to ensure that people's understandings are indeed changed and that such new comprehension leads to action that is tactical and strategic (Shields, p. 9). The critical inquiry expectations of sustained engagement and the ability to inspire action (Brookfield, 2005) necessitate reframing the role of the researcher from objective observer to change agent. The adoption and enactment of critical inquiry principles is a time-consuming, exhausting and risky endeavor for scholars, particularly early-career researchers, whose work challenges narrowly defined academic norms of rigor, productivity, and scholarship.

When applied to the study of contemporary U.S. higher education organizations, critical advocacy inquiry confronts inequities associated with systemic racism, gender discrimination, and market-driven constructions of human value (as well as other forms of organizational oppression). Critical organization scholars contest depictions of higher education organizational identities as stable and universal (e.g., the president of the university and a campus custodian share the same understanding of the institution's organizational identity) and call into question dominant organizational ideologies which privilege efficiency over justice (Tierney, 1991a). A critical analysis of organizational orthodoxy (Tierney, p. 12) (for example, the exclusion of adjunct faculty from shared governance) sheds light on the often oppressive nature of taken-for-granted organizational beliefs and norms, paving the way for organizational members to advocate for the creation of more equitable structures, policies, practices, and programs that promote justice within and beyond the permeable borders of postsecondary institutions (Cannella & Lincoln, 2004a; Denzin, 2010; Tierney, 1991a, 1993). Critical higher education scholars may demonstrate the "courageous and long term engagement and follow-through" (Shields, 2012. p. 10) characteristic of critical advocacy inquiry via legislative testimony, engagement with the popular media (letters to the editor, radio and television interviews), organizational consulting, facilitation of educational workshops for stakeholders, development of training materials and other similar strategies that work to translate scholarly findings into tangible change.

Drawing upon the growing body of critical scholarship within and beyond higher education, the content and organization of this chapter are framed by the focal

question, "What does it mean and look like to approach organization research in higher education from a critical advocacy perspective?" To establish the context for a critical research agenda, we identify contemporary higher education organization challenges and issues that lend themselves to examination and transformation via critical advocacy research. Next we provide an overview of critical inquiry theoretical tenets, assumptions and methodological considerations and examine the value of the critical perspective as a means of addressing organizational inequity and injustice. To illustrate the transformative potential of critical advocacy organization research, we present a synthesis of existing higher education organization research and describe new possibilities embedded within critical topics and methodologies. We close the chapter with a discussion of tangible, yet flexible, strategies for expanding the application of critical advocacy perspectives in higher education organization research. However, before we elaborate on our call for higher education organization scholars to adopt the principles and practices of critical advocacy inquiry, we must first survey the current landscape of higher education organization research.

Dominant Perspectives in Higher Education Organization Research

As St. Pierre (2011) states, the first step in deconstruction is to reverse the binary where critical scholars understand the privileged position so as to overturn, open up, and liberate. In the context of advancing critical approaches to the study of higher education organizations, graduate students and scholars must become well versed in dominant positivist and post-positivist perspectives. This knowledge enables critical scholars to situate their work within the contemporary research landscape and to articulate the contribution of critical scholarship to faculty colleagues, and/or research stakeholders beyond the academy. Accordingly, this section provides a synthesis of higher education organization scholarship with a particular focus on the dominant research perspectives.

One means of examining dominant approaches to the study of higher education organizations is to analyze core texts, both classic and contemporary, rather than a thematic analysis of paradigms and/or theories as many approach the work from a similar vein (Bess & Dee, 2012b; Kezar & Dee, 2011). Identifying required reading in graduate organization seminars as well as reviewing those works selected for inclusion in higher education organization and administration anthologies provides powerful clues as to what is considered legitimate knowledge. Our survey of the literature revealed higher education scholars draw from a number of books and articles on organizational theory and behavior from within and beyond the field. Foundational and frequently cited works on organization in higher education include *Distinctive Colleges* by Clark (1970), *Academic Values and Mass Education* by Riesman, Gusfeld, and Gamson (1970), *Organizational Culture and Leadership*

by Schein (1985), *In Search of Excellence* by Peters and Waterman (1982), and *Reframing Organizations* by Bolman and Deal (2013), to name a few.

Bess and Dee (2012b) observe the predominant paradigms, theories, and models in higher education organization research come from positivist approaches (p. 889), rather than post-positivist, constructivism, constructionism, interpretivism, critical theory, postmodern, or poststructural approaches (Denzin & Lincoln, 2005, 2008; Jones, Torres, & Arminio, 2014). Stage and Manning (2003) point out to higher education scholars that "the criticalist paradigm is gaining currency" (p. 19), yet do not include a description of these approaches in their book on research in the college context. Finally, although Kezar and Dee (2011) offer a compelling argument in favor of utilizing multiple paradigms to examine higher education organizations, they acknowledge that most contemporary scholarship draws upon functional and interpretive paradigms with critical and postmodern slowly gaining prominence. St. John (2009) elaborates on the core assumptions of positivist organization research:

> most theories of organization and professional action make positivist assumptions about progress, which is an implicit assumption regarding notions of effectiveness in organization theory and economics. Such theories promote the belief that by following the rules of practice (e.g., the organizational mission, ethical codes, and standards of practice) the world will become a better place". (p. 172)

As such, organization scholars ascribing to dominant paradigms and theories appeal to the common sense yet perpetuate inequities through a lack of questioning (Giroux, 2002).

The Association for the Study of Higher Education's (ASHE) Reader on *Organization and Governance in Higher Education* (Brown, 2000; Brown, Lane, & Zamani-Gallaher, 2010; Peterson, 1988), currently in its sixth edition, is another influential text that sheds light on dominant approaches to studying higher education organizations. The reader reprints what are often considered as the most groundbreaking works from the last decade and classic articles featured in previous editions. The current and previous editions of the reader include few chapters on particular paradigms and theories, focusing on relevant topics in higher education (e.g., governance models, campus culture, presidential perceptions of leadership, building learning organizations, race in organizations, and sensemaking). We revisit the theme of dominant research topics later in this chapter.

The ASHE Reader editors clearly view certain older chapters as still germane to the study of higher education organization, repeatedly selecting them for inclusion in subsequent editions of the reader. The reprints of traditionally utilized organizational models by Peterson (1985, 2000, 2010), an organizational analysis of racism by Chesler and Crowfoot (1989, 2000, 2010), and explanation of postmodernism by Bloland (1995, 2000, 2010) remain relevant. Bloland's article originally printed in 1995 and reprinted in two subsequent volumes, "Postmodernism and Higher Education," briefly walks readers through the differences between Derrida, Foucault, Lyotard and Baudrillard. While more has been written on the topic since the original publication, this chapter remains an accurate introduction to the evolution of postmodernism and may be a useful supplement to contemporary descriptions of

critical postmodern organizational research (Alvesson & Deetz, 2006). In the latest version of the ASHE Reader, Brown et al. (2010) intentionally include a greater number of chapters on race, gender, leadership, and institutional culture, topics excluded from earlier versions. In this manner, the ways in which race and gender impact institutional and organizational culture are included in ways that advance the importance of these persistent and pervasive topics.

The ASHE Readers also include the concept of neo-institutionalism as bringing together old and new institutionalism toward understanding radical organizational change (Greenwood & Hinings, 1996, 2000, 2010). Originally published in 1996 and included in the 2000 and 2010 editions, neo-institutionalism was at the time a progressive way in which to study higher education organizations because it acknowledged that certain concepts were difficult to measure, context is important, and change takes place over a long period of time. Further, the theory acknowledged "the action of values, interests, power and capacity within an organization must be brought into play" where action is embodied by organizational actors (Greenwood & Hinings, 2010, p. 330). Much of neo-institutional theory is based on a post-positivist reductive model, whereas some of the points – like the ones highlighted here – touch on elements consistent with pragmatism, constructivism, and critical inquiry.

Some ASHE Reader chapters were chosen as influential works in the 1980s and 1990s but "influential" is a fluid concept and has changed in the last few decades. Higher education needs to remain theoretically innovative in order to interrupt the reification of dominant paradigms within the shifting contemporary context of higher education. To utilize theories and models created decades ago is problematic in the current era given the ever-changing context of higher education. Such an approach reifies previous notions of inequity. Peterson's (1985, 2000, 2010) table on organizational models in postsecondary education (see Table 7.1) provides a synthesis of some of the models that have been influential in framing and analyzing higher education organization research prior to 1985 and they remain predominant in the literature today. Although, many models have been adapted from fields and disciplines outside of higher education, Cohen and March's (1974) model of organized anarchy and Weick's (1976) loosely coupled concept were created primarily to reflect higher and postsecondary education (Peterson, 2000).

Peterson cites a number of different models utilized by organization scholars in higher education, including the emergent social systems and systems of organizations. Systems theory, originally founded by Bertalanffy (1968), has dominated organizational change research in higher education with a "political" perspective as its alternative (Simsek & Louis, 2000, p. 550). The familiar Birnbaum (1988) *How Colleges Work* takes a different approach than dichotomizing the political as the "alternative" and describes the four models of organizational functioning as the collegial, bureaucratic, political and anarchical institution. Birnbaum also addresses the combination or integration of all four into the cybernetic institution, which provides direction through self-regulation.

Another cornerstone, yet not necessarily critical, perspective in higher education administration programs is Bolman and Deal's (2013) *Reframing Organizations*,

Table 7.1 Some organizational models in postsecondary education

Internal purposive	Formal-rational/goal
	Collegial/professional community
	Political/public bureaucracy
Environmental	Open systems
	Contingency
	Strategic
	Life Cycle
Technology	Task/techno-structure
	Information system/resource models
Emergent social systems	Temporary adaptive
	Organized anarchy
	Loosely coupled
	Social networks
	Organizational culture/values
	Organizational learning
	Natural/anti-models
Interorganizational	Systems of organizations
	Organizational networks
	Ecology models
	Industry model

Peterson (2000, p. 74)

where their structural frame, human resource frame, political frame, and symbolic frame accompany options for improving leadership and organizational practice. Their work has been slightly revised in each new edition of the book but and remains grounded in positivist perspectives on organizational theory. The authors offer multiframe thinking where people visualize across models in a way unique to their particular organization. It is important to note that none of the frames inherently reflect a critical inquiry approach as discussed in this chapter.

Bastedo's (2012b) edited volume, *The Organization of Higher Education: Managing Colleges for a New Era*, outlines distinctions between what constitutes an organizational theory in higher education and what does not. Manning's (2013), *Organizational Theory in Higher Education*, explores the strengths and weaknesses of various theories including organized anarchy, collegium, political, cultural, bureaucracy, new science, feminist, and spiritual perspectives. She is one of the few scholars to address feminist and new science perspectives, provides case studies for each theory, and offers concrete next steps to bring each theory into practice on college campuses.

In the two volume series, *Understanding College and University Organization*, Bess and Dee (2012a, 2012b) take a decidedly "pragmatic" approach (2012b, p. 891) as they define and apply three paradigms, or what they term, perspectives

on organizational theory: positivist, social construction, and postmodern.[2] Bess and Dee consider each of these perspectives as they methodically walk the reader through organizational environments, models, bureaucratic structures, organizational roles, teams, culture, conflict, power, politics, decision making, organizational learning, efficiency, change, and other related topics. Bess and Dee note that positivism is the predominant perspective in organizational research. The text also included a few strong descriptions of critical theory and its perceived role in higher education research. For example, the authors clearly describe the threat that some positivist scholars feel as postmodern perspectives "interrupt the evolution of the tightly articulated systems thinking that renders institutions of higher learning visible and understandable in a commonsense mode" (2012b, p. 889) (also see 2012a, p. 385).

To be sure, we are not able to give detailed consideration to the myriad paradigms and theories utilized often in higher education, including the sensemaking (Weick, 1995, 2010), garbage can decision-making concept (Cohen, March, & Olsen, 1972), agency theory (Lane, 2012), social movement theory (Slaughter, 1997), loose and tightly coupled systems (Weick, 1976), learning organizations (Senge, 2000), and other important theories and models utilized in the field. Rather, we opted to focus our attention on foundational higher education organization texts, both classic and contemporary, such as the ASHE Readers and other books utilized in courses to socialize graduate students and early career scholars. For insight on the paradigms and theories not addressed in this chapter, we encourage readers to explore the wealth of literature that currently exists.

Congruent with St. Pierre's (2011) assertion that an understanding of the privileged position is essential for advancing critical perspectives, the preceding overview of foundational higher education organization texts underscores the continued dominance of post-positivist organization frameworks – models which reify organizational inequity through continued emphasis on rational decision-making, bureaucratic structures and mechanisms of control, and predictable organizational behavior. In the next section, we establish a context for new approaches to the study of higher education organizations, identifying contemporary higher education organization challenges and issues that lend themselves to examination and transformation via critical advocacy inquiry.

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[2]While we certainly appreciate Bess and Dee's attention to synthesize organization research beyond the post-positivist perspective, some of the examples within the postmodern organizational view were reflective of multiple paradigms, potentially confusing readers seeking to understand the postmodern approach to studying higher education organizations.

Contemporary Higher Education Organizations

Higher education is changing – some might contend facing a crisis – as capitalist-driven notions of efficiency and productivity increasingly dominate and silence perspectives of higher education for the public good (Cannella & Miller, 2008; Giroux, 2002; Martínez-Alemán, 2012; Pasque, 2010; Slaughter & Rhoades, 2004). The rapid expansion of the academic capitalism regime of truth (Slaughter & Rhoades) necessitates a critical examination by those who wish to challenge the "growing acceptance of what Giroux (2007) and others have condemned as the rise of the 'corporate university'" (Denzin & Giardina, 2012, p. 1; also see Giroux, 2002; Johnson, 2008; Rutherford, 2005; Shumar, 1997; Slaughter & Leslie, 1997; Slaughter & Rhoades, 2004) characterized by the establishment of campus policies, practices and environments that reflect for-profit principles such as privatization, commercialization, efficiency and deregulation (Giroux, 2002). In addition to the inequities associated with the expanded influence of the market, higher education organizations must also contend with increased calls for accountability, neoliberal attacks on enrollment management policies, the implications of a shifting academic labor force and expanded global engagement. Exploring these topics through research studies anchored in post-positivist and constructivist paradigmatic assumptions will certainly expand knowledge of contemporary higher education organizations; however, researchers interested in transforming the academy may be better served engaging in critical advocacy inquiry.

Market-Driven Restructuring

Recent efforts to streamline administrative practices, often at the expense of shared governance norms and the job security of staff members located at the bottom of the organizational chart, are prime examples of market-driven restructuring within the academy that are ripe for examination from a critical advocacy perspective. The Universities of Michigan, Kansas, California, and Texas as well as Yale University have recently explored or initiated organizational restructuring efforts intended to increase administrative efficiency and cost-savings through a shared administrative services model which centralizes finance and human resource functions (e.g., payroll, travel reimbursement) historically decentralized across academic departments and colleges (Rivard, 2013). The University of Michigan's 2013 announcement of a new "Shared Services Center," which would involve the reassignment and relocation of 275 administrative professionals to a single off-campus facility, was met with significant academic leadership and faculty resistance stemming from charges that university administrators did not abide by the norms of shared governance and transparent decision making before moving forward with the plan (Rivard). Additionally, critics of

the reorganization called into question the university's cost savings estimates as well as raised concern that the restructuring would "dehumanize" support staff positions and place a disproportionate burden on "low- to lower-middle-income women" who occupy fiscal and human resource support positions (An open letter to President Coleman and Provost Pollack, n.d). Although university administrators acknowledged they had not been "sensitive or consultative enough in the planning and communication" of the shared services initiative (http://ast.umich.edu/3Dmessage%2011-14-13.html), the university is moving forward with the restructuring efforts and expects to open the Shared Services Center in August 2014 (http://ast.umich.edu/faq.html).

Couched in terms such as "deficit reduction, fiscal responsibility, productive efficiency and global competitiveness," universities have presented restructuring efforts such as the University of Michigan Shared Services Center as though the market is "fair and just: it can distribute (or even redistribute) scarce resources effectively and efficiently according to the logic of supply and demand" (Brule, 2004, p. 248). University of Michigan administrators seem to conceptualize support staff workers as interchangeable human capital that can and should be reorganized according to the market logic of efficiency, a perspective that serves to dehumanize the work environment and undermine local knowledge and relationships. An examination of Michigan's restructuring efforts from a critical advocacy perspective would interrogate and disrupt the taken-for-granted market logic framing campus reorganization efforts, placing the voices and experiences of the support staff, not campus administrators, at the center of inquiry. Recognizing that the political, raced, gendered, classed, and heteronormative organizational cultures of the University of Michigan specifically and higher education more broadly are situated in a larger historical, socio-political context, critical scholars would examine the influence of global market discourses on the lived experiences of Michigan support staff members. Staff perceptions and experiences with power, the implications of restructuring on the staff members' sense of self-worth, professional identities and collegial relationships might serve as productive lines of critical inquiry. Depending upon the specific research question, a number of critical theories (e.g., critical race theory, critical feminism, academic capitalism) and methodologies (e.g., critical discourse analysis, critical ethnography) could provide powerful lenses through which to examine and enhance understanding of Michigan's reorganization endeavor. Critical advocacy inquiry seeks to do more than expand understanding, however; it seeks to advocate for change. Advocacy in the context of the University of Michigan example might take the form of the researcher writing a letter to the editor of the campus or town newspaper to advocate for the respectful treatment of support staff, presenting the research findings to multiple campus reorganization stakeholders (e.g., support staff and administrators) and facilitating meaningful discussion of the study's implications for practice, working with support staff to identify appropriate resistance strategies that build on the study's key findings.

The Accountability Movement

Tightly coupled with the market logic framing university restructuring efforts are the ever-expanding accountability regimes (Smith, 2004) and corresponding "audit cultures" (Denzin, 2009) which rely on decontextualized metrics of organizational and individual productivity (e.g., external research dollars, faculty publication counts, instruction and advising loads) to measure quality and maximize return on government and institutional investment (Cheek, 2007). By stripping faculty and staff of autonomy in decisions pertaining to pedagogy, research design and dissemination, and institutional planning, policymakers and campus administrators embedded within the accountability movement emphasize the identification and application of one-size-fits all prestige and performance criteria which perpetuate inequity by undermining institutional and individual efforts to address the unique and specific needs of historically marginalized populations (Canaan & Shumar, 2008; Pasque, Carducci, Kuntz & Gildersleeve, 2012). Critical advocacy organization research on the manifestations and implications of the accountability movement within higher education would not only seek to understand the institutional agents and dynamics (e.g., structures, cultures, relationships) responsible for adopting and enforcing oppressive performance and productivity frameworks, it would explicitly seek to challenge and overturn the audit culture through strategic advocacy efforts such as engaging campus administrators, legislators and national funding organization representatives in discussions of the research findings and efforts to identify alternative, socially just criteria for evaluating individual and organizational excellence. Critical scholars may also seek to advocate their position by seeking out opportunities to serve on and even lead promotion and tenure committees, editorial boards, and funding panels, drawing upon their scholarly knowledge to shape organizational conversations and policies (Cannella, 2004).

Neoliberalism and Enrollment Management

In addition to market-driven organizational restructuring and accountability efforts, market forces are also reshaping the composition of higher education campuses with respect to student demographics. Proponents of neoliberalism continue to legally challenge higher education race-conscious admissions policies (*Fisher v. University of Texas,* 2013*; Gratz v. Bollinger,* 2003*; Grutter v. Bollinger,* 2003) on the grounds that the consideration of race violates individual economic and civil rights. In an ironic twist, defenders of race conscious admissions policies have countered legal challenges with their own market logic, calling upon for-profit companies to file amicus briefs supporting the consideration of race as an essential means of producing a diverse workforce capable of improving America's position in the global economy (Rhoads, Saenz, & Carducci, 2004).

Moving beyond the consideration of race, the socio-economic diversity of the student body is also under neoliberal attack as government and campus officials expand merit-aid programs, while simultaneously cutting need-based financial aid. This action is taken in hopes of enrolling more high-performing, financially self-sustaining students who will boost higher education's fiscal bottom line (Slaughter & Rhoades, 2004). Although numerous higher education policy analysts have examined the nature and implications shifting admissions and financial aid policies (Heller & Marin, 2004; Griffith, 2011; Slaughter & Rhoades, 2004), market-driven enrollment management practices are also products of organizational behavior and therefore cannot be ignored by critical higher education scholars seeking to understand and transform organizational practices that perpetuate inequity. A critical ethnography of a university division of enrollment management could shed valuable light on the ways in which neoliberal principles are manifested in the organizational norms and assumptions which shape the daily actions of enrollment management administrators and inform institutional policy development. Critical advocacy scholars committed to challenging the rampant expansion of neoliberal ideology in the academy might facilitate a series of professional development workshops with enrollment management staff, guiding them through a set of reflective exercises designed to help them identify and question the norms and values that shape their work.

Shifting Academic Labor Force

Beyond the student body, the market is also increasingly called upon to justify changes in the academic labor force. Researchers have documented a rise in the number of higher education professional administrative positions and a simultaneous decrease in full-time faculty (Desrochers & Kirshstein, 2014). Consistent with what Slaughter and Rhoades (2004) describe as the academic capitalism tenet of non-Fordist manufacturing, universities are increasingly filling instructional vacancies with adjuncts and lecturers (Desrochers & Kirshstein, 2014; Kezar, 2013). This trend creates a more flexible, contingent labor force capable of rapidly responding to changes in the regional, state, national and global environment. The inequities and injustices that characterize increased institutional reliance on contingent labor (e.g., lack of involvement in university governance, little to no professional development support, inequitable compensation rates) have already been the subject of local and national research, advocacy and resistance efforts (for example, see The New Faculty Majority, http://www.newfacultymajority.info/equity/ and the Delphi Project on the Changing Faculty and Student Success, http://www.thechangingfaculty.org/). Critical organization scholars affiliated with these projects are challenging the organization dynamics implicated in the creation and maintenance of inequitable labor practices, expanding understanding of this contemporary higher education crisis and also facilitating material change in organizational life. In the case of the Delphi Project on the Changing Faculty

and Student Success, for example, the research project includes the creation and dissemination of publically available resources and tool kits, inclusion of union members, and regular media coverage (http://www.thechangingfaculty.org/).

Global Higher Education Organizations

The globalization of higher education is our final example of a contemporary dynamic, or depending upon one's perspective, a postsecondary crisis that is radically changing the nature of higher education organizations (Ayers, 2013; Canaan & Shumar, 2008; Kezar, Carducci, & Contreras-McGavin, 2006; Lane, 2011; Marginson, 2004; Shahjahan & Kezar, 2013). Some higher education scholars and administrators have framed expanded university engagement in the global economy as a vital means of economic security and growth (for example, increased revenue from growing international student enrollments) (Altbach & Knight, 2007; Andrade, 2006; Lane, 2011; Rhee & Sagaria, 2004) and a valuable vehicle for global prestige (e.g., international branch campuses and partnerships) (Lane). However, these global higher education endeavors also raise important questions of human rights, equity, power and justice that lend themselves to examination from critical theoretical and methodological perspectives. For example, as an increasing number of American universities seek to establish international partnerships and outposts, concerns arise regarding the ethical and governance implications of engaging in academic trade relations with countries that do not share American norms of academic freedom, shared governance, and perhaps even more importantly, human rights (Kiley, 2011; Redden, 2012). In the interest of ensuring that the logic of global capitalism does not displace institutional commitments to the principles of diversity, non-discrimination, human dignity and freedom, higher education scholars would be well served to examine global initiatives through the lenses of critical inquiry. This strand of inquiry is particularly ripe for examination through the critical theoretical framework of postcolonialism and indigenous qualitative methodologies (Denzin et al., 2008; Said, 1978). This scholarship can inform advocacy and resistance efforts at local, national and international levels (e.g., frame legislative testimony on global education accreditation standards, facilitation of faculty development workshops protecting academic freedom and supporting human rights in global campus endeavors).

Although certainly not an exhaustive list of the changes and challenges confronting contemporary higher education institutions, the preceding discussion of globalization, neoliberal enrollment management policies, accountability regimes, shifting labor patterns, and market-driven restructuring efforts establishes a context for our analysis of higher education organization research and underscores the importance of critical advocacy scholarship which seeks to challenge and overturn oppressive organization dynamics. In order to realize the transformative potential of this research perspective, higher education scholars should have a firm understanding of the critical paradigm. Building upon the brief overview of critical

advocacy research provided in the introduction, the next section offers a more in-depth examination of foundational critical theoretical tenets, assumptions and methodological considerations.

Critical Inquiry: An Overview

In critical studies of higher education organizations, both the topics of exploration (e.g., governance, decision-making, culture, change) and the methodological approaches to exploring these topics (e.g., critical case study, critical discourse analysis, critical grounded theory/situational analysis, counter-storytelling) are crucial to interrogating and upending societal and institutional constructions of hegemonic power, in/exclusion of voices, and individual and systemic oppression (Denzin & Lincoln, 2005). Consistent with Shields' (2012) description of critical advocacy research, Denzin and Lincoln (2008) explain that critical qualitative research "represents inquiry done for explicit political, utopian purposes, a politics of liberation, a reflexive discourse constantly in search of open-ended, subversive, multivoiced epistemology" (p. 5). As such, critical advocacy inquiry when applied to the study of higher education organization is an impenitent and participatory politic that addresses real world issues of oppression, privilege, collusion and resistance in programs, processes, and relationships at the level of local institutions as well as national (and now increasingly international) systems of higher education.

Before providing an overview of the theoretical tenets, core assumptions and methodological considerations that inform critical approaches to studying higher education organizations, it is important to pause and clearly define the scope of our literature review. In this chapter, our focus is exclusively on critical *qualitative* studies of higher education organizations. Although a number of higher education scholars have utilized mixed-methods and quantitative methodologies to examine inequity in higher education (Alvarado & Hurtado, 2015; Carnevale & Strohl, 2013; Carter et al., 2012; Garces, 2012; Gurin, Dey, Hurtado, & Gurin, 2002; Inkelas, 2006; Stage, 2007), our methodological interests and expertise (Brown, Carducci, & Kuby, 2014; Gildersleeve, Kuntz, Pasque & Carducci, 2010; Pasque et al., 2012) center on advancing critical qualitative perspectives within the field of higher education. Our decision to limit the focus of this chapter to critical qualitative organization scholarship is thus congruent with and an extension of an established line of inquiry – examining the promise of critical qualitative approaches for advancing understanding and transforming policies, procedures, and practices that perpetuate oppression and inequity in higher education organizations. Having clarified the methodological parameters of this chapter, we now move forward with providing an in-depth, albeit inevitably incomplete, overview of the critical research paradigm. We begin with a discussion of critical inquiry's theoretical roots.

Critical Social Theory

Beneficial to understanding the current moment of critical theory are Kincheloe and McLaren's (2005) three assertions as to why it is challenging to articulate a universal definition of critical theory: "(a) there are many critical theories, not just one; (b) the critical tradition is always changing and evolving; and (c) critical theory attempts to avoid too much specificity, as there is room for disagreement among critical theorists" (p. 303). The absence of a singular critical theory (Brookfield, 2005; Held, 1980) is problematic for scholars seeking formulaic approaches to studying higher education organizations from a critical perspective. We, however, view this theoretical diversity as a strength of critical inquiry and adopt an inclusive approach when describing the broad landscape of critical theory, including indigenous, feminist, critical race, postcolonial, postmodern, post-structural, and critical social science theories within the framework.

Critical social theory has a rich historical foundation which traces back to the 1923 establishment of the Institute of Social Research, or the Frankfurt School, and the works of Max Horkheimer, Freidrich Pollack, Theodor Adorno, Herbert Marcuse, Leo Lowenthal, and more recently, Jürgen Habermas (Brookfield, 2005; Held, 1980; Tierney, 1991a). These philosophers, sociologists, and economists "sought to develop a critical perspective on all social practices" that would "contribute to a critique of ideology and to the development of a non-authoritarian and non-bureaucratic politics" (Held, p. 16). A focus on ideology critique as a means of social transformation is a defining feature of early critical social theory (Held) and remains a central tenet of contemporary critical scholarship (Alvesson & Deetz, 2006; Brookfield, 2005; Cannella & Lincoln, 2012; Shields, 2012; Tierney, 1991b).

Critical social theorists seek to identify and critique dominant ideologies (e.g., values, myths, norms, beliefs, discourses, etc.) which establish and reify oppressive social, economic and political conditions (Alvesson & Deetz, 2006; Brookfield, 2005; Tierney, 1991b). The influence of dominant ideologies is both broad and local, simultaneously shaping global movements and individual campus politics. The discourse of globalization is a prime example of a dominant ideology operating on multiple levels. Broadly speaking, the term globalization refers to a far-reaching neoliberal agenda that seeks to undermine national sovereignty in favor of global capitalism governed by multinational corporations (Torres & Rhoads, 2006). At the local level, the ideology of globalization is manifested in institutional efforts to generate revenue via expanded international recruitment efforts and global partnerships (e.g., branch campuses, dual degree programs) (Torres & Rhoads, 2006). Both the local and multinational versions of globalization ideology are subject to critique by critical theorists interested in examining the ways in which global capitalism perpetuates inequity (e.g., international students generate significant revenue yet often receive limited institutional support in comparison to American students) and injustice (for example, establishing branch campuses in countries with poor human rights records).

Unfortunately, dominant ideologies can be difficult to identify. As Brookfield (2005) explains,

> ideologies are hard to detect since they are embedded in language, social habits, and cultural forms that combine to shape the way we think about the world. They appear as common sense, as givens, rather than as beliefs that are deliberately skewed to support the interests of the powerful minority. (p. 41)

It is the common sense nature of ideologies that is particularly pernicious and thus a focal point in critical scholarship. Critical theorists engage in ideology critique in the interest of assisting historically marginalized individuals and groups recognize that oppressive conditions are not natural and inevitable, but rather products of social construction that can be challenged and overturned (Alvesson & Deetz, 2006; Brookfield, 2005; Tierney, 1991b). Thus ideology critique is a powerful vehicle for realizing the second defining feature of critical social theory: a commitment to social transformation.

In the introduction to the edited volume, *Critical Theory and Educational Research*, Peter McLaren and James Giarelli (1995) elaborate on the transformative aims of critical educational research:

> Critical theory is, at its center, an effort to join empirical investigation, the task of interpretation, and a critique of this reality. Its purpose is to reassert the basic aim of the Enlightenment ideal of inquiry; to improve human existence by viewing knowledge for its emancipatory or repressive potential . . . .Like interpretivism, critical theory holds that knowledge is socially constructed, contextual, and dependent on interpretation. In contrast to interpretivists, critical theorists see a need and a basis for forming and understanding hierarchies of contexts and types of knowledge and evaluating them for their possibilities of contributing to progressive material and symbolic emancipation. Of course, this does not settle the debate. What kinds of knowledge best serve human emancipation? However, unlike positivism and interpretivism, mainstream quantitative and qualitative approaches, critical theory puts this problem at the core of inquiry. (p. 2)

As explained by McLaren and Giarelli, although both the interpretive and critical research paradigms conceptualize knowledge as contextual and socially constructed, educational inquiry anchored in critical theory moves beyond interpretation of socially constructed realities. Critical education scholars work to *apply* their knowledge toward emancipatory and empowering ends, contributing to psychological and physical change in the lives of historically oppressed individuals, groups and communities (Alvesson & Deetz, 2006; Brookfield, 2005; Tierney, 1991a). When adopted in the study of higher education organizations, the theoretical tenet of research as a vehicle for empowerment and change necessitates that researchers not only pursue lines of inquiry that examine manifestations of power and oppression in governance processes and organizational structures, they must also reflect on the ways the research process and/or findings may influence change efforts (e.g., challenge institutional decision-making; (re)shape organizational culture; inform local, national, or international resistance movements).

A thorough historical discussion of how critical social theory has evolved over time is beyond the scope of this chapter (readers interested in a comprehensive review are encouraged to read Held, 1980; Morrow & Torres, 1995) as is a detailed

introduction to specific critical theories (e.g., critical race theory, feminism). But, like all approaches, critical social theory has been and continues to be revised, including the consideration of race and gender discrimination as well as class inequity; recognition of disciplinary power (self-surveillance) in addition to formal coercive power (Foucault, 1980), and development of the postmodern critique of critical theory's modernist principles of emancipation (Brookfield, 2005). These theoretical extensions have opened up new lines of inquiry, expanding our understanding of the cultural, economic, political, and social conditions that create and perpetuate educational inequity. Although critical social theory includes a number of diverse and distinct theoretical frameworks (e.g., critical race theory, queer theory, postcolonialism), it is possible to identify a set of shared epistemological and methodological assumptions which provide valuable guidance to scholars interested in conducting a critical analysis of higher education organizations. We turn our attention to these assumptions in the next section.

Critical Inquiry Assumptions

Although Kincheloe et al. (2012) argue persuasively that "critical theory should not be treated as a universal grammar of revolutionary thought objectified and reduced to discrete formulaic pronouncements or strategies" (p. 15), it is possible to distill a set of assumptions that are shared by individuals who engage in critical inquiry:

- All thought is fundamentally mediated by power relations that are socially and historically constituted
- Facts can never be isolated from the domain of values or removed from some form of ideological inscription;
- The relationship between concept and object and between signifier and signified is never stable or fixed and is often mediated by the social relations of capitalistic production and consumption;
- Language is central to the formation of subjectivity (conscious and unconscious awareness);
- Certain groups in any society and particular societies are privileged over others and, although the reasons for this privileging may vary widely, the oppression that characterizes contemporary societies is most forcefully reproduced when subordinates accept their social status as natural, necessary, or inevitable;
- Oppression has many faces, and focusing on only one at the expense of others (e.g., class oppression versus racism) often elides the interconnections among them; and finally
- Mainstream research practices are generally, although most often unwittingly, implicated in the reproduction of systems of class, race, and gender oppression. (Kincheloe et al., 2012, pp. 15–16)

Critical higher education organization scholars should strive to reflect these assumptions in their research. For example, acknowledging the importance and

interconnectivity of historical, economic and socio-political oppression, critical scholars not only examine manifestations of hegemonic power within higher education organizations (e.g., the establishment of global education partnerships that undermine human rights and challenge the norms of shared governance) but simultaneously analyze the external economic, political, historical conditions (e.g., neoliberal agenda of global capitalism) shaping oppressive organizational behaviors and cultures (Alvesson & Deetz, 2006). Additionally, rather than focusing on one form of organizational oppression (e.g., heterosexism or racism), critical social theory suggests higher education organization researchers seeking to engage in transformative inquiry would be well served to examine the interconnections across oppressed identities and discriminatory practices (e.g., the overlapping influence of racism, heterosexism and xenophobia on global education initiatives).

Underscoring the importance of language in critical higher education organization scholarship, research must focus not only on the social identities of various stakeholders such as students and staff, but also organizational discourses (e.g., policies, correspondence, etc.) which may serve to reproduce or interrupt oppressive norms, values, and beliefs. Critical discourse analysis of institutional mission statements, strategic plans, diversity statements, press releases, budget documents, and presidential speeches will shed valuable light on the ways dominant ideologies (e.g., global capitalism, neoliberalism, heteronormativity, gender binary, xenophobia) shape organizational communication and reify oppressive organizational identities, priorities, and practices (see Ayers, 2005, 2014; Gaffikin & Perry, 2008). Critical discourse analysis (Rogers, 2004) is also a valuable means of situating local organizational practices within broader socio-political and economic contexts as well as examining multiple forms of oppression simultaneously as one can "read" a text through multiple theoretical lenses.

The assumption that oppressed individuals and groups are often complicit in their own subordination, a result of subscribing to "common sense" values and beliefs which serve to uphold the power of the ruling elite (Alvesson & Deetz, 2006; Brookfield, 2005), suggests that critical organization scholars need to make the familiar strange and interrogate taken for granted organizational assumptions (Shields, 2012). It is believed that interrogating common sense rhetoric helps historically oppressed individuals recognize their false consciousness (Alvesson & Deetz, 2006; Lincoln, 1991) and engage in transformative resistance. Extending the example of critical scholarship on global education initiatives, critical organization scholars might design a study which examines the development and governance of international branch campuses not from the perspective of American university presidents who laud the expansion of global knowledge networks but from the perspective of the local laborers hired to construct and maintain the branch campus. Recent revelations concerning the oppressive working conditions experienced by construction crews at the New York University Abu Dhabi campus in the United Arab Emirates (Kaminer & O'Driscoll, 2014) illustrate the need to examine global education efforts from diverse perspectives.

Finally, the assumption that mainstream research practices often reproduce oppression highlights the need for critical organization scholars to eschew

traditional research designs and adopt methodological principles and practices congruent with the transformative aims of critical inquiry. We elaborate on this assumption in the next section, examining the methodological dimensions of critical inquiry.

Critical Methodologies

As proponents of Shields' (2012) conceptualization of critical advocacy research applied to the study of higher education organizations, we are particularly concerned with Kincheloe et al.'s (2012) critical assumption that "mainstream research practices are generally, although most often unwittingly, implicated in the reproduction of systems of class, race, and gender oppression" (p. 16). Although the authors do not elaborate on the nature of oppressive "mainstream research practices," one can safely assume their critique includes the post-positivist pursuit of objectivity, experimental designs which seek to negate context and difference, and inquiry projects in which scholars wield power and privilege, reaping significant personal and professional benefits (e.g., publication, promotion, prestige, funding) but give little thought to how their research may transform the lives of research participants and/or the broader society. Critical higher education organization scholars interested in transforming the academy via advocacy inquiry must then refrain from engaging in traditional research practices and instead adopt methodologies which reframe the role of the researcher and reimagine knowledge production processes.

In critical inquiry the notion and practice of researcher objectivity is rejected in favor of a researcher identity that is reflective, political and engaged (Tierney, 1991a). Rather than feigning neutrality, critical researchers acknowledge the influence of their positionalities on inquiry processes such as the formulation of research questions, data collection and analysis procedures, and knowledge dissemination. Critical scholars are present in their research, often writing in the first person and including reflections on the ways in which their multiple identities shaped the process of inquiry (for examples, see Brown, 2014; Carrillo, 2014; Harper, 2012; Tierney, 1997). Some critical scholars place their lived experiences at the center of inquiry, utilizing critical methodologies such as autoethnography (Kuby, 2014) or counter-storytelling (Espino, 2012) to examine educational inequity and organizational injustice.

Congruent with the twin critical social theory aims of ideology critique and social transformation, critical research must engage methodologies that facilitate the identification, critique, and disruption of common sense organizational ideologies which are often hidden in plain sight. Critical management scholars Matz Alvesson and Stanley Deetz (2006) explain the importance of designing critical organization research with a focus on making the familiar strange:

> To conceptualize and interpret contemporary organizations as rather strange places can counteract the effects of ideology and normalization. Research then becomes a matter of de-familiarization, of observing and interpreting social phenomenon in novel, even shocking,

> ways compared to culturally dominant categories and distinctions. De-familiarization means that we see things not as self-evident or rational but as exotic and arbitrary, not as functional and helpful but as constraining and repressive. (p. 275)

Eschewing traditional processes of data collection, analysis, and representation, critical methodologies such as counter-storytelling (Espino, 2012; Solórzano & Yosso, 2002), photovoice (Taaffe, 2014), and critical performance ethnography (Brown, 2014) disrupt grand organizational narratives by de-familiarizing taken for granted assumptions and spotlighting the organizational lives of historically marginalized individuals and groups. For example, in the interest of examining and overturning the grand narratives of efficiency, global competitiveness and fiscal responsibility which frame higher education restructuring efforts like the one underway at the University of Michigan (Rivard, 2013), a critical scholar might adopt counter-storytelling methodology (Espino, 2012; Solórzano & Yosso, 2002) to present a competing depiction of restructured organizational life from the point of view of displaced support staff. Constructing a composite narrative drawn from in-depth interviews with support staff relocated to the Shared Services Center might shed light on the alienation and commodification of identities associated with market-driven campus restructuring efforts. A counter-story of reorganization would also provide a methodological process for situating observations of local oppression within the broader social, political and economic context of global capitalism. Another benefit of disrupting traditional forms of knowledge dissemination (e.g., poetry reading or art show instead of or in addition to a peer reviewed journal article) is that it allows the researcher to engage diverse audiences (e.g., community members, policy makers) not just academic peers.

In addition to reframing the role of the researcher and making the familiar strange, critical methodologies must also advance the transformative aims of critical social theory. In *Culture and Ideology in Higher Education: Advancing a Critical Agenda,* one of the earliest works to explore the application of critical theory to the study of higher education, Tierney (1991a) elaborates on the empowerment axiom of critical approaches to studying higher education organizations, explaining,

> Empowerment concerns the liberation of individuals, so that they are capable of understanding their relationship to the world and complex organizations in which they reside ... Empowerment is not something that one individual gives to another. Instead, empowerment is a process whereby individuals come to self-understanding of their place in society. Empowered individuals are able to see how the larger society has formed, shaped, and mangled their own lives and interpreted realities. These same individuals are then able to re-form and reshape their lives and those of their families and friends. (p. 8)

Key to understanding and enacting the empowerment axiom of critical inquiry is a recognition that not all critical research lives up to its transformative potential. Indeed, Ellsworth (1989) argues that in many cases critical work may actually "perpetuate relations of domination" (p. 298). Rather than operating from a patriarchal conceptualization of empowerment (i.e., researchers *give* voice and power to oppressed individuals), critical higher education organization scholars must work to enable historically marginalized individuals "to act on their own behalf" (Tierney, 1991b, p. 7). Adopting research designs such as photovoice (Taaffe, 2014) and

critical participatory action research (Brydon-Miller, Kral, Maguire, Noffke, & Sabhlok, 2011) which engage research participants in the process of inquiry (e.g., data collection, analysis, and representation) is one means of realizing the liberatory aims of critical research. Another is to remain engaged with research stakeholders after the conclusion of the study, facilitating discussions about the research findings and their implications for transformative action (Shields, 2012).

Contemporary critical scholars have adapted a variety of research methodologies in the interest of reimagining the role of researcher, making familiar educational practices strange, and empowering historically marginalized individuals and groups to identify, critique and transform dominant ideologies. The following table of methodologies and corresponding scholarly citations are samples of empirical critical qualitative work within and beyond higher education. We encourage scholars to seek out this research as examples:

Some of the methodologies listed in Table 7.2 are familiar to and utilized by scholars in higher education, yet not as often to study higher education organizations. We ask, "what pertinent and transformative information could be learned about higher education organizations if critical qualitative methodologies were more readily taught and employed?" By way of a specific example, what

Table 7.2 Critical qualitative inquiry methodologies

Critical methodology	Examples
Critical narrative inquiry	Isoke (2011), Pitre, Kushner, Raine, & Hegadoren, (2013), Solis (2004)
Critical case study	Bialostok and Kamberelis (2010), Flyvbjerg (2011), Gumport (1991), Martínez-Alemán and Salkever (2003), Rhoades and Slaughter (1997)
Critical ethnography	Gildersleeve (2010), Madison (2012), Tierney (2008), Toyosaki and Pensoneau-Conway (2013)
Critical performance ethnography	Bhattacharya (2009), Brown (2014), Denzin (2003), Fierros (2009)
Critical race ethnography	Anderson, Austin, Holloway, & Kulkarni (2012), Duncan (2005), Kavoori and Joseph (2011)
Critical grounded theory/situational analysis	Peréz and Cannella (2013)
Critical participatory action research	Fine (2014), Gonzales and Rincones (2013), Stovall (2014)
Critical discourse analysis	Ayers (2013, 2014), Bjarnson (2013), Johnson (2011), Pulos (2013), Wirgau et al. (2010), Rogers (2004)
Indigenous	Cook-Lynn (2008), Iseke (2013), Tomaselli, Dyll, & Francis (2008)
Testimonio	Elenes (2013), Saavedra & Pérez (2012)
Critical feminist policy analysis	Allan, Iverson, & Ropers-Huilman (2010), Bensimon & Marshall (2003), Shaw (2004), Suspitsyna (2010)
Critical photovoice	Taaffe (2014)

For a general overview of critical qualitative methodologies, readers are encouraged to see Denzin et al. (2008), Peréz and Pasque (in press), and Steinberg and Cannella (2012)

would we learn if Indigenous or testimonio methodologies were utilized in a study of organizational governance in Minority Serving Institutions (MSIs) and Predominantly White Institutions (PWIs)?"

As in all sound research, in critical higher education organizational studies there must be congruence between epistemology (knowing), ontology (being), axiology (ethics), methodology (research design), and praxiology (doing). These inquiry elements are interconnected; none exist in isolation, although not all elements are explored in all cases by the researcher (Jones et al., 2014). Our extended review of critical inquiry's theoretical roots, core assumptions and methodological considerations has emphasized the praxiological dimension of critical organization research – the expectation for sustained engagement with research stakeholders and the ability to inspire action (Brookfield, 2005) – given our belief that this is an essential feature of transformative research. We concur with Shields (2012) assertion that the challenge for critical scholars is to "conduct research with as much independence, credibility, rigor, and discipline as possible, but then, once one has drawn some conclusions, to take on the role of activist and ensure that the findings are not only understood but, where appropriate, acted upon" (p. 11).

As noted in the introduction to this critical inquiry overview, there are many critical theories (Kincheloe et al., 2012) and it is impossible and ill-advised for us to claim that our perspective on critical advocacy research reflects the only way to approach critical studies of higher education organizations. To do so would be to engage in the very ideological domination that critical inquiry seeks to overturn (Alvesson & Deetz, 2006). Thus we close this discussion with the acknowledgment that the critical theoretical tenets, assumptions and methodological considerations highlighted in this section reflect our critical orientation, not a universal critical ideology as such an ideology does not exist. We are confident, however, in the claim that for higher education organization scholars, critical research begins with the premise that our role as researchers is not simply to describe inequity as it exists, but to also demonstrate what needs to be changed (Shields, 2012; Tierney, 1991a). Critical scholarship enacts the interconnections of knowing, doing, theory and practice (Carspecken, 2012). As such, critical activist research requires us to interrogate current higher education systems, procedures, and processes and make transformative change toward social justice, inclusion and educational equity.

To be sure, it takes courage on the part of the higher education researcher to employ these assumptions in the academic environment and in research designs; it is political, radical, emancipatory, and life changing. It is also the antithesis of positivist research, as it calls into question dominant colonial and hegemonic paradigms. These radical terms have the potential to make paradigmatic shifts in higher education organizations and offer relevant and needed interpretations, strategies, and solutions as we take active roles in exploring, researching, and changing higher education organization practices, procedures and relationships toward social justice and educational equity. Tierney's (1991b) edited volume, *Culture and Ideology in Higher Education*, articulated a critical agenda for higher education and has become a foundational volume for critical thinking in the field of higher education.

Having provided an overview of the critical research paradigm and described its potential role in transforming higher education organizations, we now examine and reimagine the landscape of higher education organization inquiry. We document dominant approaches to the study of higher education organizations, focusing on (1) research topics and (2) methodologies. The critical synthesis of both areas of qualitative organization research provides the necessary foundation upon which to build our argument for the expanded application of critical advocacy perspectives in the study and transformation of higher education organizations. The decision to focus our attention in this chapter on the promise of particular critical methodologies (e.g., critical case study) rather than specific critical theories (e.g., queer theory) reflects our observation that while critical social theories are certainly not widely adopted in the higher education research community, the field has more readily embraced non-dominant theoretical perspectives than methodological ones. By centering methodological considerations and possibilities, we hope to increase the field's knowledge and comfort with empowerment-oriented research designs and innovative data collection, analysis and representation processes. Additionally, if we are to interrogate organizations in an effort to offer original findings and implications that challenge the status quo and move the field toward social justice and educational equity, it is important to start asking different questions about familiar topics, raising new topics for inquiry, and disrupting traditional norms of knowledge production.

Higher Education Organization Research Topics

The field of higher education is not devoid of critical paradigms and theories. However, as Bess and Dee (2012b), St. John (2009), and Kezar and Dee (2011) have noted, positivism is the dominant paradigm and one that is often utilized without recognition of its existence; a hidden and pervasive approach to organizational research. Given that post-positivist perspectives on higher education organizations continue to dominate the literature, it is not supervising that contemporary higher education organization research examines topics of interest to post-positivist scholars (e.g., organizational structure, formal authority, accountability, etc.). If critical scholars wish to contribute to the transformation of higher education organizations, they must begin to ask different questions and bring a critical eye to traditional topics of organizational inquiry. In the following section we survey dominant higher education organizational inquiry topics, paving the way for a discussion on the possibilities of critical inquiry.

Dominant Higher Education Organization Research Topics

There are a number of topics that fall under existing organizational research and these topics merge to create the overarching and shifting system of higher

education. As Burton Clark (1983) stated, the university system "is an idea we can hardly do without even when plagued by its ambiguity and shifting meanings" (p. 4). To be sure, ambiguity continues to exist as does myriad meanings of higher education. Clark's questions about how work is arranged, beliefs maintained, power distributed, systems integrated, and organizations change remain important to raise, particularly within the shifting economic, socio-political, global, and cultural contexts.

With respect to the topics examined in higher education organization research, Bastedo (2012b) argues that higher education scholars have disproportionately focused on administrative elites such as presidents, trustees, and policy makers. The scholarly focus on positional authority and formal organizational structures reifies existing power dynamics and post-positivist depictions of organizations as unified, rational, and stable bodies. Organizational research is conducted in service to organizational elites (e.g., how to improve governing board effectiveness, leveraging organizational culture to advance leadership agendas, models of faculty senates), rarely placing historically marginalized individuals and groups (e.g., administrative assistants, custodial staff) at the center of inquiry.

Traditional lines of organizational inquiry also illustrate the influence of ideology in shaping research agendas as dominant research topics reflect priorities of global capitalism (e.g., accountability, efficiency, privatization). In some respects, we see the limited scope of organization research as a product of disciplinary power (Foucault, 1980), a form of self-surveillance where individuals voluntarily accept oppressive dominant ideologies as rational and inevitable. Contemporary discourses of academic capitalism (Slaughter & Rhoades, 2004), accountability (Denzin, 2009; Lincoln & Cannella, 2004b), and scientifically based research (National Research Council, 2002) narrowly frame what counts as legitimate inquiry, what lines of research will receive external funding, and what topics will be considered of broad scholarly appeal in academic conferences and peer-reviewed journals (Pasque et al., 2012). Scholars seeking to meet escalating demands for publication and external funding will develop research agendas congruent with the dominant organizational ideologies, designing studies aligned not with personal interest but with the priorities of funding agencies, peer review panels, and academic administrators. Narrowly disciplined organizational research agendas are passed down from senior to emerging scholar as dissertation advisors council students to pursue "publishable" research and members of tenure committees encourage junior faculty to chase research dollars rather than organizational justice.

A personal anecdote from one of the authors (Rozana) illustrates the potential influence of disciplinary power in constraining higher education organizational research agendas. During an advising meeting one of Rozana's advisees expressed interest in designing a thesis project which examined support staff leadership organizations (e.g., the College of Arts and Sciences Staff Council). The student was passionate and knowledgeable about the topic but was reluctant to pursue this line of inquiry based on the counsel of the department chair who informed her "there was no money in staff research." The department chair's message was clear – market priorities, not student interest nor a concern for empowering university support staff

(a campus constituency all but invisible in the organization literature) should drive the development of a research agenda. Accepting the department chair's assertion as fact, the student opted to pursue a more market-friendly thesis topic. In this example we see the constraining influence of the dominant academic capitalism ideology on higher education organization research. Despite a genuine interest in advancing staff empowerment, the student engaged in self-discipline, jettisoning the critical research topic in favor of one that was more likely to secure external funding and academic prestige.

Table 7.3 presents a comprehensive, but certainly not exhaustive list of organization topics that have been thoroughly researched from various approaches.

The research topics listed in Table 7.3 are not inherently post-positivist, constructivist or critical in nature; rather they are lines of inquiry which can be pursued from multiple perspectives. For example, the topic of higher education governing boards can be studied from both a post-positivist and critical perspective. A post-positivist examination of governing boards would focus on identifying the universal

Table 7.3 Topics in organization research

Institutional missions	Checkoway (2001), Chesler and Crowfoot (2010), Gonzales (2013), Longanecker (2008)
Governance and governing boards	Ayers (2013, 2014), Glazer-Raymo (2008), Hearn and McLendon (2012), Longanecker (2006), Tierney (2006, 2008), Wellman (2006)
Decision making	Bird (2011), Eckel and Morphew (2009), Tierney (2008)
Organizational learning	Bess and Dee (2012b), Kezar (2005), Senge (2000)
Leadership	Bensimon and Neumann (1993), Kezar (2002), Kezar et al. (2006), Kezar and Lester (2010), Kezar and Sam (2013)
Tenure, promotion, and non-tenure track faculty	Ellison and Eatman (2008), Bess and Dee (2012a, 2012b), Kezar (2013), Lawrence, Celis, & Ott (2014)
Sensemaking	Evans (2007), Gonzales (2013), Kezar (2012), Smerek (2013), Suspitsyna (2013), Weick (1995)
Bureaucratic structures	Bird (2011)
Loosely coupled systems	Dee (2006), Weick (1988, 2010)
Rankings	Bastedo and Bowman (2011), Pusser and Marginson (2012)
Globalization	Kauppinen (2012), Seifert, Perozzi, Bodine Al-Sharif, Li, & Wildman (2014), Vaira (2004)
Community-university engagement	Fitzgerald, Burack, & Siefer (2010a, 2010b), Jaeger, Jameson, & Clayton (2012)
Conflict of interest	Slaughter, Thomas, Johnson, & Barringer (2014)
Measurement of effectiveness	Cameron (1988)
Accountability	Dee (2006), Heller (2011), St. John (2011), Trow (2010), Zumeta (2011)
Funding	Jaeger et al. (2012)
Privatization	Morphew and Eckel (2009), Priest and St. John (2006), Slaughter and Rhoades (2004)

characteristics of highly efficient and effective boards while a critical study might draw upon critical race, queer, and/or feminist theory to analyze how trustee demographics (predominately heterosexual white male business professionals) contribute to the perpetuation of racist, sexist, and heteronormative organizational norms, beliefs, and practices.

A second example of an organizational research topic which can be examined from multiple perspectives is the privatization of higher education. Eckel and Morphew (2009) outline the ways in which higher education might explore the influence of privatization on administrative behavior. Rather than framing privatization as a "threat" or "crisis," the scholars explore the influence of privatization on five areas of university management, including money, altered organizational structures and decision making, changes in staffing arrangements, and the impact on the curriculum, offering propositions for the future of higher education organizations during this time of dramatic organizational change. Slaughter and Rhoades (2004), Cannella and Lincoln (2004a), and Giroux and Giroux (2004) do not share the productive view of privatization advanced by Eckel and Morphew, and instead, take up the issue of privatization from a place of crisis. These critical scholars explore the ways in which the privatization of higher education perpetuates classism, racism, sexism, and other systemic inequities as it permeates colleges and universities. The organizational topic of privatization is not inherently critical or post-positivist; it is the ideological orientation of the researcher that determines the aims of inquiry: predicting organizational behavior (post-positivist), understanding organizational life (constructivist) or social transformation (critical).

In addition to empirical studies of higher education organization, the scholarly landscape also includes numerous books on higher education organizational life authored by current and former university presidents and provosts. In these texts, wisdom and recommendations tend to be drawn from experience not empirical investigation (Bok, 2003; Guarasci & Cornwell, 1997; Ramaley, 2006; Weingartner, 2011). For example, Weingartner talks through various university offices including the president's office, chief academic officers, athletics, development, general counsel, student affairs, and faculty senates, while offering "twenty-seven maxims." One of these maxims is that "in academic institutions, the forces of nature are centrifugal; organizational art must be used to create propensities toward coherence" (p. xv) and "'A' people hire 'A' people, while 'B' people hire 'C' people" (p. xvii). These opinions offered as organizational rules can be quite dangerous if higher education leaders perceive these principles as "truth" regarding the organization and operation of an institution.

The topic of institutional and system-wide culture is particularly important to the study of higher education organizations. In *The Impact of Culture on Organizational Decision Making*, Tierney (2008) takes a decidedly "interpretive perspective" versus the traditional realist perspective as he explores culture on organizational decision making (p. 3), including his intentionally critical approach to an ethnographic study on institutional culture (p. 49) and postmodern approach for institutional socialization (p. 89). We concur with Tierney when he argues that specific "cultural models of assimilation create problems for those who are different – frequently

students of color" (p. 4). Specifically, scholarship on academic public engagement is discouraged and risky, particularly for faculty of color seeking tenure (Ellison & Eatman, 2008). Decision making that perpetuates systemic sexism through a lack of transparency and access to information remains problematic throughout higher education organizations (Bird, 2011). As such, creativity and innovation through decision making processes should be centered (Tierney, 2012). Tierney explores creativity and organizational culture through the frameworks of integration, differentiation, and fragmentation for organizational change.

Higher education organization research has historically focused on the organizational experiences and priorities of those in formal positions of power (e.g., boards of trustees, faculty senates, efficiency, accountability, hierarchical decision making). Advancing a critical organizational research agenda will require examining traditional topics from new perspectives, ones that center the experiences and priorities of historically marginalized individuals and groups not organizational elites. Consistent with critical social theory aim of ideology critique, critical approaches to studying traditional organizational inquiry topics will focus on identifying, interrogating, and disrupting the dominant ideologies (e.g., globalization, academic capitalism, neoliberalism, white privilege) that shape and constrain organizational norms, beliefs, values and formal structures. Adopting new approaches in the study of traditional organization inquiry topics is an important but insufficient step in advancing a critical higher education research agenda. Critical inquiry encourages imagination and novelty as it consistently works toward exposing aspects of higher education culture and systems that reproduce inequity. Thus, to engaging in critical organization inquiry necessitates asking new questions and examining new topics.

Critical Higher Education Organization Research Topics and Questions

Building on the previous discussion of dominant higher education organization research topics, we now turn our attention to new lines of inquiry pursued by critical organization scholars within and beyond the field of higher education. Although post-positivism continues to dominate organizational inquiry (Bess & Dee, 2012b; Kezar & Dee, 2011; St. John, 2009), we identified numerous examples of rigorous and transformative research that explores organizational questions and topics from a critical approach. As such, it is up to those interested in advancing critical perspectives on higher education organizations to learn from existing studies, draw from interdisciplinary knowledge, reduce the historical amnesia, and ask new and innovative questions that build upon the theoretical roots, philosophical assumptions and methodological considerations of critical inquiry.

To help higher education scholars imagine and articulate critical organization research topics, we review a set of guiding critical inquiry questions developed by Cannella and Lincoln (2012) as well as draw inspiration and insight from critical

management studies (CMS) (Alvesson & Deetz, 2006). Although situated beyond the borders of the higher education research community, CMS's focus on examining "hegemony in the workplace (Alvesson & Deetz, p. 262) is of relevance to higher education scholars interested in disrupting oppressive leadership and management practices. Similarly, despite the fact that Canella and Lincoln's critical inquiry questions are not explicitly focused on research within the higher education context, the questions transcend disciplinary boundaries, helping point the researcher's attention towards topics that focus on ideology critique, research for the purposes of social transformation, and empowerment, three defining features of critical social theory reviewed earlier in the chapter.

Critical Questions Advocating for a *revolutionary* [italics in original] critical social science that "supports egalitarian struggles for social justice" (p. 112), Cannella and Lincoln (2012) encourage critical scholars to ask and act upon the following questions:

- How are particular groups represented in discourse practices and social systems?
- What knowledges are silenced made invisible or literally erased?
- What are examples of oppressions (and/or new exclusions) that are being made to sound equitable through various discourses?
- How do elite groups define values constructs and rhetoric in ways that maintain matrices of power?
- How are particular discourses infused into public imaginary (e.g., media, parenting, medicine)?
- How are power relations constructed and managed through? (p. 112)

When these questions are considered in relation to higher education organizations, they help to ground inquiry in awareness and connect it with revolutionary activism around the ways in which higher education may perpetuate – or interrupt – dominant paradigms of oppression and injustice. To illustrate the potential value of these questions in shaping a critical research agenda, we use the questions to frame existing and imagined studies of higher education organizations.

When taking up the question, "*How do elite groups define values constructs and rhetoric in ways that maintain matrices of power?*" critical organization scholars are challenged to surface and critique dominant ideologies that are often framed and accepted as common sense norms adopted in service to the public good (Brookfield, 2005). Thus, as explained earlier in the chapter, de-familiarizing these taken-for-granted organizational assumptions (Alvesson & Deetz, 2006) and constructing an alternative interpretation which interrogates and disrupts the hegemonic discourse are central tasks of critical organization inquiry. Chesler, Lewis and Crowfoot's (2005) critical analysis of institutional racism illustrates the transformative promise of questioning the power embedded within dominant organizational discourses. The scholars argue that the widely embraced practice of reducing racism solely the individual (albeit important) level negates or lets institutions off the hook regarding their collusion in organizational racism. Chesler et al. offer a model of institutional racism in higher education organizations and flush out specific

examples of organizational dimensions, programs, and activities that fit the organizational model, including missions, culture, power and governance, membership, social relations and climate, technology, resources and boundary management (pp. 268–269). This qualitative scholarship provides new ways of thinking of – and actively transforming – higher education institutions in ways that systemically address the rhetoric and practice of racism throughout organizations. Revisiting the contemporary organization challenges described earlier in the chapter, Cannella and Lincoln's (2012) call to interrogate organizational rhetoric which reifies oppressive power structures might be of value to critical higher education scholars interested in contesting and transforming the contemporary accountability movement as well as the rhetoric of efficiency used to frame campus restructuring efforts like the University of Michigan's Shared Services Center.

The critical inquiry question, *How are particular groups represented in discourse practices and social systems?* provides higher education organization scholars with a starting point for examining the critical assumptions that "certain groups in any society and particular societies are privileged over others" and "oppression has many faces, and focusing on only one at the expense of others (e.g., class oppression versus racism) often elides the interconnections among them" (Kincheloe et al., 2012, p, 15). Examining which and how social identities are made (in)visible in higher education organizational discourses (e.g., strategic planning, mission statements) and social systems (e.g., governing boards, academic departments) disrupts the dominant ideological belief that individuals and organizations can overcome discrimination and end oppression by ignoring difference (Bonilla-Silva, 2006; Carr, 1997; Wildman, 1996). Conducting higher education organization studies which intentionally incorporate reflections on identity in the research design (even when identity is not the focus of study) is an essential step toward engaging in scholarship which recognizes the socio-political, geographical, colonizing, and historical oppression which perpetuate educational inequities. To illustrate this point, we return once again to the University of Michigan Shared Services Center. While a critical analysis of the University's reorganization efforts might focus on the influence of neoliberal ideology on shifting labor patterns, the formulation of external partnerships, and constructions of efficiency, the role of gender in the restructuring initiative should not be ignored. Gender may not necessarily be the specific topic of the study; however gender is an important aspect of any institutional culture, particularly as scholars consider the "glass ceilings," "chilly climates," and "sticky floors" in higher education (Allan, 2011; Eliasson, Berggren, & Bondestam, 2000; Hall & Sandler, 1982; Sandler & Hall, 1986).

It is not enough, however, to examine particular identities in isolation (e.g., race or gender, or sexual orientation), critical social theory calls for an expanded focus on examining the manifestations and implications of intersecting oppression (e.g., race and gender and sexual orientation. Researchers have traditionally kept categories such as gender, class, and ethnicity separated from one another in terms of how they functioned within an individual or group (Stewart & McDermott, 2004). Recently studies have examined gender, class, ethnicity, race, and sexuality not as separate variables, nor as cumulative, but as intersecting categories that create

unique experiences and psychologies that are qualitatively different rather than a mechanical combination of their individual effects (Stewart & McDermott, p. 534). The authors maintain that scholars who have separated the topic of race into variables consisting of homogenous groups missed important findings if intersections were ignored. Stated another way, in a higher education study that focuses on the topics of race and gender by using the variables of institutional leaders, researchers may miss important findings about the intersectional complexities of class and/or sexual orientation to the study, and its impact on the organization. This reflects the Chesler et al. (2005) example above. To be sure, the question itself dictates assumptions about what is in/excluded. In this example of intersectionality, it "requires us to examine all social locations simultaneously – and that degree of complexity is daunting and frequently impractical" (Stewart & McDermott, p. 537) yet particularly relevant for the study of colleges and universities, and the people within and excluded from these organizations.

Critical Management Studies In addition to drawing insight from Cannella and Lincoln's (2012) critical inquiry questions, higher education researches seeking inspiration in the identification of critical organization research topics may find it valuable to review the critical management literature that provides new theories for framing studies and new questions/topics for study. Critical management studies (CMS) seek to "create societies and workplaces which are free from domination, where all members have an equal opportunity to contribute to the production of systems which meet human needs and lead to the progressive development of all" (Alvesson & Deetz, 1999, p. 192). CMS is also "concerned with the role of management and how management practices can and do lead to relationships of inequality and domination" (Foster & Wiebe, 2010, p. 271) where critical management theorists problematize mainstream management theories and practices and uncover the ways in which these ideas are oppressive (Alvesson & Willmott, 1992). Topics explored in CMS inquiry include the role of contracts and reward systems in establishing and maintaining asymmetrical power relations, critical analysis of the dominant ideologies embedded in organizational rules and policies, and the homogenizing and hegemonic aims of corporate culture programs (Alvesson & Deetz, 2006). These CMS constructs are not unique to for-profit organizations and could easily be reframed to make familiar higher education management practices and processes strange in the interest of disrupting and overturning oppressive organizational orthodoxies.

As these examples of critical management studies and critical inquiry questions have illustrated, there is much to be gained from a critical and reflective questions and topics in organizational research. Critical scholars have a responsibility to engage and work toward change (Denzin, 2010) in the current era of educational inequities and a "war" on people or color, the working class, the poor, food, maternity care, environmental sustainability, human trafficking, and other interrelated issues that connect to education (Giroux & Giroux, 2004). Higher education institutions and scholars play a role in asking critical questions about important topics in a way that can make concerted change across and between various

fields and topics (Pasque, 2010). A continual investigation of the absences and invisibilities inherent in research questions as we approach organizational topics is imperative in this current and changing era of higher education and the role organizations will play in addressing educational and societal inequities. Given that the nature of research questions significantly influence choice of research designs, it is fitting that we move from a discussion of higher education organization research topics to a review of dominant and critical methodological approaches to studying higher education organizations.

Higher Education Organization Research Methodologies

As noted in the overview of critical inquiry provided earlier in the chapter, a core assumption of critical work is that "mainstream research practices are generally, although most often unwittingly, implicated in the reproduction of systems of class, race, and gender oppression" (Kincheloe et al., 2012, pp. 15–16). This observation underscores the need to give careful consideration to methodological choices if the researcher hopes to realize the empowering and transformative aims of critical inquiry.

In our brief introduction to the critical research paradigm, we highlighted three characteristic features of critical methodologies, (1) a conceptualization of the researcher as reflective, political and engaged change agent, (2) a methodological focus on making the familiar (i.e., taken for granted, common sense organizational orthodoxies) strange, and (3) a commitment to conceptualizing research as a vehicle for empowering historically marginalized individuals and groups to act on their own behalf in resisting and overturning oppressive organizational norms. While critical scholars from within and beyond the field of higher education have successfully developed a robust body of critical and indigenous methodological scholarship that reflects these three focal features (Denzin & Lincoln, 2011; Steinberg & Cannella, 2012), critical methodological frameworks remain subject to attacks from neoliberals who seek to sustain the dominance of the post-positivist research paradigm (e.g., scientific method, evidence based inquiry) in the interest of perpetuating the inequitable status quo. Given that higher education scholars seeking to advance a critical higher education organization research agenda will find themselves conducting and (unfortunately) defending this research within an era of methodological conservatism (Pasque et al., 2012), we extend our discussion of critical methodological tenets and challenges in the interest of preparing researches to situate their work within contemporary inquiry politics. While some may question this expanded discussion of methodology in a chapter on higher education organization research, we contend that methodological choices are a vital to enacting the political agenda of critical inquiry and fostering positive organizational change. As in previous sections, we begin with a discussion of dominant higher education research methodologies and then elaborate on the possibility of critical qualitative research designs.

Dominant Qualitative Methodologies in Higher Education Organizational Research

A number of authors address general questions of qualitative methodology and provide an overview of research design considerations for scholars (Creswell, 2007; Jones et al., 2014; Marshall & Rossman, 2006, 2011; Merriam, 2009; Miles & Huberman, 1994; Patton, 2002; Rossman & Rallis, 2003; Schwandt, 2001; Stage & Manning, 2003; Yin, 2011). Such texts are widely used in studies on the organization of higher education by early-career, mid-career, and senior faculty alike. It is important to note that some of these basic introductory texts omit or only briefly mention critical inquiry as an approach to transformative qualitative research, albeit as updated editions are developed, so are concepts of critical inquiry. For example, in the third edition of Marshall and Rossman's (1999) book on designing qualitative research, the author's mention critical and emancipatory research, yet do not necessarily encourage critical methodological approaches to research design or transformative approaches regarding race, gender, class, and educational in/equity, or intersectionality (Collins, 2000; Crenshaw, 1989, 1993; Davis, Brunn & Olive, 2015; Stewart & McDermott, 2004). However, in Marshall and Rossman's fifth edition (2011) the author's introduce an entire section in chapter 2 on "critical genres" and explore critical narrative analysis, action research and participatory action research, cultural studies, internet/virtual ethnography, critical ethnography, feminist theories and methodologies, critical race theory, and queer theory and analysis. The authors carry these threads throughout discussions of ethics, research design, data collection examples, artifacts of material culture, analysis strategies, and forecasting final representations. The revisions in the Marshall and Rossman book are examples of how conceptualizations of research in education constantly change and revisions are necessary as we make adaptations in critical qualitative inquiry. We appreciate the authors of introductory textbooks who engage the philosophical achievements in the genealogy of qualitative inquiry and encourage higher education faculty who teach graduate students to seek texts that thoroughly describe the array of critical perspectives.

The primary qualitative methodologies in organizational research include case study, transcendental (vs. hermeneutic or other forms of) phenomenology, and grounded theory – with case study as most prevalent (Hutchinson & Lovell, 2004; although this citation is slightly dated, we have not observed major shifts in dominant methodological approaches). As such, we briefly discuss case studies in organizational research and provide published examples as a way to explore the existing research before offering critical approaches.

Case Studies A case study involves the exploration of a bound and integrated system (Creswell, 2007; Merriam, 2009; Stake, 1995, 2008; Yin, 2003, 2009) and enables the researcher to study a unique phenomenon retroactively that "arises out of the desire to understand complex social phenomena" (Yin, 2003, p. 2). Case study researchers draw from multiple sources to triangulate data and create a more holistic,

accurate portrait of the case from which to draw conclusions (Yin, 1994, 2003). Data sources may include observations, interviews, audiovisual material, documents, and reports in order to develop case description and identify case-based themes (Creswell, 2007). In this way, case studies ask how and why the phenomenon has occurred in a few different cases (Yin, 1994) and many organizational researchers in higher education are drawn to case study because of these principles (Kezar, 2005, 2012; Kezar & Eckel, 2002; Lee et al., 2004; Mendoza, 2007; Ness & Mistretta, 2009; O'Meara, 2004; Tsui, 2000). Gerring (2004) points out that each time a scholar attempts to clear up the definition of case study and what it means, the situation gets more complicated or worse. In order to add clarity and complexity to case study, Flyvbjerg (2011) offers "The Case Study Paradox" (p. 302) and corrects five misunderstandings of case study that constitute a conventional view or orthodoxy in this type of research. We argue that such complexities within and between definitions and misunderstandings of case study are crucial to explorations of educational in/equity and social justice in organizational research in higher education.

Grounded Theory Grounded theory has also been utilized in a few qualitative organizational research studies in the field, albeit not as frequently as case study. For example, Kezar (2005) employs grounded theory to provide evidence about the consequences of engaging in radical alteration of an institution's governance systems. Grounded theory, like many methodologies, may be followed from different paradigmatic approaches (e.g., post-positivist, constructivist, critical/postmodern), in a similar manner as case study. It is up to the researcher to reflect on the approach and then follow congruent methodologies and methods (Carducci, Pasque, Kuntz, & Contreras-McGavin, 2013). For example, various arguments regarding epistemological differences in versions of grounded theory have emerged over time (Charmaz, 2011; Morse et al., 2009). Charmaz intentionally developed a constructivist grounded theory approach (Charmaz, 2005, 2006). This method purports to lend itself more readily to interpretivism, rather than a post-positivist grounded theory approach (Corbin & Strauss, 2008). From a constructivist approach, people construct their realities and these realities emerge directly from the participant voices and are not readily quantifiable. From this perspective, the researcher-participant relationship is subjective, interactive, interdependent, and context specific (Guba & Lincoln, 1989). Charmaz (2006) argues that grounded theory can be congruent with a constructivist lens, if approached in a methodologically congruent manner.

In a different turn, Clarke (2005, 2007a, 2007b) argues for a postmodern approach to grounded theory. Through this, participants interactively construct the social fabric of the conversation through discourse as it shapes participation in the discussion. Clarke's approach includes methods of data analysis that are messy and interconnected and, while she argues that they develop theory from a postmodern approach, could arguably fall under different paradigmatic approaches other than postmodern. Articulation of a postmodern approach does not necessarily mean the entire research design, write up, dissemination, and continued connections

with the community are transformative and critical. Critical postmodern grounded theory holds potential for organizational scholars who seek not just to study higher education, but to transform it. It also may be useful as it reflects the "messy" and interconnected nature of higher education organizations (see Pérez & Cannella, 2011, 2013).

In the absence of an academic culture supportive of methodologies from a critical inquiry perspective that focus on equity and social justice, researchers who study organizational research are opting primarily for case study from a post-positivist paradigm, even if the topics themselves are critical in nature (e.g., institutional racism, tenure and promotion, or academic freedom). Is this an intentional decision with specific paradigmatic perspectives in mind? Or are researchers forced to choose positivist and post-positivist approaches in order to secure publication in a top higher education journal or successfully defend a dissertation? What would transpire if organizational researchers choose critical qualitative inquiry with a transformative methodology congruent with social justice perspectives? When research topics include concepts of social justice and inequity, there are alternative methodologies for researchers not limited to positivist and post-positivist approaches, which may be illuminating when working for social change and educational equity in higher education organizations. To be sure, philosophical, methodological and methods should also reflect principles of social justice and be inherent to the research at hand.

The Politics of Critical Methodologies

As mentioned in the introduction to this section on higher education organization research methodologies, we have decided to return to and expand our discussion of critical qualitative methodological considerations before describing specific critical methodological frameworks given the highly political nature of critical inquiry. Higher education organization scholars seeking to advance a critical agenda must be prepared to navigate the methodological conservatism which confronts critical scholarship within and beyond the field of education.

The two special issues of *Qualitative Inquiry* on "dangerous discourses" (Cannella & Lincoln, 2004a; Lincoln & Cannella, 2004b) note the various ways in which the dominant and prevailing methodological approaches foster regimes of truth that perpetuate patriarchal ways of knowing, particular criteria for validity, and "gold standards" of accountability. Some positivists have gone so far as to deem critical, postmodern, and feminist approaches as "evil." Yet, these are the approaches often employed to explore issues of civil rights, social identity issues (e.g., race, gender, dis/ability class), and inequities in institutional culture (Cannella & Lincoln, 2004b). Cannella and Lincoln describe how *testimonios* as methodology has been critiqued and not recognized even by some who purport to write about and value diversity as a way to devalue research contributions that do not follow dominant paradigms. In this way, neoliberal post-positivists question and

critique the methodology as a safe way to reduce research on the margins. These efforts include research that supports diversity issues or questions structures of accountability that reify power structures. These methodological critiques attempt to reduce the importance of the research itself, without addressing the topic in question. The label of "evil" or the mere questioning of the soundness of the methodology in-and-of-itself marginalizes any findings regarding the "other." It questions social justice issues but in way that is couched in a critique of methodology, without actually having to take a stand against social justice and educational equity.

Denzin and Lincoln (2008) describe the ways in which Indigenous scholars are leading the way on critiquing Western epistemologies and methodologies and "asked that the academy decolonize its scientific practices" to disrupt dominant ways of knowing (p. 3). Jones and Jenkins (2008) expand on Fine's (1994) approach of "working the hyphen" and "work the Indigene-Colonizer hyphen" by raising questions such as, "who is the outsider" and learning the logic from the "other." Denzin and Lincoln point out that, as decolonizing methodologies and perspectives have increased in the field, "a backlash against critical qualitative research gains momentum" (p. 4). Yet, decolonizing methodologies may open up possibilities for organizational researchers who seek new insights into higher education. They may also provide feasible options for organizational change. Working the hyphen in the Indigene-Colonizer relationship with the immigrant people who serve as campus maintenance staff, faculty, staff, and/or administrators would provide a different approach to the organizational research. Indigenous methodologies may also be useful to explore the "partner" institutions that U.S. colleges and universities are fostering across the globe. Cannella and Lincoln's (2004a) critical inquiry questions take on new meaning in this context and by asking, what are examples of oppressions (and/or new exclusions) that are being made to sound equitable through various discourses? How are particular discourses infused into public imaginary (e.g., media, parenting, medicine)? And how are power relations constructed and managed through? (p. 112).

In this current academic climate, how can we follow through on addressing oppression and injustice and translate this into methodological action and the various methods in organizational research? To be sure, dominant methodologies have yet to create climates of equity and inclusion. Bensimon and Marshall (2003) describe "the reasons why the master's tools will never dismantle the master's house" (p. 338) by dissecting the meanings of "master," "gender," "tools," "the purpose of policy analysis," and exploring why traditional methodologies are incapable of addressing inequities. Specific to feminist higher education research, but similar to Cannella and Lincoln's (2004a) argument, Bensimon and Marshall assert,

> The insurrection of subjected knowledges represents a challenge to the authority and power of the master's narrative. The master will not be pleased by this. The displeasure may be disguised . . . but the threat to authority and power provokes emotional responses – antagonism, fear, disapproval, hostility – which are masked by the rhetoric of indirectness, provisos, qualifiers, feigned alliance. Such alliances, while asserting they embrace feminist causes, undermine our progress toward creating and validating women's knowledges and spaces in postsecondary institutions. (p. 338).

Bensimon and Marshall urge higher education researchers to use critical methodologies, such as feminist critical policy analysis to transform postsecondary education.

As a critical qualitative methodological example, Peréz and Cannella (2011) describe how they utilize situational analysis methods for critical qualitative research and advocacy research from a grounded theory methodological approach. This helpful chapter outlines the methods and analytic processes the authors took in their own research study, which may be useful to higher education organization researchers interested in postmodern or poststructural grounded theory for advocacy purposes, albeit in different contexts.

In an empirical example of this critical qualitative approach, Peréz and Cannella (2013) expose "neoliberal circumstances related to the dismantling and privatization of the public education system in post-Katrina New Orleans [as] an example of how situational analysis can be used for critical, feminist, poststructural purposes" (p. 515). The authors stress how critical qualitative approaches exist, yet scholars continue to search for "perspectives and methods that facilitate ethical practice and opportunities for socially just inquiry from within a context that has acknowledged science as producer of power and privilege" (p. 506). As such, the researchers utilized media and public documents, publications distributed by local organizations, field notes of volunteer experiences in the local community, and public meetings focusing on education. Included in one of the researcher's volunteer experiences was participating in and driving community members to organizing events and protests in order to help community voices be heard by policy makers. This is indicative of how "research" does not begin and end with a pre-determined and intentional research design.

What would happen if we used critical methodologies such as *testimonio* to explore organizational research in higher education such as governance, decision making, or tenure and promotion processes? Critical geography to consider the institutional culture? Critical discourse analysis to expose conceptualizations of accountability and efficiency in academic and co-curricular departmental written and verbal expectations? Postmodern case study to explore why social agents accept systems of collective representations that do not serve their interests but legitimate the existing power structure? In the next section, we offer contemporary examples as we explore these questions in the organizational context of higher education. Each example included was selected because of the ways in which it followed the theoretical tenets, assumptions and methodological consideration introduced in the critical inquiry overview.

Examples of Critical Methodologies in Higher Education Organization Research

There are a few current examples of critical methodologies in organizational research from higher education scholars as well as scholars who, while located

outside of higher education departments, study higher education topics. Examples of this work can be found in the supplemental issue of *The Review of Higher Education* edited by Bensimon and Bishop (2012). In their introduction to the issue, the editors pose the question, "Why 'Critical'? The Need for New Ways of Knowing" as they outline the call for manuscripts that addressed "critical research questions" (p. 3). Some – but not all – of the articles selected for this supplemental *Review of Higher Education* issue reflected critical qualitative methodologies as well as critical topics. As we argued earlier in the chapter, identifying critical research topics and articulating critical research questions (questions that seek to examine taken-for-granted assumptions of power and reified structures and processes of oppression) does not necessarily require that the researcher adopt a critical advocacy approach and exhibit a "courageous and long term engagement and follow-through" (Shields, 2012) with research stakeholders and participants. This is a particular position along the critical inquiry paradigm continuum (Kezar & Dee, 2011), one that we would like to see more higher education organization scholars adopt in the interest of conducting research that realizes the potential for transformative research.

Critical Case Study Given the popularity of case study research on higher education organizations, we find tremendous promise in critical case study methodology as a vehicle for examining and transforming hegemonic organizational norms, practices and relationships. In critical case study research, scholars draw upon the unique methodological considerations of critical inquiry (e.g., research reflexivity, empowerment, surfacing hidden, common sense organizational ideologies) to inform data collection, analysis and representation decisions. For example, Schoorman and Acker-Hocevar (2010) reimagine research on faculty governance by drawing upon their own lived experiences as faculty assembly officers to "examine various and complex ways in which power dynamics are enacted in governance structures" (p. 311). Rather than assuming the role of dispassionate observer at an unfamiliar campus, Schoorman and Acker-Hocevar are engaged activist scholars, combining personal knowledge with sophisticated social theory analysis in an appeal for a collective agenda through institutional governance. Specifically, the authors call for faculty to be proactive and work collectively for change, the antithesis of the current climate where methods for accountability ensures that faculty work in silos and isolation, reinscribing the uncritical and the logic of academic corporatization. This critical case study illustrates the potential for critical inquiry to take up traditional organizational research topics (e.g., faculty governance) in novel, compelling and transformative ways.

While critical qualitative methodologies encourage the adoption of innovative approaches to data collection, analysis and representation in the interest of interrogating and overturning deeply embedded organizational ideologies, it is important to acknowledge that all innovative methodologies are not critical, even if instructive. For example, Bastien and Hostager (2010) use jazz performance with four musicians to explore the process of organizational innovation in higher education. The authors videotaped a jazz performance and then analyzed the improvised musical event in the interest of identifying process dynamics (e.g., communication) which might be

used to understand and promote innovation in higher education organizations. While the authors offer an engaging analysis that explores the complexities of a group jazz performance and the implications for understanding the organizational innovation process in higher education, the study does not follow all assumptions and principles of critical qualitative research (e.g., focus on hegemonic power structures with an aim toward social transformation). However, it is one of the more innovative organizational studies that currently exist in higher education research and illustrates how adopting novel approaches to "data" collection and analysis can shed light on familiar organizational topics (e.g., innovation).

Critical Feminist Policy Analysis Critical feminist policy scholarship is another critical methodology of potential value in examining higher education organizations as studies anchored in this framework center a historically oppressed social identity (gender), seek to develop particular, not universal, understandings of humane experience, and unapologetically engage in inquiry with the aim of social transformation – all three essential features of critical inquiry. Shaw (2004) connects case study with feminist critical policy analysis in her study of welfare reform legislation where feminist critical policy analysis is the analytic tool to explore the "gendered nature" of welfare reform as related to postsecondary education policy (p. 57). She finds that the policy is not gender neutral and works to constrain poor women's autonomy and the ability to make choices that make sense within the context of their live (p. 69). Shaw is one of a few – and growing – feminist theorists who takes a critical approach to higher education research. Suspitsyna (2010) also takes a poststructural feminist approach while employing critical discourse analysis to explore the connections between power and neoliberalism in higher education through the discourse of the U.S. Department of Education. She concludes that "the vision of higher education is highly problematic from a feminist perspective, for it solidifies institutionalized sexism inherent in the current operation of educational organizations and society at large" (p. 75). For more on feminist research from different methodological perspectives, see the *Handbook of Feminist Research: Theory and Praxis* (Hesse-Biber, 2007) and *Reconstructing Policy in Higher Education: Feminist Poststructural Perspectives* (Allan, Iverson, & Ropers-Huilman, 2010). (Also see Bensimon & Marshall, 2003; Marshall, 1997, 1999; Tierney & Bensimon, 2000).

Critical Geography Critical geography is another methodological approach for organizational scholars to consider. Critical geography insists "on the simultaneous attention to space, place, power, and identity" and educational researchers should "(take) 'the spatial' aspects of these forces seriously in the study of the lived experiences of schools" (Helfenbein, 2011, p. 319). As such, critical geographers emphasize the necessity of spatial analysis for understanding the social and historical processes that shape power relationships and the lived experiences of human beings (Lefebvre, 1991; Soja, 1996). For example, Kuntz (2012) has used it to explore intersections among faculty work practices, workplace, and professional identity as he urges for a reduction of isolating campus environments. Consistent with critical inquiry, Kuntz does not stop at analysis for analysis sake, but

employs this information through his future research studies and work with faculty through his administrative positions within the academy. In another example, Ozias and Pasque (2012) found that the inclusion of critical geography in pedagogical approaches to higher education service-learning courses have helped students more readily understand the complexities of oppression in local communities. This information has been shared with scholars and practitioners across the country and aided in altering service-learning curriculum. Further, Somerville (2012) found that the critical power of place as a substitute for "environment," often used in current organization literature. She argues, "If we think, for example, of using the concept of 'environment', rather than place, we could come up with an entirely different set of stories and assumptions" as environment is based on discourses of the natural sciences, which assumes as separation between subject and object, whereas discourses of place include sense of self and how places shape identities and our interactions – in turn – shape places" (p. 68). As such, current research on the topic of the environment in higher education organizations as explored through the methodology of critical geography start with different epistemological and ontological assumptions than non-critical methodologies and provides new lenses to explore organizations as we work toward institutional change.

Similar to critical case study, critical ethnographers (Tierney, 2008) adapt the methodological principles of ethnography (e.g., participant observation, sustained engagement with the field, researcher reflexivity, a focus on understanding (sub)cultures) to interrogate and transform oppressive organizational dynamics. In another example, Gonzales and Rincones (2013) utilize a critical lens through participatory action research (PAR) and a photo-enhanced methodological approach to explore the role of emotion in academic work, namely with department chairs. In this PAR study, the researcher and "participant" collaboratively constructed knowledge, rather than enacting post-positivist research roles that clearly distinguish researcher from "subject." The use of photo-elicitation methodology provided a means for the co-researchers to re-enter deeply personal stories of emotional labor. The combination of these critical methodologies allows the researchers to "counter the overly rationalistic depiction of organizational leadership research and thinking" (p. 1) as well as provide a model for non-dominant critical qualitative research to explore a radical/non-dominant/progressive topic such as emotion in research with organizational elites (e.g., department chairs).

In the above examples, the scholars intentionally articulate their critical methodological approaches to the research and follow through on congruent methods. This scholarship informs their activist approach in and/or outside of higher education. While there are a few studies that utilize various critical methodologies for the study of higher education, there are far more critical methodologies available to the study of organization in higher education than scholars realize. We encourage scholars to explore the ways in which moving beyond positivist and post-positivist methodologies may provide new opportunities for exploration and change in organizational research and praxis, such as indigenous and critical ethnography (Hickey, 2012; Madison, 2012; Tomaselli, Dyll, & Francis, 2008), critical autoethnography

(Adams & Jones, 2008), critical narrative (Chase, 2011; Madison, 2008; Shahzad, 2012; Webster & Mertova, 2007), indigenous storytelling and *testimonio* (Elenes, 2013; Iseke, 2013; Saavedra & Pérez, 2012); postcolonial feminist (Parameswaran, 2008), critical arts-based (Finley, 2011; Taaffe, 2014), and critical performance ethnography (Denzin, 2003; Spry, 2011), to name a few. Although few of these methodological examples are drawn from studies of higher education organizations, scholars interested in studying higher education organizations from a critical perspective will find an abundance of methodological inspiration in these works.

Critical methodologies new to organizational scholars may help researchers reconceptualize the concept of research and include various complexities, nuances, and outliers to "reclaim their value in critical qualitative research" instead of explaining away important elements of the research (Park, 2012, p. 548). In this way, we may be able to uncover the ways in which "redeployment of power and resources is legitimated, normalized, and even expected" in the contemporary neoliberal climate that moves ever closer to the corporatization of higher education (Cannella & Lincoln, 2004b). These approach become a way to re-think and push the edge on methodology so it may center transformative and liberatory organizations.

Conclusion: Moving Forward

Engaging in critical advocacy studies of higher education organization requires a tremendous amount of time, energy, and passion. It also necessitates a willingness to participate in the political work of challenging established epistemological, theoretical, and methodological boundaries of the higher education scholarly community. These boundaries have historically served to constrain attempts to reimagine what it means to engage in educational inquiry for equity. Fortunately, a growing number of scholars are embracing the exhausting and professionally perilous work of studying higher education organizations from critical theoretical and methodological perspectives. In this chapter we highlight a number of these scholars and their research in the interest of demonstrating the transformative potential embedded within critical organizational scholarship and sparking the imagination of higher education researchers interested in pursuing this line of inquiry/activism. We recognize, however, that espousing a commitment to studying higher education organization from a critical perspective is only one step in the long journey of translating ideology to action. Therefore we close this chapter with reflections and insights on tangible strategies higher education organization scholars may adopt in the interest of advancing a critical qualitative research agenda.

In our co-authored monograph, *Qualitative Inquiry for Equity in Higher Education* (Pasque et al., 2012), we map out four different types of interventions focused on interrogating and overturning the methodological conservatism (Denzin & Giardina, 2006; Lincoln & Cannella, 2004a, 2004b), which seeks to undermine and silence critical qualitative scholarship within the higher education research community. Specifically, we describe interventions at the levels of individual reflexivity,

professional socialization, institutions and organizations (e.g., serving as institutional review board members and journal reviewers), and community engagement. While the call to action issued in *Qualitative Inquiry for Equity in Higher Education* did not specifically focus on studies of higher education organization, many of the interventions we discuss in the monograph hold relevance for scholars seeking to reimagine the nature and practice of higher education organization research. Below we revisit some of our original ideas regarding strategies for individually and collectively advancing critical qualitative scholarship. We have sharpened our focus on how interventions at the levels of professional socialization, curricular reform, and community engagement might expand the scope and influence of critical qualitative research on higher education organizations.

Professional Socialization

Our focus on the professional socialization of emerging critical scholars is not intended to dismiss the possibility or necessity of established higher education researchers engaging in critical qualitative scholarship on higher education organizations. Indeed, if this body of knowledge is to expand and play a meaningful role in the adoption of more equitable and just administrative practices and governance processes, both emerging and senior higher education scholars will need to participate in the critical organization research movement. The decision to foreground interventions at the level of professional socialization reflects our belief that changes in the mentoring and training of the next generation of higher education researchers necessarily engages scholars situated across the professional continuum (first year graduate students to full professor). These efforts will pay the greatest dividends with respect to expanding the cadre of higher education scholars committed and prepared to engage in critical advocacy work on higher education organization. In this section, we specifically focus on interventions related to the advising relationship and curricular reform.

The advising and mentoring relationship is an important socialization experience for all aspiring higher education researchers, but particularly for those interested in pursuing lines of inquiry that challenge dominant theoretical and methodological regimes of truth (Bloch, 2004; Denzin & Giardina, 2006; Lincoln & Cannella, 2004a). Graduate students seeking support in the development of their unique scholarly identities should be encouraged to explore multiple research paradigms and engaged in reflective conversations that help them establish connections between their identities, epistemologies, ontologies, and inquiry projects (e.g., class projects, dissertations). Rather than foreclosing critical methodological possibilities based conservative and market-driven notions of legitimate inquiry, advisors should encourage students to pursue novel approaches to collecting, analyzing and representing data in the interest of expanding the borders of the higher education scholarly landscape.

To illustrate the promise of mentoring the next generation of critical researchers, we share our story of working with two research assistants, Huong Nguyen and Ashley Smith, recruited through the Undergraduate Research Opportunity Program at the University of Michigan (UM), to identify and organize the research synthesized in this chapter. In introducing future researchers to the research process, the students learned how to conduct a thorough literature review (Hart, 1998), organize large amounts of literature, learn APA formatting and create a draft of the reference section, make sense of what they were reading by writing research memos on a regular basis, create and present a research poster at UM, and co-present their critical narratives about the research experience at an international conference. Based on her involvement in this research study, Huong has written about and verbally discussed the ways in which she has reconsidered her own Asian American and religious identities. Smith read some research that "made me mad" regarding contemporary sexist perspectives by male students – perspectives that she once thought were eliminated. This has inspired her to write more on the topic of gender inequity and take a Women's Studies course. Both have decided to continue with research in the next academic year and are interested in graduate school. We have no doubt that the examples of student transformation and gravitation to research in higher education is shared by faculty across the country. The importance of developing advising and mentoring relationships cannot be overstated. Such relationships support and advocate for emerging critical scholarships, asking challenging questions, encouraging authenticity, advocating for innovation, and fostering transformation in organizational research. For powerful examples of advising relationships that support graduate student critical inquiry projects, please see Nicolazzo (2014), Hughes and Vagle (2014) and Pasque (2014).

Curricular Reform

As elaborated upon in *Qualitative Inquiry for Equity in Higher Education* (Pasque et al., 2012), curricular reform is another important vehicle for advancing critical qualitative within the higher education research community. Given the methodological hegemony that currently characterizes higher education research; we focus our attention in the qualitative inquiry monograph on tangible strategies for reforming research methodology curriculum and pedagogy within educational leadership and higher education doctoral programs. Specifically, we call upon faculty to reflect on the ways their social identities and methodological assumptions shape curricular and pedagogical practices that frame (and often narrowly define) methodological possibilities within the field of higher education. The adoption of methodological textbooks and construction of syllabi and assignments which privilege post-positivist and constructivist approaches to qualitative educational inquiry constrain the methodological imaginations of doctoral students and limit their ability to cultivate and practice alternative forms of data collection, analysis,

and knowledge dissemination (e.g., community activism, innovative publication formats) that reflect the empowering and transformative aims of scholarship situated in the eighth moment of qualitative inquiry (Carducci et al. 2013).

As Pasque (2014) argues, it is not a matter of eliminating post-positivist and constructivist perspectives from educational research curricula (indeed, we value methodological pluralism and encourage emerging scholars to become literate in the diverse methodological schools of thought within the higher education research community). Rather, the advancement of critical qualitative methodological principles and practices within the field necessitates that critical approaches to research design are moved from the margins to the center of educational inquiry curricula. No longer relegated to a special "critical" week tacked on at the end of introductory research design seminars or limited to coverage in advanced methodology seminars that enroll students who have already identified their critical methodological sensibilities, critical methodologies must be fully integrated into educational inquiry curricula and presented as legitimate forms of inquiry that are well-positioned to produce and disseminate knowledge that advances educational equity and social justice (Cannella & Lincoln, 2009; Carducci et al., 2013; Pasque et al., 2012).

While reform of educational inquiry curricula is an essential step in expanding critical qualitative work on higher education organization (emerging scholars committed to engaging in critical scholarship must be familiar with and competent in critical methodological practices), addressing the methodological dimensions of professional socialization will not be sufficient for expanding critical scholarship on higher education organization. Curricular reforms must also be initiated within core seminars on organizational theory, higher education administration, governance, and leadership. Similar to their colleagues responsible for socializing emerging scholars to the norms and practices of educational inquiry, we also call upon faculty who design and facilitate graduate coursework pertaining to the organization and administration of higher education to carefully consider the ways their social and professional identities as well as their scholarly points of view (e.g., epistemology, ontology, methodology, theoretical orientations) construct graduate education environments which perpetuate and/or disrupt traditional functional and constructivist narratives of higher education organization.

As with critical perspectives in inquiry coursework, we advocate for higher education faculty to move critical scholarship from the margins to the center of graduate curricula, fully integrating critical scholarship into the design of organization and administration seminars (e.g., course topics, reading lists, assignments). While there is certainly value in introducing emerging scholars to foundational works on higher education organizational theory and behavior (e.g., Birnbaum's, 1988, *How Colleges Work*; Clark's, 1972, analysis of higher education organizational sagas), faculty need to expand required reading lists to include scholarship that conceptualizes and examines higher education organization from critical perspectives (e.g., queer, critical race, feminist, performativity, Indigenous). Ideally these critical works are presented to emerging scholars as legitimate bodies of knowledge upon which to draw insights for practice and inspiration for future research.

A great example of thoughtfully integrating classic and contemporary organizational theory is Manning's (2013) *Organizational Theory in Higher Education* cited earlier in this chapter, which provides readers with a comprehensive overview of traditional higher education organizational frames (e.g., organized anarchy, collegial, political, cultural, bureaucracy) but extends the boundaries of the scholarly landscape by including in-depth examinations of new science, feminist, and spiritual organizational theories. The inclusion of these critical and postmodern organizational perspectives in one comprehensive text signals to scholars, both emerging and seasoned, that the higher education organizational theory canon is expanding and scholarship anchored in critical theories and methodologies has a place within the field.

Moving beyond the reorganization and expansion of organizational seminar reading lists, another tangible strategy for reimagining the professional socialization of higher education organization scholars is to rethink pedagogical strategies and assignments typically utilized in higher education organization and governance seminars. Perhaps the most common pedagogical strategy for challenging students to demonstrate their ability to apply organizational theory to practice is case study analysis. Case pedagogy can take many forms: individual or team work, written reports or oral presentation, analysis of fictional/semi-fictional cases or personal organizational dilemmas. Indeed, the popularity of case pedagogy within higher education graduate education is reflected in the growing number of case study texts that include or focus exclusively on organizational dilemmas (Flowers, 2004; Higgerson & Rehwaldt, 1993; Stage & Hubbard, 2012; Wall & BaileyShea, 2011). Manning's (2013) comprehensive overview of higher education organizational theory also seemingly advocates for case study pedagogy as an effective means of teaching and learning about higher education organization as she couples each focal theoretical framework with a corresponding case study.

Case study is indeed a valuable means of helping aspiring higher education scholars and administrators sharpen their ability to link theory and practice as they attempt to make sense of and resolve hypothetical or personal organizational dilemmas. Additionally, to the extent that faculty challenge graduate students to analyze case studies through the lenses of critical theory, case pedagogy is a productive strategy for advancing critical organizational scholarship within higher education. Where case pedagogy often falls short, however, in meeting our aims for reimagining professional socialization in support of cultivating a new cadre of critical organizational scholars is the provision of opportunities for emerging critical scholars to cultivate and practice the skills of political and community engagement, a fundamental dimension critical qualitative scholarship which seeks to translate knowledge into action and, more importantly, social change. Accordingly, the final strategy we discuss for advancing and enacting a critical qualitative higher education organization research agenda is to develop professional socialization and curricular activities that require students to practice translating scholarship to multiple audiences within and beyond the academy.

Community with Diverse Audiences

As noted in the beginning of this chapter, to realize the transformative aims of critical advocacy inquiry, researchers must "engage the stakeholders on an ongoing basis with findings and implications of a critical research study . . . to ensure that people's understandings are indeed changed and that such new comprehension leads to action that is tactical and strategic" (Shields, 2012, p. 9). While it is certainly possible that research stakeholders are located within the critical scholar's immediate organizational context (e.g., the researcher's own department), it is more likely that the critical advocacy imperative of sustained stakeholder engagement will be fulfilled beyond the borders of the researcher's academic home or a scholarly conference. Thus, in order to effectively advocate one's critical perspective and inspire transformative action, critical scholars must cultivate the skills, knowledge and commitment associated with communicating their work to multiple audiences (e.g., policymakers, the public, organizational leaders, the media) (Cannella & Lincoln, 2012; Fine, Weis, Weseen, & Wong, 2000). While graduate programs may do a sufficient job of preparing students to present research in an academic forum, we have seen few examples of professional socialization experiences focused on advocacy-oriented communication strategies such as writing press releases or letters to the editor, participating in radio and tv interviews, providing legislative testimony, designing community newsletters, etc. In order engage in the advocacy work of critical inquiry, critical scholars must become adept at advocating for a particular position. Emerging and senior scholars interested in transforming higher education organizations would be well served to seek out professional learning opportunities that focus on communicating with diverse audiences (e.g., journalism seminars, public speaking workshops, one-on-one consultations with the campus external relations office). If critical scholars are not able to effectively advocate for their political position, there is little chance their work will inspire action.

Komives (2000) states that, "[educators'] systematic processes too often stop at the acquisition of knowledge. The much harder and more meaningful process is to facilitate understanding and wisdom, leading to the intentional self-authorship inherent in informed thought and action" (p. 31). Indeed, critical management scholars have been criticized for a preoccupation with drafting lofty conceptual essays that are all too rarely translated into empirical studies and "failing to bring Foucault 'fully' into the field" (Alvesson & Deetz, 2006, p. 274). Organizational researchers in higher education must not stop at thought alone, but have the opportunity to take this knowledge to a place of action through critical qualitative inquiry. There are possibilities for transformation toward educational equity and social justice through the theories, paradigms, methodologies, questions and topics we center. Further, there are possibilities in activist-scholarship for socializing new researchers, altering the curriculum, and engaging in communities and our own institutions. Critical research begins with questions of inequity and disparity and, we argue, holds promise for promoting institutional policies, programs and practices that can lead to economic and human justice within and beyond higher education organizations.

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Chapter 8
Quantile Regression: Analyzing Changes in Distributions Instead of Means

Stephen R. Porter

Introduction

For the past several decades, ordinary least squares (OLS) has been the workhorse of quantitative postsecondary research. OLS has several features that make it especially appealing to applied researchers, such as its ability to control for multiple independent variables, its ease of estimation and interpretation, and its robustness to violations of underlying assumptions. Open any education journal featuring empirical articles on postsecondary topics, and you will find numerous papers using OLS, or one of its variants, such as logistic regression, instrumental variables, hierarchical linear models, or fixed effects models.

As applied researchers, we rarely think deeply about what a regression coefficient tells us; we tend to assume that it just tells us the effect of x on y, ceteris paribus. From a technical perspective, however, this is not exactly correct. A regression coefficient tells us the effect of x on the *mean* of y controlling for other x's, not just "y". This may seem like a subtle distinction, but it is not, as a simple example demonstrates.

Access and completion are two major areas of focus in postsecondary research, and interventions that aim to prepare students for college success, such as summer bridge programs and developmental education classes, are widely used across the country. Suppose we are studying a program to increase incoming students' math skills, a common deficit area for new students. We are interested in the effect of the program on math performance; in other words, does participation in the program increase math proficiency? One approach to assessing the effect of the program

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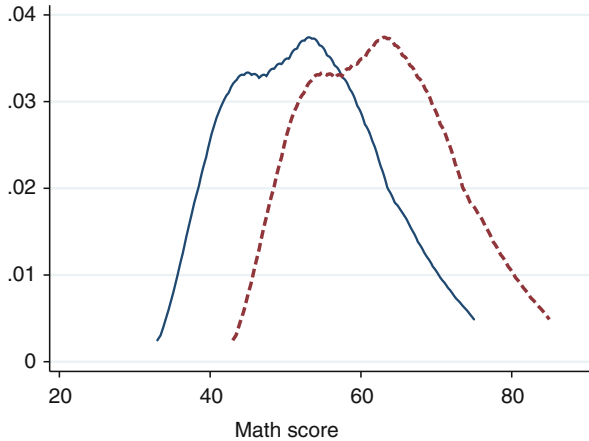
Fig. 8.1 Hypothetical math score distributions with and without remediation

would be estimating a regression model with performance on a math exam as the dependent variable, a dummy variable indicating program participation as the main independent variable of interest, and a set of control variables (assume that these control variables are such that we are not worried about omitted variable bias).

A positive and statistically significant coefficient on the dummy variable would tell us that performance was larger for students participating in the program. Figure 8.1 illustrates this possibility. Two hypothetical distributions are shown, for participants (dashed line) and non-participants (solid line). As can be seen, participation in the program shifts test scores for participating students to the right; that is, remediation appears to increase math proficiency. For the sake of this example, assume the increase is 10 points on a 100-point scale. Based on our regression results, we would conclude that the program was successful in increasing math proficiency. Technically, however, we can only conclude that program participation had an effect on the mean of the test score distribution; we can say nothing about other points of the distribution.

Why is this potentially problematic? We can consider three alternative scenarios, depending upon how the remediation program affects different individuals. First, we can imagine a scenario in which the distribution for the treated shifts such that there is still a 10-point increase at the mean, but the program has the strongest effect for students at the lower end of the distribution, increasing their test scores by 20 points. This is consistent with the idea that math remediation will have the strongest effect for students who have deficits and will likely struggle with college-level math, and little effect for those highly proficient. Second, the opposite could occur, with no increase at the low end, a 10-point increase at the mean, and a 20-point increase at the high end of the distribution. Here, math remediation helps those students already comfortable and successful at math, with little effect at the low end of the distribution. This is consistent with the idea that remediation helps students who are already proficient at math, but does little for non-proficient students. Third, aspects

of both trends could occur: the intervention could help the average student (with a 10-point increase in scores at the mean), but with no changes in proficiency at the high and low ends of the distribution.

From a policy perspective, distinguishing between the four possibilities is important. Does offering additional math instruction raise all boats, help those most in need, help those who need it least, or just help the average student? Most postsecondary researchers and administrators would agree that an intervention that largely helps students already proficient at math is not a wise use of funds. Yet using OLS to study math outcomes would not tell us whether this was happening, only whether students at the mean were experiencing an increase in proficiency. Indeed, in using OLS to analyze the four scenarios, we would reach the exact same conclusion, even though the math intervention is having very different effects on students at other parts of the distribution in each scenario.

Quantile regression is one approach to analyzing changes in distributions that is becoming increasingly popular with applied researchers. As with OLS, quantile regression estimates the effect of an independent variable on an outcome, while allowing for covariates as controls. Unlike OLS, quantile regression provides estimates of these effects at different points of the distribution of y, such as the 5th percentile, 25th percentile, 95th percentile, etc. Quantile regression thus allows the researcher to understand how an independent variable affects the entire distribution of an outcome, rather than just the average. In addition, these models are easily estimated by most statistical packages and can be widely used by postsecondary researchers.

This chapter reviews the two main types of quantile regression models used by researchers, the conditional and unconditional quantile regression models. The latter is more widely used by researchers, because it focuses on changes to the unconditional distribution of the dependent variable. After reviewing estimation, interpretation, and sensitivity analyses for unconditional quantile regression models, I discuss and demonstrate the use of instrumental variables within the quantile regression context.

Why Use Quantile Regression?

Due to the tremendous increase in computing power in recent years, a wide variety of advanced statistical techniques are now available at the touch of a drop-down screen. Researchers can feel a bit overwhelmed at the dizzying array of choices for analyzing their data, and skeptical of new approaches, which often tend to be seen as faddish at best. Quantile regression should not be viewed as a fad, but rather as a more informative approach to analyzing educational data than more familiar techniques such as OLS. Indeed, the technique dates to the late 1970s, and has been used in the field of economics for many years. Given recent advances in estimation and interpretation of quantile regression models, including the ability to deal with endogenous regressors, the technique will soon be commonplace. Quantile regression is generally seen as having two advantages over OLS.

Table 8.1 Sensitivity of OLS estimates to outliers on Y

	Sample unchanged		One male score changed to 1,000	
	OLS	CQR	OLS	CQR
Female	4.870	5.000	−5.383	5.000
	(1.304)***	(2.080)**	(9.622)	(2.080)**
Intercept	50.121	52.000	60.374	52.000
	(.963)***	(1.535)***	(7.103)***	(1.535)***

Note: Cell entries are coefficients, with standard errors in parentheses
** $p < 0.05$; *** $p < 0.01$

First, an advantage of quantile regression is its insensitivity to outliers on y (Davino, Furno, & Vistocco, 2014; Fröhlich & Melly, 2010). Recalling the formulas for the mean and median, this makes intuitive sense. If we analyzed a sample of incomes and added a single billionaire to the sample, the mean would change quite a bit, because the billionaire's income is used explicitly in the calculation of the mean. Repeating the process but using the median instead, the addition of the billionaire would simply shift the value of the median from the income of the person at the 50th percentile to the next highest income in the distribution, resulting in a small change in the median. Or, if the next highest income were identical to the median, result in no change at all.

To illustrate, Table 8.1 shows OLS and conditional quantile regression estimates for a bivariate model using gender to predict performance on a writing exam, based on a sample dataset (n = 200) from the High School and Beyond survey.[1] The first two columns use the sample dataset with no changes to the observations. Both OLS and conditional quantile regression yield similar results, with females scoring about five points higher than males (note that this similarity is not surprising, given that the mean and median of Y are 53 and 54, respectively).

The highest writing scores in the sample are 67 points, and there are two males in the dataset with these scores. The last two columns of the table demonstrate how the model coefficients change when the writing score for one of these males is changed from 67 points to 1,000 points. As we can see, the OLS estimates change drastically. The predicted writing score for males increases from 50 to 60, and the gender difference switches direction, with females now scoring five points lower than males, as opposed to higher. The conditional quantile regression estimates, however, remain unchanged. The one male whose test score increased was already one of the two highest-scoring males in the dataset, so drastically increasing his score had no effect on the estimates of the effect of gender on the median of test scores. As with estimation of a simple median, increasing scores for observations above the median leaves the median (conditional quantile regression) estimates unchanged.

A second advantage of quantile regression, however, is its ability to allow us to see how the entire distribution of y changes when x changes, rather than just seeing

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[1] This example is based on the discussion at http://www.ats.ucla.edu/stat/stata/faq/quantreg.htm

how the mean changes. Some examples from the literature illustrate its advantages over OLS: estimating the effect of class size on student achievement, and estimating the effect of spending on college graduation rates.

Providing additional funding to school districts is one approach to increasing K-12 student achievement, but how these additional funds should be allocated is not at all clear. For example, a district could increase salaries to attract more experienced teachers, or it could maintain current salary levels and use the funds to hire more teachers in order to reduce average class size. Project STAR (the Tennessee Student/Teacher Achievement Ratio experiment) randomly assigned students in public elementary schools to small classrooms (13–17 students), regular classrooms (22–25 students), and regular classrooms with the addition of a full-time aide. Mueller (2013) uses data from the experiment to analyze the effect of class size on math and reading test scores. Conditioning on teacher experience, the OLS estimates indicate that assignment to a small classroom increases math and reading test scores by about .15 standard deviations (see his Table 2, p. 48); these are the effects of small class size at the mean of the test score distributions. The quantile regression estimates, however, tell a different story. Small class size increases test scores about .10 standard deviations at the lowest decile of the math and reading distributions, with the effects almost doubling in size at higher points along the distributions. Small class size, in other words, increases student achievement for all students, but it also increases inequality, with smaller gains at the low ends of the math and reading distributions.

Funding issues also dominate much of the discussion in higher education, especially in terms of recent proposals to develop a national rating system for colleges and universities based on how well they graduate their students. While previous research indicates that expenditures per student are positively associated with higher graduation rates, less is known about the effects of specific categories of expenditures, such as spending on instruction. Webber and Ehrenberg (2010) use IPEDS Finance and Completions data to estimate and compare the effect of instructional, academic support, research, and student services expenditures on institutional 6-year graduation rates. OLS estimates suggest that increasing student services expenditures by $100 per student would increase graduation rates by .2 percentage points (e.g., from 80 to 80.2 %), while the same amount for instructional expenditures would increase graduation rates by only .06 percentage points (their Table 3, p. 953). The quantile regression estimates reveal that the effect of expenditures varies across the distribution of graduation rates (their Table 4, p. 954). The effect of a $100 increase in student services expenditures, for example, is largest at the bottom half of the graduation rate distribution, about .6 percentage points, and declines rapidly to zero from the 50th percentile to the 90th percentile. The effect of instructional expenditures is largest between the 20th and 80th percentiles, with no effect at the top and bottom of the distribution. These results suggest that institutions with low graduation rates would benefit most from increasing expenditures on student services, while increasing expenditures in both areas would achieve little for institutions with very high graduation rates.

As these examples demonstrate, understanding how an independent variable affects an outcome can differ depending on whether the researcher uses OLS or quantile regression. The former only allows us to understand the effect of an independent variable at the mean of an outcome, while the latter allows to observe how the effect varies at different quantiles of the distribution. From an applied researcher's perspective, it is precisely these varying effects in which we are most interested, especially in terms of implementing good policies. Does a treatment affect all students equally, or only some students along the distribution of interest? If the treatment shows positive effects, does it also increase inequality by having the weakest effects for those students at one end of the distribution? Quantile regression can help us begin to answer these important and policy-relevant questions, while OLS cannot.

Conditional Quantile Regression

Conditional quantile regression has been used by researchers for several decades. While the interpretation of the results is somewhat similar to OLS, the estimation approach is not. As Koenker and Hallock (2001, p. 145) note,

> Quantiles seem inseparably linked to the operations of ordering and sorting the sample observations that are usually used to define them. So it comes as a mild surprise to observe that we can define the quantiles through a simple alternative expedient as an optimization problem.

The optimization approach to finding a quantile q (such as the median) can be achieved by using the following equation, and finding the value of β that yields the minimum value for a group of observations y:

$$\sum_{i:y_i \geq \beta}^{N} q|y_i - \beta| + \sum_{i:y_i < \beta}^{N} (1 - q)|y_i - \beta|. \tag{8.1}$$

Suppose we have three observations in a sample with the values of 1, 2 and 3, and wish to know the median. The median is obviously 2 by inspection, and we can use Eq. 8.1 instead to estimate the median via optimization. Beginning with the first observation as a possible answer for the median, we use only the first part of Eq. 8.1, as there are no values of y less than 1 in this sample,

$$\sum_{i:y_i \geq 1}^{N} .5|y_i - 1| + \sum_{i:y_i < 1}^{N} (1 - .5)|y_i - 1|$$

$$\sum_{i:y_i \geq 1}^{N} .5|y_i - 1|$$

$$.5|1 - 1| + .5|2 - 1| + .5|3 - 1| = 1.5$$

while for the second observation,

$$\sum_{i:y_i \geq 2}^{N} .5|y_i - 2| + \sum_{i:y_i < 2}^{N} (1 - .5)|y_i - 2|$$

$$.5|2 - 2| + .5|3 - 2| + .5|1 - 2| = 1$$

and for the third observation,

$$\sum_{i:y_i \geq 3}^{N} .5|y_i - 3| + \sum_{i:y_i < 3}^{N} (1 - .5)|y_i - 3|$$

$$.5|3 - 3| + .5|1 - 3| + .5|2 - 3| = 1.5.$$

Of the three observations, the value of 2 minimizes Eq. 8.1, and we can conclude that it is the value of the 50th quantile, or median.

While this may seem like an overly complicated solution to the relatively simple problem of finding the median of y, this approach can be used to find the quantile regression estimator (Cameron & Trivedi, 2005), in that minimizing

$$\sum_{i:y_i \geq x_i'\beta}^{N} q|y_i - x_i'\beta| + \sum_{i:y_i < x_i'\beta}^{N} (1 - q)|y_i - x_i'\beta| \tag{8.2}$$

yields the quantile regression coefficient β, where x_i' and β indicate a matrix of independent variables and a vector of quantile regression coefficients. Note that the expressions within the absolute value symbols are deviations, so that this approach can also be viewed as a least absolute deviations estimator (as opposed to OLS, which uses squares instead of absolute deviations).

An alternative version that is often cited in articles is

$$\arg\min \sum_{i=1}^{N} \rho_\tau (y_i - x_i\beta) \tag{8.3}$$

where τ is a particular quantile, ρ_τ is an absolute value function $\rho_\tau(u) = u \cdot (\tau - \mathbf{1}(u < 0))$ and $\mathbf{1}(u < 0)$ is an indicator function taking a value of 1 if $u < 0$, 0 otherwise. This simply means that Eq. 8.3 expands into two parts

$$\arg\min \sum \tau \cdot (y_i - x_i\beta) \text{ when } y_i - x_i\beta > 0 \text{ and}$$

$$\arg\min \sum (\tau - 1) \cdot (y_i - x_i\beta) \text{ when } y_i - x_i\beta < 0$$

based on the sign of $y_i - x_i\beta$.

More specifically, the approach outlined above is known as the *conditional quantile regression* approach to studying changes in distributions. In terms of estimation, conditional quantile regression takes a different approach than OLS. If we view the OLS regression model as a mathematical function, we can find the value of β that minimizes the function by using calculus to find the derivative. Unlike OLS, the conditional quantile regression function cannot be differentiated and instead is estimated via linear programming methods (Cameron & Trivedi, 2005). Linear programming is "a subset of mathematical programming facing the efficient allocation of limited resources to known activities with the objective of meeting a desired goal, such as minimizing cost or maximizing profit" (Davino et al., 2014, p. 23). This approach, and related optimization techniques, are widely used for many practical applications, such as determining the optimal driving route between two different locations on a map.

Linear programming typically consists of a series of equations that can be solved to find the solution set. The most common approach is the simplex method, which uses an iterative process to find a solution. Similar to maximum likelihood estimation, multiple solutions are tested until the software fails to find a better solution. This is why the statistical output for conditional quantile regression resembles the output for logistic regression, listing the iterations that have been used to reach a solution. Conditional quantile regression, however, focuses on minimizing the absolute deviations (as seen in Eq. 8.2), not maximizing the likelihood.

Conditional quantile regression models can be estimated with the following statistical packages:

- Stata uses the qreg command, but the estimated standard errors assume homoskedasticity. The vce(robust) option should be used to ensure the correct standard errors.
- SAS uses the quantreg procedure (Chen, 2005).
- R has the package quantreg (http://cran.r-project.org/web/packages/quantreg/index.html); SPSS version 17 allows SPSS users to invoke R packages within SPSS.

Interpretation

One of the most important distinctions to understand when estimating quantile regression models is the difference in interpretation between conditional versus unconditional regression models (described below). For conditional quantile regression, interpretation of the coefficients is in relation to the quantiles of the distributions defined by the covariates (the conditional distribution), rather than the unconditional distribution of y.

Continuing with the developmental math example, suppose we estimated a conditional quantile regression model at the median with math proficiency as the dependent variable, a developmental math dummy variable, and a dummy variable

for gender as regressors. The coefficient for the developmental math dummy variable is not the effect of developmental math at the median of the test score distribution. Instead, it can be thought of as the average of the effect at the median of the distribution for males and at the median of the distribution for females. Why is this problematic? Suppose that females score higher on the test than males, such that the median female score is 85 whereas the median male score is 70. The conditional quantile regression coefficients are effects at these medians, which differ quite a bit. So we would interpret the effect of the program for one group of students scoring at 85 (females), as well as for another scoring at 70 (males). Typically, however, we would like to know the effect at the median of the unconditional distribution; that is, what is the effect for students who perform at the median of the overall score distribution, not for students who score at the median of groups defined by whatever covariates we include in the model (in this case, developmental math and gender).

This conditional definition of effect can be difficult to interpret in many applied settings. The previous example had one treatment variable and only one control variable; with additional control variables, interpretation becomes even more complex. More importantly, this interpretation is typically not what most educational researchers seek. Just as OLS yields the effect of a variable at the mean of y, we also wish to know the effect at other quantiles of y, not quantiles of y defined within subgroups. The main issue here is that inclusion of control variables in a conditional regression model is necessary to deal with selection bias, just as in the case of OLS, yet inclusion of these covariates changes the interpretation of the quantiles. Moreover, as additional covariates are included, the interpretation of the quantiles changes, making comparisons across different model specifications problematic.

The growing consensus in the literature is that many researchers have inadvertently misused conditional quantile regression for many years, by interpreting the results as if they came from an unconditional quantile regression model. In other words, they have interpreted their coefficients as if they were the effect on the quantile of y, rather than quantiles of y defined within groups based on their set of covariates.

Two very recent examples from the literature demonstrate how conditional quantile regression has been misapplied. Maclean, Webber, and Marti (2014) estimate a state-level panel model to understand the effect of state cigarette taxes on cigarette consumption. Cigarette taxes have been an important public health tool used to reduce smoking, but the effects of tax increases in the literature are not clear, especially as previous research has tended to focus on the effect at the mean.

Some previous researchers in this area have used conditional quantile regression to study cigarette taxes, and Maclean et al. (2014) illustrate the drawbacks of this method with a thought experiment. Suppose the researcher estimated a conditional quantile regression model using only a set of dummy variables for each state. This model

> ...effectively yields an average of the treatment effects for observations at the, say, 10th quantile of the 51 state-specific smoking distributions, some of which may deviate substantially from the 10th quantile in the national distribution of smokers. For example, the 10th quantile smoker in Kentucky rises to the 20th quantile in the national distribution, while

the 10th quantile California smoker falls to the 6th quantile [of the national distribution]. Thus, [conditional quantile regression] at the 10th quantile produces an estimate of cigarette tax increases on smokers who smoke 30 cigarettes per month in California, 150 cigarettes per month in Kentucky, and many values in between for other states.

For most applications, we would not want to know the effect of taxes on smokers at differing absolute levels of smoking (e.g., 30 cigarettes per month, 150 cigarettes per month, etc.), even though these levels of smoking represent the 10th percentile within each state. Instead, we would want to know the effect at the 10th percentile of the national distribution, 60 cigarettes per month.

Budig and Hodges (2010) use conditional quantile regression to analyze wages for females in an effort to determine the "motherhood penalty" – the loss in compensation that women experience if they have children. They find that mothers at the low end of the wage distribution experience larger penalties than higher income females. In a critique, Killewald and Bearak (2014) point out that their interpretation of the penalty from their conditional quantile regression model is actually for the unconditional distribution of wages. Their thought experiment is a simple conditional quantile regression model with motherhood and level of education as covariates. The estimates of the motherhood penalty from this model are not the estimates for workers at different quantiles of wages. Instead, they are the estimates of the motherhood penalty at different quantiles of wages within each education group. The problem lies in the fact that a specific quantile wage for college-educated women will be much larger than the same quantile wage for high-school dropouts. In other words, the 50th quantile wage for college-educated women will be much higher than the 50th quantile wage for high-school dropouts.

At this point, it may seem somewhat confusing that the interpretation changes when covariates are added; doesn't the same thing occur with OLS? When interpreting an OLS coefficient, our overall interpretation may change slightly as we add covariates (would we say, for example, "controlling for independent variables A, B and C" instead of "controlling for independent variables A and B"), but regardless of the number of control variables, the interpretation of an OLS coefficient is always the effect of x on the mean of y. With conditional quantile regression, we lose this simple and clear interpretation of the regression coefficient.

From the perspective of many researchers, conditional quantile regression may not seem very useful, because as control variables are added to the equation to deal with selection, the quantiles and thus the interpretation of the coefficients change. There are, however, other uses of these models besides the estimation of treatment effects via covariate controls. One of the most common in K-12 is the use of conditional quantile regression to track student growth in standardized test scores.

Standardized tests are ubiquitous in K-12, and one approach to accountability is providing parents with their child's test score. Depending on the difficulty of the test, the raw score may not be useful. Suppose a student scores an 80 on a 100-point test. If many other students scored above 80, then this student did not perform very well. Conversely, if many other students scored below 80, then the student

performed well. The interpretation of issue of absolute versus relative performance naturally leads to the use of percentiles in reporting student scores, so that each student is scored relative to other students who took the test.

At the state-level, the educational accountability movement has pushed for measurement and reporting of student test performance and growth over time. One approach uses past and present student test results and conditional quantile regression to estimate student growth scores, referred to as "student growth percentiles"; a dozen states have adopted it for reporting purposes (Castellano & Ho, 2013a). Suppose we estimate a model using conditional quantile regression, in which a student's test score in a grade is regressed on his test score from the previous grade. We can think of the resulting predicted quantile for the student as where they scored on the current grade's test, not in relation to all test-takers across the state, but in relation to all test takers who scored the same as the student in the previous grade. Higher quantiles are then interpreted that a student is scoring higher than his or her academic peers, where academic peers are defined by those other students achieving the same test score as the student. Typically these models use several years of prior testing data, so the comparison group is students with similar score histories (see Castellano and Ho (2013b) for an accessible discussion of this and other methods for calculating student growth).

Note that because of the use of conditional quantiles, scoring higher than a majority of your peers using these models does not mean that student growth has actually occurred. Suppose that for some reason students tended to do poorly this year in relation to last year (e.g., experienced learning loss). If a particular student's loss is much less relative to his peers, then his student growth percentile would be high (implying growth), even though an analysis of absolute test scores would reveal a loss in learning.

As this review makes clear, estimation and correct interpretation of conditional quantiles can be a tricky business. Thus, many researchers have turned to unconditional quantile regression models.

Unconditional Quantile Regression Assuming Exogeneity

Given that the interpretation of conditional quantile regression coefficients depends on the group of covariates used in the model, and that most researchers are instead interested in the effects on the unconditional distribution of y, *unconditional quantile regression* (Firpo, Fortin, & Lemieux, 2009) is becoming the popular choice among applied researchers. Unconditional quantile regression is based on a transformation of the dependent variable into the recentered influence function (RIF)

$$RIF(y; q_t) = q_\tau + \frac{\tau - \mathbf{1}\{y \le q_\tau\}}{f_Y(q_\tau)}, \tag{8.4}$$

where τ indicates a specific quantile (say the 40th, or .40), q_τ is the value of the dependent variable at that specific quantile, $\mathbf{1}\{y \leq q_\tau\}$ is a function that equals 1 when an observation's value of y is less than or equal to the value of the dependent variable at quantile τ, 0 otherwise, and $f_Y(q_\tau)$ is the density of y at quantile τ. All of these quantities are easily calculated except for the density, which is estimated from the sample using a kernel density estimator.

Table 8.2 demonstrates how the RIF is calculated for three writing test scores from the High School and Beyond dataset. Three scores are shown, one at the 25th percentile (45.5), one at the 50th percentile (54), and one at the 75th percentile (60). We wish to estimate an unconditional quantile regression for the effect of an independent variable on the median of y; τ is set to .50, and we choose the writing score at the median (54) as q_τ. Taking the test score for each student, we check to see whether it is less than or equal to the median score of 54. The first two observations meet this criterion, so $\mathbf{1}\{y \leq q_\tau\}$ is set to 1 for these observations. The third observation scored 60, which is higher than the median of 54, so $\mathbf{1}\{y \leq q_\tau\}$ is set to 0 for this student.

Next, we estimate the density of y when $Y = 54$; the number in the table is estimated using Stata's kdensity command, with a Gaussian kernel and an arbitrary bandwidth of 2. The histogram for the writing test score variable is displayed in Fig. 8.2, along with the estimated density. The vertical line is drawn where the writing test score equals 54, and the density (listed on the y-axis) is

Table 8.2 Calculating the recentered influence function

Y	Quantile	τ	q_τ	$\mathbf{1}\{y \leq q_\tau\}$	$f_Y(q_\tau)$	RIF
45.5	.25	.50	54	1	0.03534932	39.8555
54	.50	.50	54	1	0.03534932	39.8555
60	.75	.50	54	0	0.03534932	68.1445
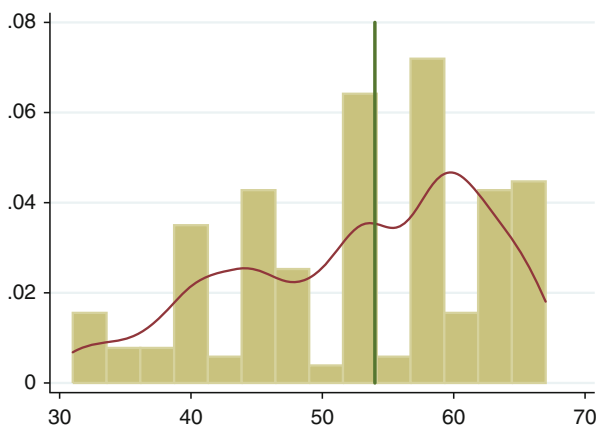
Fig. 8.2 Distribution of writing test scores

equal to .035. Comparing the estimated density to the histogram illustrates one potential disadvantage of the RIF function. We do not know the density of y in the population, so we must rely on estimating it using our sample. But to estimate the density using a kernel function, we must make some distributional and optimal bandwidth assumptions that may or may not be correct. These assumptions, in turn, will determine the quantile regression results.

Using these four quantities, the RIF can be calculated for each student. The formula results in only two values for the dependent variable, depending on whether an observation falls above or below the specified quantile. Once the RIF has been calculated for each observation, it is used as the dependent variable in an OLS model, regressing the RIF on a set of independent variables.

Interpretation

Close examination of Eq. 8.4 provides an intuitive understanding as to why the RIF produces the effect of x on the unconditional distribution of Y, in contrast to conditional quantile regression. Note that in Eq. 8.4, the dependent variable is transformed without reference to any covariates (there are no x's in the equation), so changing the mix of covariates in the model does not change the interpretation of β, other than the fact that the set of control variables has changed. Thus, the value of unconditional quantile regression estimates is that they are interpreted much like OLS estimates; the interpretation is not within groups, as with conditional quantile regression.

Use of unconditional quantile regression can sometimes yield very different conclusions compared to conditional quantile regression. In their seminal paper outlining their unconditional quantile regression estimator, Firpo et al. (2009) analyze the effect of unionization on wages. Misinterpreting the conditional quantile regression results (i.e., ignoring that these are within-group estimates), one would conclude that unionization has a declining linear effect on wages across the distribution, in that unionization greatly raises wages at the low end of the wage distribution, with this effect lessening along the distribution to be lowest at the high end of the wage distribution. Unionization, it would appear, has the biggest impact on those with low wages. Unconditional quantile regression estimates, however, tell a different story, with unionization increasing wages in the middle part of the wage distribution, but actually decreasing wages at the high end of the distribution.

Similarly, the reanalysis of the motherhood penalty using unconditional quantile regression indicates a different effect than the conditional estimates. With the conditional estimates, there is a strong linear effect along the female wage distribution, with motherhood having the strongest negative effects for the lowest quantiles. The unconditional estimates reveal much more similar effects across the distribution, with the strongest negative penalty occurring at the middle of the distribution, rather than the lower end (Killewald & Bearak, 2014).

Interpreting coefficients from unconditional quantile regression models as effects at different points of the distribution of y is a useful feature, but can be easily confused with interpretations of nonlinear OLS models. For example, in an OLS model with an interaction term, the effect of X_1 on Y may increase or decrease, depending on the value of X_2, the variable with which it is interacted. The effect of academic ability on engagement may vary by level of socioeconomic status, if ability and socioeconomic status have been interacted. Similarly, when including a quadratic term, the effect of X_1 on Y increases or decreases, depending on the value of X_1 that is plugged into the quadratic term $X_1 + X_1^2$. The effect of age is commonly specified as a quadratic function in the social sciences, allowing its effect to increase, level off, and decrease as age increases. In both of these examples, the effect of X varies depending on values of other *independent* variables.

With unconditional quantile regression, the effect of X on Y also varies, but it varies *depending on the value of Y*. We interpret the effect of X on a particular quantile of Y, rather than the effect of X conditional on the value of another independent variable. As with nonlinear specifications of X, the effect (as measured by the regression coefficient β) varies, but the effect becomes weaker or stronger depending on the location in the distribution of Y.

Estimation

As the example in Table 8.2 demonstrates, the value of the RIF depends crucially on the estimated density of y. The density refers to the probability distribution of y, such that the area under the density curve equals 1. Figure 8.3 illustrates the difficulties in estimating the density, using histograms for the writing test score variable, and bins with a width of two, four, and six points, respectively. The shape of the distribution varies considerably, depending on the width of the bins. Most obviously, the histograms are not smooth, which is a useful property when trying to estimate the density of y at a particular value of y. The discrete nature of the histogram bins makes it likely that the estimated density of y will be off, compared to a smooth estimate of the density of y.

Kernel density estimators are a non-parametric approach to solving this problem. Non-parametric here refers to the fact that the estimator does not yield a fixed set of parameters. Suppose we had a variable x, and wished to estimate the density of x over the entire distribution of x. Rather than use a histogram, we can estimate a kernel density function such that

$$\hat{f}(x) = \frac{1}{nh} \sum_{i=1}^{n} k\left(\frac{x - x_i}{h}\right) \tag{8.5}$$

where $k(\cdot)$ refers to a kernel function and h is a parameter known as the bandwidth (StataCorp LP, 2013, p. 1009). The bandwidth is the crucial part of this formula, as

Fig. 8.3 Distribution of writing test scores using different bin sizes. (**a**) Bin = 2. (**b**) Bin = 4. (**c**) Bin = 6
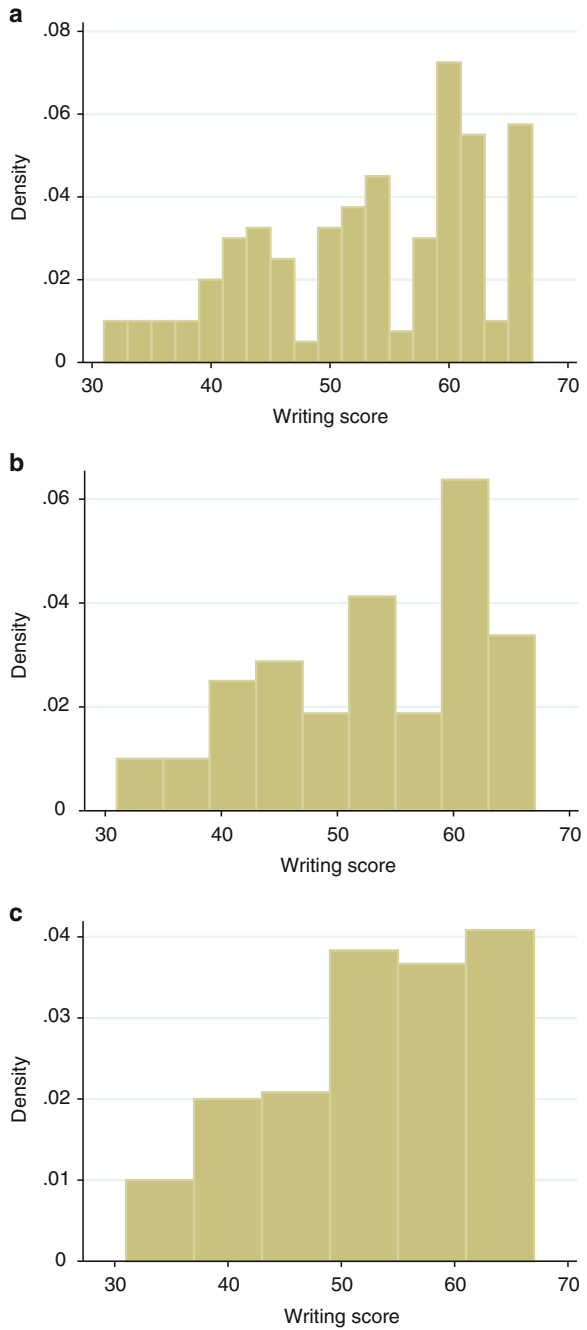
the size of h determines how smooth or spiky the estimated density curve is, much as the width of the bins for a histogram determine the smoothness of its shape.

The kernel function specifies a distribution to be used when estimating the density. The standard normal density function can be used to draw a normal curve, and should be familiar from any basic statistics class,

$$k(z) = \frac{1}{\sqrt{2\pi}} e^{\frac{-z^2}{2}} \tag{8.6}$$

and using this as the kernel, we can rewrite Eq. 8.5 as

$$\hat{f}(x) = \frac{1}{n} \sum_{i=1}^{n} \frac{1}{\sqrt{2\pi}} e^{-\left(\frac{\left(\frac{x-x_i}{h}\right)^2}{2}\right)}. \tag{8.7}$$

While this equation may look complex, it provides an elegant solution for plotting the density of x. A simple example illustrates how the kernel density function works.

Table 8.3 provides a dataset consisting of a single variable x with five observations, and Fig. 8.4 plots the density of this variable using a bandwidth of 1. From the

Table 8.3 Calculating the density of x at 3 with a Gaussian kernel density estimator

x_i	(1) $\frac{(x-x_i)^2}{2}$	(2) $e^{-(\text{column 1})}$	(3) $\frac{1}{\sqrt{2\pi}} * (\text{column 2})$
1	2.0	0.1353	0.0540
1	2.0	0.1353	0.0540
3	0.0	1.0000	0.3989
4	0.5	0.6065	0.2420
4	0.5	0.6065	0.2420
			$\frac{\sum_{i=1}^{5} \text{column 3}}{5} = 0.1982$

kernel = gaussian, bandwidth = 1.0000
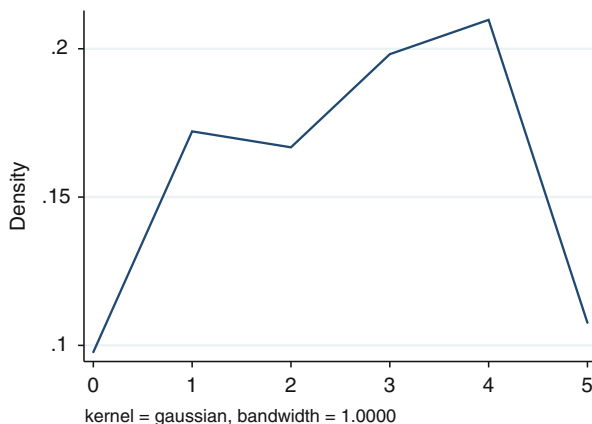
Fig. 8.4 Estimated density using Gaussian kernel and a bandwidth of 1

graph, the density of x when $x = 3$ is approximately .2, and we can use Eq. 8.7 to calculate this directly. In the first column of Table 8.3, we subtract each observation from 3, square it, and divide by 2 (because the bandwidth is 1 in this example, we can ignore the h's in Eq. 8.7). In the next column, we multiply this quantity by -1 and exponentiate it. Finally, we divide this quantity by the square root of 2π. Column 3 thus contains the quantity to the right of the summation sign in Eq. 8.7, and we sum these over the entire dataset and divide by the sample size to determine the density of x when $x = 3$, .198, matching what is shown in Fig. 8.4.

As the table demonstrates, the algorithm places greater weight on observations closest to the chosen value of x. More importantly, in Eq. 8.7 the differenced quantity, $x - x_i$, is divided by the bandwidth parameter. The size of this parameter will greatly determine the quantity for each observation before summing, thus determining what the final density will look like. Because the exact value of the RIF is determined by the density of y (the term $f_Y(q_\tau)$ in Eq. 8.4), determining the bandwidth is an important choice. Unfortunately, the literature does not provide much advice as to determining the appropriate kernel function and bandwidth for unconditional quantile regression, and in practice, researchers appear to be using the defaults of their particular software package.

Returning to the distribution of the writing test score variable, we can calculate its density using a variety of kernels and bandwidths. Figures 8.5 and 8.6 provide the estimated density of test scores using bandwidths of 1, 2, and 3, with two commonly-used kernels, the Gaussian (standard normal distribution) and the Epanechnikov. Both figures demonstrate that the estimated density at a specific test score can vary greatly depending on the bandwidth used, with smaller differences due to the choice of kernel.

While the help file for the Stata command `rifreg` suggests that

> The RIF for quantiles may be sensitive to the choice of bandwidth. It is advisable to graph the density and explore alternative choices of bandwidth for appropriate smoothness using the options in [the Stata command] vkdensity, for example.

kernel and bandwidth choices appear to be rarely discussed in papers applying unconditional quantile regression in education. I describe several ways to determine the optimal bandwidth in the empirical example below.

Presentation of Results

As should be clear at this point, quantile regression models yield numerous sets of results, depending on the quantiles of interest. As Davino et al. (2014) demonstrate, the number of distinct quantiles that can be estimated increases with the sample size, so that it is possible to estimates hundreds of different quantiles. In practice, such a vast quantity of output is unnecessary. Instead, authors adopt one of two approaches to the presentation of results, and sometimes both.

Fig. 8.5 Distribution of writing test scores using Epanechnikov kernel and different bandwidths. (**a**) Bandwidth = 1. (**b**) Bandwidth = 2. (**c**) Bandwidth = 3
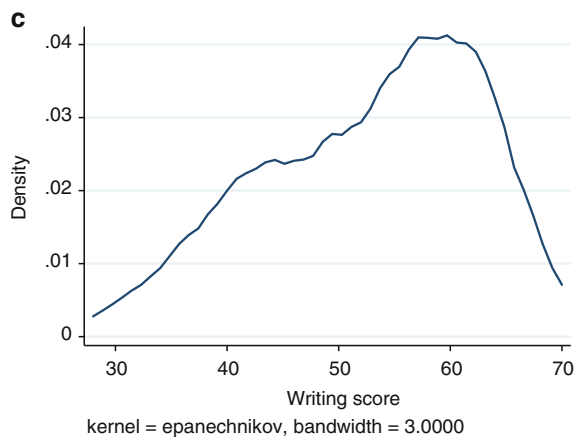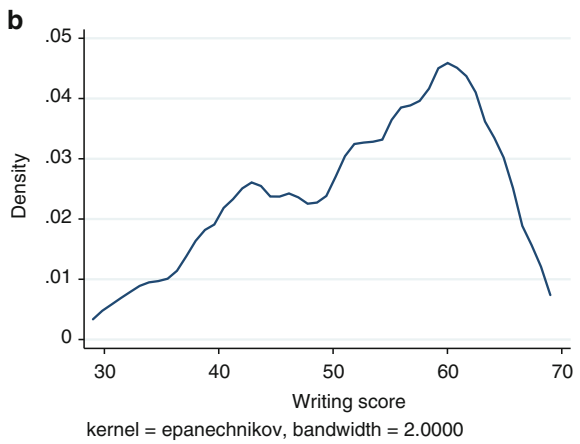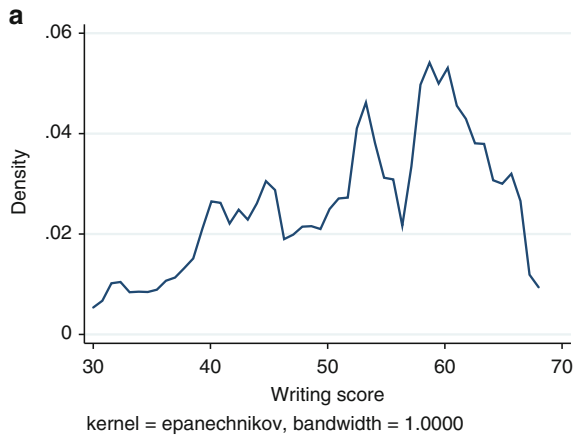
Fig. 8.6 Distribution of writing test scores using Gaussian kernel and different bandwidths. (**a**) Bandwidth = 1. (**b**) Bandwidth = 2. (**c**) Bandwidth = 3
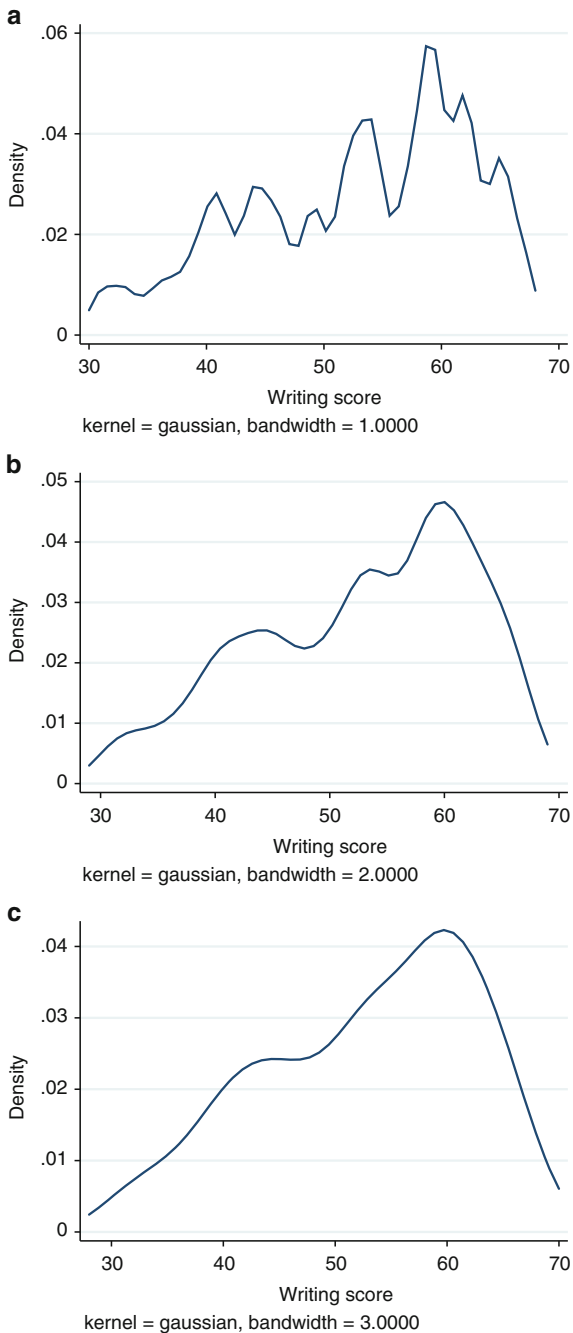
In the first approach, specific quantiles are chosen and a table is created, with each column corresponding to the quantile regression results for a given quantile. Typical quantiles displayed in a table are the 10th, 25th, 50th (median), 75th, and 90th. This approach has the advantage of providing the reader with complete model results, and by following coefficients across columns, examine how the effect of an independent variable differs across the distribution of y.

A second approach to presenting results calculates the effect for each independent variable for each quantile in .01 increments, from .01 to .99. That is, the effect is calculated for the 1st quantile, the 2nd quantile, and so forth. Obviously a table of 99 results is not feasible, nor likely to be comprehensible, so the results are instead graphed, with the quantiles along the x-axis and the size of the quantile regression coefficient on the y-axis. Superior graphs also include 95 % confidence intervals for each quantile, so that the reader can understand at what points along the distribution of y the effect is not statistically significant (the intervals bracket 0). Both of these approaches will be shown below.

Empirical Example

To illustrate the use of unconditional quantile regression in postsecondary research, I use data from the 2004 National Survey of Postsecondary Faculty (NSOPF) to understand the impact of gender and other covariates on the distribution of faculty compensation. Faculty compensation and its determinants have long been a topic of study within higher education, as researchers have striven to understand why racial and gender differentials exist in faculty pay.

The first example estimates the male-female differential in faculty compensation.[2] The dependent variable is the amount of base salary received during the calendar year from the faculty member's institution, excluding other sources of compensation from within the institution (such as summer salary and payment for overload courses and administrative duties) as well as outside the institution (such as consulting fees and honoraria).

As noted earlier in the chapter, the unconditional quantile regression estimator as implemented by Firpo et al. (2009) relies an the estimated density of y, and this quantity varies depending on the kernel function and bandwidth chosen for estimation. This in turn raises the crucial question, how should one choose the kernel and bandwidth? Applied researchers appear to rely on software defaults for these choices, which may not always be the best strategy for estimation. Instead, the researcher should investigate the distribution of y, determine the optimal bandwidth, and run a sensitivity analysis by altering the kernel and bandwidth and reestimating the quantile regression model for different values of the bandwidth

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[2]To simplify the analysis, no survey weights or adjustments of the standard errors for the complex sampling design of the NSOPF are used, and the dependent variable is not logged.

and different choices of kernel. This approach is similar to many regression-discontinuity applications, which estimate the regression model multiple times using varying bandwidths around the cutoff score.[3] Given the amount of output that an unconditional quantile regression model produces (one set of model results for each quantile), it is not feasible to include all of these sensitivity analyses in the typical journal article. However, the results should be summarized in the text, and a web appendix that details the analyses should be provided.

Several commands are available in Stata for estimating unconditional quantile regression models, as well as for determining the optimal bandwidth for a given application. Firpo et al. (2009) have developed the Stata command `rifreg` to implement their unconditional quantile regression estimator.[4] It relies on Stata's `kdensity` command to estimate the density of y at the specified quantile using the Gaussian kernel as the default, and the Stata manual explains how this is accomplished. The `kdensity` command estimates the "optimal" bandwidth by using "the width that would minimize the mean integrated squared error if the data were Gaussian and a Gaussian kernel were used, so it is not optimal in any global sense. In fact, for multimodal and highly skewed densities, this width is usually too wide and oversmooths the density" (StataCorp LP, 2013, p. 1003). Such language is not reassuring, and highlights the risks of relying on software defaults for modeling choices.

Another user-written command, `vkdensity` (Fiorio, 2004), allows the user to use three different approaches to determining the optimal bandwidth. The field of density estimation is fairly extensive, so the following description is only a brief overview. Each of the three approaches takes some measure of the spread in the distribution of y, combined with the sample size and a numerical adjustment, to determine the optimal bandwidth h. The default in Stata, for example, is the approach proposed by Silverman (1992)

$$h = \frac{.9m}{n^{1/5}} \tag{8.8}$$

where m is the smaller of either the standard deviation of y or the interquartile range (75th percentile−25th percentile) divided by 1.349 (StataCorp LP, 2013, p. 1010). Härdle (1991) proposes a similar formula, using 1.06 in the numerator instead of .9. Not surprisingly, these two approaches tend to yield similar h's. Finally, Scott (1992) proposes a more complex approach, combining measures of the "roughness" $R(K)$ and variance σ_K of the kernel with the standard deviation and sample size of y

$$h = 3 \left[\frac{R(K)}{35\sigma_K^4} \right]^{1/5} \sigma_y n^{-1/5}. \tag{8.9}$$

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[3]Indeed, one of the co-authors of the Firpo et al. (2009) paper has done this in their discussion papers, but omitted the sensitivity analyses from their published papers (Fortin, June 2 2014, Personal communication).

[4]While their estimator is easily programmed by hand, the ado files for this command can be found at http://faculty.arts.ubc.ca/nfortin/datahead.html

Table 8.4 Optimal
bandwidth estimation

s_y	28,604	Silverman	$\frac{.9(22,606)}{9,949^{1/5}} = 3,228$
25th percentile	47,500		
75th percentile	77,996	Härdle	$\frac{1.06(22,606)}{9,949^{1/5}} = 3,802$
IQR	30,496		
IQR/1.349	22,606	Scott	$\frac{1.144(28,604)}{9,949^{1/5}} = 5,192$
n	9,949		

For the Gaussian kernel, $R(K) = .5/\sqrt{\pi}$ and $\sigma_K = 1$ (Salgado-Ugarte, Shimizu, & Taniuchi, 1995), so that Eq. 8.9 simplifies to

$$h = 1.144\sigma_y n^{-1/5}. \tag{8.10}$$

These different approaches to determining the optimal bandwidth differ in two ways. First, the factor used to adjust the standard deviation to determine the bandwidth h varies. Second, either the standard deviation or the interquartile range is used as a measure of the spread of the distribution. Table 8.4 estimates h, using the three approaches and the base salary data from the NSOPF. The Scott estimate is larger not only due to the larger factor (1.144), but also because in this application, the standard deviation (28,604) is larger than the interquartile range divided by 1.349 (22,606). The Silverman optimal bandwidth is the default of the kdensity command, and the other two optimal bandwidths can easily be estimated with the vkdensity command using the hardle and scott options.

In practice, it can be difficult to determine which approach is optimal, so I recommend using all three to determine the sensitivity of your results and reporting the results using the Silverman formula in your tables (simply because this is the default, and your results will be comparable to other researchers who rely on the software defaults). As Figs. 8.5 and 8.6 demonstrate, bandwidth choice has a much larger impact on the shape of the density than does kernel choice. Nevertheless, it is very easy to construct code that runs your model using all of the eight kernels that can be used with kdensity as a sensitivity check, and then using rifreg's default Gaussian kernel for reporting your main model results.

Finally, one could always argue that for a given application, it makes sense to use a bandwidth that differs from the Silverman, Härdle, and Scott optimal bandwidths. Such an approach would require (a) a detailed explanation of why the particular bandwidth is better suited for the distribution of y than one of the optimal bandwidth calculations listed here (e.g., a distributional argument) and, (b) a summary of results based on the Silverman, Härdle, and Scott optimal bandwidths, as these are some of the more common approaches to the knotty issue of which bandwidth to use in kernel density estimation. The worry here is that one could play around with the bandwidth until the desired results are found, much as researchers can run multiple linear models with different specifications until they find what they are seeking (Ho, Imai, King, & Stuart, 2007). Without such an explanation, the reader will be left wondering how robust one's results really are.

Table 8.5 Male-female salary differentials, OLS and unconditional quantile regression results

	OLS	Quantiles of y				
		.10	.25	.50	.75	.90
Female	−5,441	−979	−1,562	−3,662	−7,228	−12,991
	(516)***	(420)	(412)***	(534)***	(810)***	(1,372)***
Asian	684	1,224	2,372	2,917	457	−2,909
	(891)	(610)	(659)***	(936)**	(1,528)	(2,685)
Black	−50	−259	246	606	−233	284
	(992)	(848)	(820)	(1,014)	(1,465)	(2,584)
Latino	550	2,053	1,164	724	−2,079	762
	(1,057)	(788)**	(888)	(1,101)	(1,580)	(2,865)
Nat. Amer.	−4,513	490	−377	−5,482	−8,172	−10,867
	(1,678)**	(1,306)	(1,419)	(1,846)**	(2,474)***	(3,593)**
Full	24,506	8,935	16,545	25,265	34,129	35,600
	(578)***	(476)***	(450)***	(583)***	(963)***	(1,692)***
Associate	8,040	7,560	11,120	10,925	6,941	489
	(581)***	(500)***	(498)***	(601)***	(795)***	(1,266)
Articles	1,901	332	533	1,078	2,310	4,823
	(61)***	(33)***	(41)***	(67)***	(119)***	(268)***
Books	573	257	459	754	457	562
	(170)***	(89)**	(115)***	(194)***	(302)	(547)
Constant	46,739	36,509	40,150	50,409	55,026	51,223
	(1,966)***	(1,061)***	(1,326)***	(1,906)***	(3,107)***	(3,745)***

Note: Cell entries are coefficients, with robust standard errors in parentheses. Models include 31 discipline-specific fixed effects. Unweighted n equals 9,949
** $p < 0.05$; *** $p < 0.01$

As with OLS, researchers usually display unconditional quantile regression results in a tabular format, often with the OLS results as a comparison to illustrate how conclusions can differ when understanding effects across the entire distribution. Table 8.5 presents one approach to displaying the faculty compensation results, with the OLS coefficients in the first column, and results for selected quantiles in the other columns. Note that with unconditional quantile regression, a separate regression model is estimated for every specific quantile, so to produce the results in Table 8.5, I estimated five different unconditional quantile regression models using the `rifreg` command.

Substantively, both the OLS and unconditional quantile regression results are in line with the literature, suggesting a negative male-female differential. The OLS results indicate that female faculty make, on average, over $5,000 less than male faculty with the same demographic and professional profile. With OLS, this estimate is the differential at the mean of the salary distribution. The unconditional quantile regression results, however, tell a different story. At the low end of the distribution, the male-female differential is about $1,000, increasing to almost $4,000 at the median and then to $13,000 at the 90th percentile. In other words, the results suggest

a male-female differential that is small when compensation is low, but much larger when compensation is high. This trend is masked when using OLS to estimate the male-female differential.

Another way to conceptualize the quantile regression results is with a thought experiment, in which females suddenly become males. In the case of OLS, if this occurred, mean compensation for females would increase over $5,000. In the case of the quantile regression results, we should think of the entire distribution of compensation shifting, as females become males. If this occurred, the distribution would shift to the right (in a positive direction), with small shifts at the low end of the distribution, and much larger shifts at the higher end of the distribution.

Graphical presentation is very helpful in presenting conditional and unconditional quantile regression model results, as the results for every .01 quantile can be summarized in a single graphic. In Fig. 8.7, the x-axis consists of quantiles ordered from .01 to .99, and the y-axis is the size of the female dummy variable coefficient. In other words, the figure displays the male-female differential for the 1st through the 99th quantiles, plotted as the thick line, summarizing the results from 99 different unconditional quantile regression models. They are different in that they are each estimated at a different quantile; the set of independent variables is the same for each model. The dotted lines above and below the thick line plot the 95 % confidence intervals for each coefficient, and the horizontal dashed line plots the OLS estimate of the differential (it is constant across the quantiles because OLS yields only one estimate of the differential).

Figure 8.7 adds two additional details to the story of male-female salary differences that are not apparent in Table 8.5. First, the confidence intervals for the coefficients below the 8th quantile bracket zero, indicating that the differential is not statistically significant at the very bottom of the distribution. Salary equity, it would seem, is achieved at the lowest end of the distribution. Second, the size of
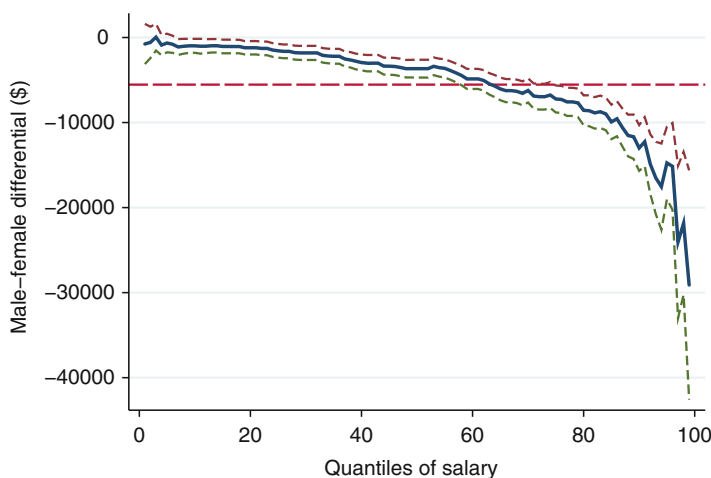
Fig. 8.7 Male-female differential in faculty compensation, summary of quantile regression results
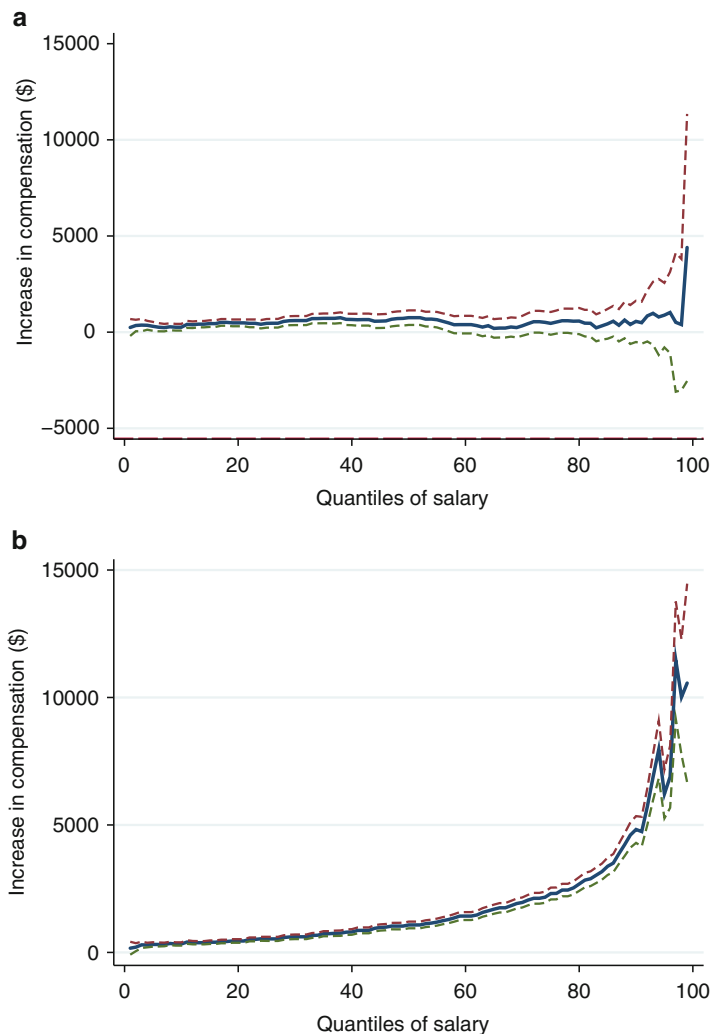
Fig. 8.8 Effect of one additional publication on faculty compensation, summary of quantile regression results. (**a**) Books. (**b**) Articles

the salary differential increases rapidly above the 90th quantile, increasing to almost $30,000 at the 99th quantile, although the confidence intervals for this part of the distribution are wide.[5]

Graphics such as Fig. 8.7 are also useful when reviewing results for a large set of independent variables. Figure 8.8, for example, summarizes the results for the effect

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[5]Please note that for expository purposes I am assuming selection on observables, but this clearly does not hold here. There are many differences between male and female faculty that are not taken into account by the simple model estimated here, so the results should not be interpreted as the "true" male-female salary differential.

of the number of books and articles published in the previous 2 years (not career publications) on compensation. An additional book yields a small, modest increase in salary along all parts of the distribution. An additional article, however, yields a small payoff at the low end of the distribution, with an increasingly larger yield at the higher end of the salary distribution. An additional article results in a $1,900 increase in compensation at the mean, but a $4,800 increase in compensation at the 90th quartile (see Table 8.5).

Inference

Correctly estimated standard errors are crucial for most analyses, as they are used to calculate test statistics for hypotheses, such as whether β is different from 0, as well as for confidence intervals. Yet besides dealing with non-independence of observations (such as the clustering of students within colleges), higher education researchers have tended to ignore this issue in much of their applied work. For example, robust standard errors are widely acknowledged as more appropriate for most applications using OLS and related models, but relatively few published papers in our field use robust standard errors, and instead use default standard errors that assume homoskedasticity.

For unconditional quantile regression, researchers face the choice of using standard errors derived from formulas assuming asymptotic normality (the default for most linear models such as OLS, logistic regression, and HLM) or standard errors derived from bootstrapping. Asymptotic normality refers to the idea that as the sample size for a random variable increases, its probability density function more closely approximates the standard normal distribution. In formal proofs, the sample size is taken to infinity, which raises the question of how large does a sample have to be for the assumption of asymptotic normality to hold? Unfortunately, there is no simple answer to this question, and most researchers simply assume it holds when estimating their regression models and standard errors.

Rather than using derived formulas to estimate the standard error of a regression coefficient β, bootstrapping uses the data at hand to estimate the standard errors. Assuming that the sample at hand is representative of the population, repeated subsamples of the sample are drawn, and the parameter of interest (in this case, β) is estimated. The variance and standard deviation of β is estimated, and because we are viewing the distribution of β in the bootstrapped samples as a sampling distribution, this standard deviation is the standard error for β. While bootstrapped standard errors are appealing because we do not need to rely on distributional assumptions, one drawback is that they do change as the model is reestimated, due to the drawing of random samples to estimate the standard error. As with multiple imputation, this can be avoided by choosing a seed number that starts the random process, so that results can be replicated.

As an example, Fig. 8.9 presents the 100 unconditional quantile regression coefficients at the median for the female dummy variable that are produced when
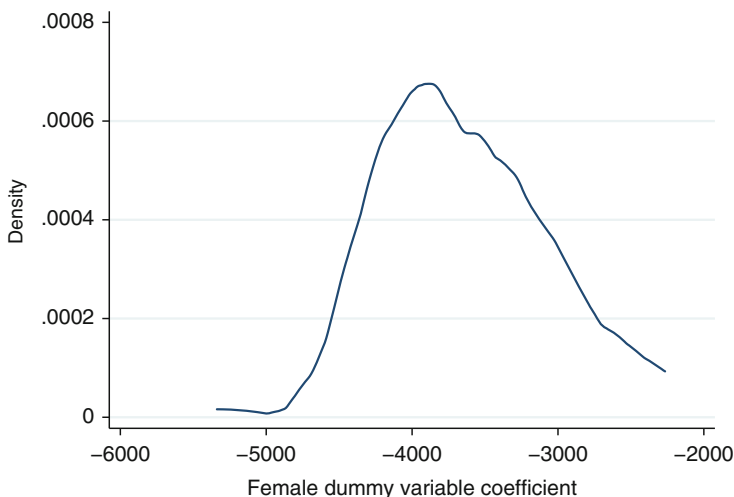
Fig. 8.9 Distribution of bootstrapped regression coefficients, male-female differential

estimating standard errors via the bootstrap. They are the result of drawing 100 subsamples from the data and then estimating the faculty compensation model at the 50th percentile using unconditional quantile regression on each sample. The estimate for the male-female differential reported in Table 8.5 is $-3,662$; note that the distribution of the 100 bootstrapped coefficients is centered just to the right of $-4,000$, and the mean of the coefficients equals $-3,635$, close to our original quantile regression estimate. The standard deviation of the coefficients is 579, which is close to the asymptotic standard error of 534 reported in Table 8.5.

Table 8.6 compares the two sets of standard errors that can be estimated for any unconditional quantile regression model, formula-based versus bootstrapped. The last set of numbers are ratios of the bootstrapped standard errors to the asymptotic standard errors (the default option for `rifreg` and most statistical software), such that the ratios can be interpreted as percentage differences. For example, at the 10th quantile, the bootstrapped standard errors for the female dummy variable coefficient are 7 % larger than the asymptotic standard errors. On average, the bootstrapped standard errors are about 5 % larger, with some much larger differences, especially for the 90th quantile. Such differences naturally raise the question of which set should be used when reporting results. Like many areas of statistics, partisans can be found on both sides of the issues. Given its lack of distributional assumptions, I tend to favor the bootstrapping standard errors, with two caveats. First, a specific seed for the random number generator should always be used, otherwise you (and other scholars) will not be able to exactly replicate your results. Second, the traditional standard errors should also be estimated and compared to the bootstrapped standard errors, as a sensitivity analysis.

Table 8.6 Comparison of standard errors

	Asymptotic					Bootstrapped					Ratio				
	.10	.25	.50	.75	.90	.10	.25	.50	.75	.90	.10	.25	.50	.75	.90
Female	420	412	534	810	1,372	450	458	579	820	1,374	1.07	1.11	1.08	1.01	1.00
Asian	610	659	936	1,528	2,685	711	690	980	1,527	2,878	1.17	1.05	1.05	1.00	1.07
Black	848	820	1,014	1,465	2,584	881	794	973	1,423	2,712	1.04	0.97	0.96	0.97	1.05
Latino	788	888	1,101	1,580	2,865	766	823	1,148	1,592	2,755	0.97	0.93	1.04	1.01	0.96
Native Amer.	1,306	1,419	1,846	2,474	3,593	1,439	1,634	1,941	2,245	3,577	1.10	1.15	1.05	0.91	1.00
Full	476	450	583	963	1,692	523	525	683	1,331	2,534	1.10	1.17	1.17	1.38	1.50
Associate	500	498	601	795	1,266	536	468	635	788	1,114	1.07	0.94	1.06	0.99	0.88
Articles	33	41	67	119	268	32	43	69	122	370	0.97	1.05	1.03	1.03	1.38
Books	89	115	194	302	547	84	118	152	277	526	0.94	1.03	0.78	0.92	0.96
Constant	1,061	1,326	1,906	3,107	3,745	1,099	1,386	1,743	3,217	5,028	1.04	1.05	0.91	1.04	1.34

Sensitivity of Results

The unconditional quantile regression model results discussed so far are based on the defaults for the `rifreg` command; that is, they use the Gaussian kernel and the optimal bandwidth calculated with the Silverman (1992) method. As a sensitivity analysis, the unconditional regression models were reestimated using the Gaussian, Epanechnikov, and uniform kernels, and then for each kernel using the optimal bandwidth formulas of Silverman, Härdle, and Scott, as outlined above. Table 8.7 presents the results for the female dummy variable coefficient only. Comparing the results using different bandwidths within each of the three kernels, the largest dollar difference between the estimates is less than $2,000, and the other differences are much smaller. Comparing the results using the different kernels in the table, the differences are even smaller, which is not surprising given that kernel density estimators are generally more sensitive to choice of bandwidth than choice of kernel. For this application, the results appear relatively insensitive regardless of whether the Gaussian, Epanechnikov, or uniform kernel is used, as well as to how the optimal bandwidth is calculated.

Table 8.7 Sensitivity of results to kernel selection and bandwidth calculation

| Kernel | Bandwidth calculation | Quantiles of y | | | | |
		.10	.25	.50	.75	.90
Gaussian	Silverman	−979	−1,562	−3,662	−7,228	−12,991
		(420)**	(412)***	(534)***	(810)***	(1,372)***
	Härdle	−1,024	−1,651	−3,719	−7,207	−13,254
		(439)**	(435)***	(542)***	(808)***	(1,400)***
	Scott	−993	−1,582	−3,689	−7,232	−13,187
		(426)**	(417)***	(538)***	(811)***	(1,393)***
Epanechnikov	Silverman	−981	−1,557	−3,685	−7,300	−13,251
		(420)**	(410)***	(537)***	(818)***	(1,400)***
	Härdle	−1,032	−1,664	−3,717	−7,212	−13,320
		(442)**	(439)***	(542)***	(808)***	(1,407)***
	Scott	−1,001	−1,573	−3,717	−7,262	−13,483
		(429)**	(415)***	(542)***	(814)***	(1,424)***
Uniform	Silverman	−904	−1,486	−3,486	−6,262	−12,492
		(387)**	(392)***	(508)***	(702)***	(1,320)***
	Härdle	−909	−1,577	−3,374	−7,135	−12,323
		(390)**	(416)***	(492)***	(800)***	(1,302)***
	Scott	−1,023	−1,488	−3,957	−7,227	−14,236
		(438)**	(392)***	(577)***	(810)***	(1,504)***

Note: Cell entries are coefficients, with standard errors in parentheses
**$p < 0.05$; ***$p < 0.01$

Comparison to Conditional Quantile Regression

As noted previously, conditional quantile regression estimates are not only difficult to interpret compared to unconditional quantile regression, but the substantive sizes of the coefficients often differ. Table 8.8 presents the conditional quantile regression results for the exact same faculty compensation model from Table 8.5, using the `qreg` command. Similar trends are evident for the male-female differential and the effect of publications on compensation, although the effects are smaller in the conditional quantile regression model than the unconditional model. Figure 8.10 plots the coefficients and confidence intervals for the unconditional and conditional regression coefficients. In each graph the solid dark line plots the unconditional results and the lighter, dashed line plots the conditional results. The male-female differential is relatively the same for both estimators until about the 40th quantile, after which the conditional estimates suggest a smaller effect for gender (panel *a*). The estimated effect of one additional book is about the same for both estimators (panel *b*). The results for articles, however diverge, with larger coefficients for the conditional estimates at lower quantiles, and then reversing at the 80th quantile, exhibiting much smaller estimates than the unconditional results.

Table 8.8 Male-female salary differentials, conditional quantile regression results

	Quantiles of *y*				
Variable	.10	.25	.50	.75	.90
Female	−1,077	−1,370	−2,597	−4,181	−7,600
	(526)**	(482)***	(469)***	(645)***	(1,185)***
Asian	613	2,055	1,648	149	373
	(906)	(832)**	(809)**	(1,112)	(2,043)
Black	−1,503	−320	108	430	774
	(1,010)	(927)	(901)	(1,238)	(2,276)
Latino	428	−105	352	−221	3,026
	(1,076)	(988)	(960)	(1,319)	(2,425)
Native Amer.	−3,477	−3,361	−2,597	−3,788	−4,385
	(1,707)**	(1,568)**	(1,524)	(2,094)	(3,848)
Full	12,636	16,932	23,371	29,612	34,933
	(588)***	(540)***	(525)***	(721)***	(1,325)***
Associate	6,026	6,895	8,352	8,888	9,733
	(591)***	(542)***	(527)***	(725)***	(1,332)***
Articles	1,010	1,425	1,824	2,537	3,240
	(62)***	(57)***	(55)***	(76)***	(139)***
Books	410	321	503	369	1,233
	(173)**	(159)**	(154)***	(212)	(389)***
Constant	37,597	44,586	47,173	51,112	52,547
	(2,001)***	(1,837)***	(1,786)***	(2,454)***	(4,510)***

Note: Cell entries are coefficients, with standard errors in parentheses. Models include 31 discipline-specific fixed effects. Unweighted n equals 9,949
**$p < 0.05$; ***$p < 0.01$
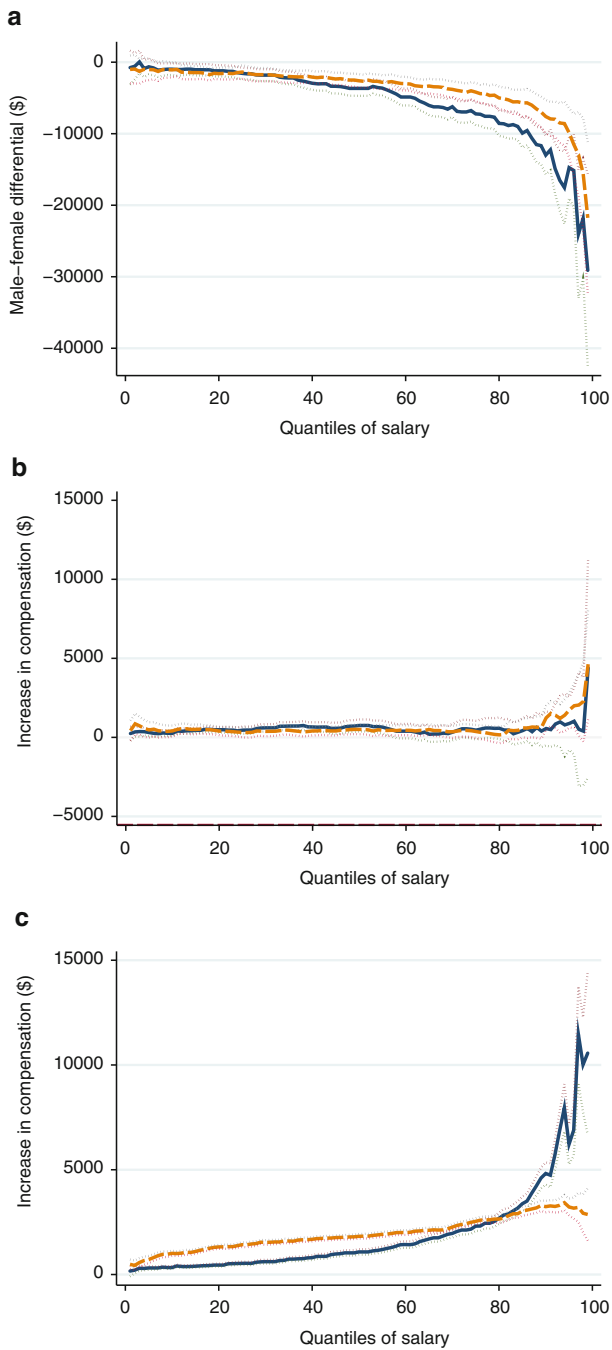
Fig. 8.10 Comparison of unconditional and conditional regression models. (**a**) Male-female differential. (**b**) Books. (**c**) Articles

Unconditional Quantile Regression
with Endogenous Treatment

The unconditional quantile regression estimator described above simply uses the recentered influence function (RIF) to transform y before employing OLS to estimate the coefficients. OLS relies on several assumptions so that we can use the results to infer the effect of an independent variable on y. Most of these assumptions can be easily dealt with in one way or another. Heteroskedastic errors, for example, can be handled with robust standard errors, while severe multicollinearity can be addressed through data reduction or an increase in the number of observations. The single most important assumption underlying OLS, however, also turns out to be the most difficult to address.

In the context of educational data, in which students, families, and institutions make a variety of choices that we can only observe in our data (as opposed to experimentally manipulate), OLS assumes *exogeneity*, *conditional independence*, or *selection on observables*. Exogeneity means that the independent variables in the model are uncorrelated with the error term u

$$Y_i = \beta_0 + \beta_1 D_i + \beta_2 X_i + u_i \tag{8.11}$$

where D is a dummy variable indicating participation in a policy, program, or behavior of interest, and X represents a set of control variables.

Given our interest in the effect of D, unbiased estimation of β_1 is crucial. However, we can only conclude that β_1 is unbiased if D is uncorrelated with u. Given that u represents the variables that affect Y but are not included in the model, this assumption is unrealistic in most areas of higher education research. Consider a simple example that should be familiar to all postsecondary researchers: student outcomes. A few of the factors that drive student decision-making and affect student outcomes are the quality and culture of the primary and secondary schools attended, how much the family emphasizes education and how supportive they are of postsecondary educational pursuits, the attitudes of friends and peers towards educational choices and appropriate aspirations for life, as well as myriad other sources of social and cultural capital, student academic ability, psychological makeup such as conscientiousness and grit, their physical health, and other sources of human capital, and the financial resources available through family connections, postsecondary institutions, and other sources, such as state and federal agencies.

The central issue is that these factors drive decisions about outcomes of interest, such as college access and persistence, and many of these factors also drive decisions to participate in programs and behaviors of interest (D's), such as remediation, first-year initiatives, and student engagement. We can only credibly claim exogeneity if none of the factors in u are correlated with D. Clearly, this is a high hurdle to jump, which is why alternative forms of OLS that can credibly claim exogeneity of treatment variables (such as instrumental variables, regression discontinuity, and panel models) are becoming more popular with educational researchers (Murnane & Willett, 2011).

Instrumental Variables

Instrumental variables is a simple yet powerful approach to the problem of endogeneity of treatment. Given

$$Y_i = \beta_0 + \beta_1 D_i + \beta_2 X_i + u_i \tag{8.12}$$

we seek an alternative form of D that is not correlated with u. If a variable exists that is highly correlated with D but not with u, we can use a two-step process to "purge" D of its correlation with u.

First, if D and Z are correlated, we can estimate the following model in which D is driven in part by Z

$$D_i = \theta_0 + \theta_1 Z_i + \theta_2 X_i + v_i \tag{8.13}$$

and then create predicted values from this model

$$\hat{D}_i = \hat{\theta}_0 + \hat{\theta}_1 Z_i + \hat{\theta}_2 X_i. \tag{8.14}$$

Second, we use these predicted values in place of D in our original treatment effect model

$$Y_i = \beta_0 + \beta_1 \hat{D}_i + \beta_2 X_i + u_i \tag{8.15}$$

because if Z and X are uncorrelated with u, then this new estimate of D must also be uncorrelated with u. See Porter (2014) for an explanation of the assumptions underlying IV, and Bielby, House, Flaster, and DesJardins (2013) for an overall review.

Building on the work of Abadie, Angrist, and Imbens (2002) and Abadie (2003), Fröhlich and Melly (2010, 2013) propose an IV estimator for unconditional quantile regression when the main focus of interest is the effect of a binary treatment variable, and a credible binary instrument for the treatment exists.[6] Similar to the conditional quantile regression approach, their estimator is formulated as an optimization problem with weights, such that

$$\arg\min \sum_{i=1}^{N} \rho_\tau (Y_i - \alpha - \beta D_i) W_i \tag{8.16}$$

where $\rho_\tau (Y_i - \alpha - \beta D_i)$ is again an absolute value function for the linear model of $Y_i = \alpha + \beta D_i$, such that $\rho_\tau(u) = u \cdot (\tau - \mathbf{1}(u < 0))$, and W_i represent the weights for the IV estimator.

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[6]Continuous instruments can be dichotomized to satisfy this requirement.

Equation 8.16 appears very similar to Eq. 8.3, and like the conditional quantile regression estimator is solved through optimization. There are, however, two major differences between the conditional quantile regression estimator and the instrumental variables unconditional quantile regression estimator. First, note that the covariates X (other than the treatment variable D) do not appear in Eq. 8.16, as they do in the formula for conditional quantile regression. This results in unconditional versus conditional quantile estimates. Second, Eq. 8.16 includes the set of IV weights W, which are used to identify the effect of D for compliers in the population (see Porter (2014) for an explanation of compliers, defiers, always-takes and never-takers).

The weights W are derived from the treatment variable D, the instrument Z, and an estimate of the probability that $Z = 1$ (notated by $\pi(Z = 1|X)$)

$$W_i = \frac{Z_i - \pi(Z_i = 1|X_i)}{\pi(Z_i = 1|X_i)(1 - \pi(Z_i = 1|X_i))}(2D_i - 1). \qquad (8.17)$$

The weights are the crucial part if this estimator, and can be thought of as "complier weights." They weight the data in order to estimate the effect of D for compliers, relying on the relationship between the instrument and the endogenous regressor.

Recall that with IV, we can only estimate the effect of D for units whose behavior is actually affected by the instrument Z. With binary instruments and treatments, we can partition units into four cells (assuming monotonicity, i.e., the absence of defiers). Table 8.9 illustrates these cells based on the values of the instrument and the treatment for units. Compliers fall across the diagonal, because they decline treatment when $Z = 0$, and agree to treatment when $Z = 1$. We cannot identify them individually, because always-takers and never-takers also appear in these cells as well ($Z = 0, D = 0; Z = 1, D = 1$). For example, never-takers always decline treatment regardless of the value of the instrument, so they are units whose $D = 0$ for both $Z = 0$ and $Z = 1$.

We can, however, estimate the treatment effect for the compliers across the entire dataset, even if we cannot identify them individually, and the weights W achieve this, as well as balancing the distribution of covariates between treated and untreated compliers (Fröhlich & Melly, 2010). This allows the estimated treatment effects to be considered unconditional even with the inclusion of covariates, similar to the

Table 8.9 Compliance behavior of units

Instrument Z_i	Treatment D_i	
	0	1
0	Compliers and never-takers	Always-takers
1	Never-takers	Compliers and always-takers

Table 8.10 Weights for Fröhlich and Melly (2013) IV estimator

	Z	D	$\pi(Z)$	W
Compliers and always-takers	1	1	0.5	2
Compliers and never-takers	0	0	0.5	2
Always takers	0	1	0.5	−2
Never-takers	1	0	0.5	−2

effects estimated by the Firpo et al. (2009) recentered influence function approach that assumes exogeneity of treatment.

In the simplest example, suppose we estimate an IV unconditional quantile regression model with no covariates. In this case, $\pi(Z = 1|X) = \pi(Z)$, or the mean of Z. Suppose further that for half of the sample, the instrument takes the value of 1, so $\pi(Z) = .5$. Using Eq. 8.17 and the four groups from Table 8.9, we can estimate the weights as shown in Table 8.10. The two groups that contain compliers always receive positive weights, while the always-takers and never-takers always receive negative weights. The size of the weight is determined by the propensity score, $\pi(Z = 1|X)$; the weights are equal among the groups only when $\pi(Z = 1|X) = .5$.

Estimation

This estimator has been implemented in Stata via the user-created `ivqte` command. The main issue in using the IV unconditional quantile regression estimator is generating W, specifically, estimating $\pi(Z = 1|X)$. With no covariates in the model, $\pi(Z = 1|X)$ is the mean of Z. With covariates, the estimated probability of Z becomes a type of propensity score, and there are different ways of estimating it.

First, because Z is a binary variable, we can use either logistic regression (the `ivqte` default) or a linear probability model (an OLS regression with a binary dependent variable). Typically logistic regression is preferred, because it yields predicted probabilities bounded within 0 and 1.

Second, we can use either global or local models. Global models use the entire sample to estimate $\pi(Z = 1|X)$; for example, $\pi(Z = 1|X)$ is estimated using a logistic regression model with Z as the dependent variable and X as the covariate(s). Local models use a kernel and weighted subsets of the data to estimate $\pi(Z_i)$, somewhat similar to the kernel density estimator. As with the kernel density estimator, some choice must be made as to how much of the data should be used. With local logistic regression, two smoothing parameters must be set to determine the bandwidth used: h for continuous predictors of Z, which varies between 0 and ∞, and λ for discrete predictors of Z, which varies between 0 and 1. When h is set to infinity and λ to 1, the entire dataset is used and a global model is estimated. In addition, a kernel must be chosen for local logistic regression; the Epanechikov kernel is the default in `ivqte`.

As with kernel density estimators, the researcher faces choices as to how smooth the estimates should be (h and λ), as well as which kernel to use. Because the literature indicates that kernel choice has little practical impact on results (Fröhlich & Melly, 2010), the primary issue is choosing the optimal values of h and λ. Fröhlich and Melly (2010) have developed a related command, `locreg`, which provides the researcher with these optimal values.

Empirical Example

To illustrate the use of unconditional quantile regression with instrumental variables, I continue with the NSOPF data to understand the impact of faculty unions on faculty compensation. The major concern with literature in this area is the endogeneity of unionization. The literature suggests two reasons why a variable measuring the presence of a faculty union at an institution is endogenous in a model with faculty compensation as the dependent variable. First, there may be omitted variables from the model. Faculty at unionized institutions may differ from faculty at non-unionized institutions in ways that are not easily measured. Unionized institutions may tend to attract faculty who prefer to teach rather than conduct research; faculty who do not conduct much research tend to earn less compensation than faculty who do. Even if we tried to control for teaching and research emphasis between campuses, our measures will be crude (such as the Carnegie classification), and their inclusion in the model will not sufficiently remove the correlation between the unionization variable and the error term, which leads to bias in the estimate of the effect of unionization.

Second, OLS assumes that the causal chain of events runs from x to y. Yet the literature on why faculty choose to unionize indicates that one of the primary drivers is low compensation. So while we might expect faculty unions to raise faculty salaries through collective bargaining, a strong case can be made that faculty compensation also drives unionization. Such simultaneity between the dependent and independent variables results in endogeneity, just as in the case of omitted variables.

Porter (2013) has argued that state public employee unionization laws can be considered a valid instrument for faculty unions at an institution, because faculty at public institutions are public employees. These laws vary in strength across the country, in terms of the ease in which faculty can form a union and the institution is required to collectively bargain with the union. Conditional on two covariates, state political ideology and the strength of state oversight over higher education, these laws should have a strong, direct effect on unionization and should not affect faculty compensation other than through unionization. He also demonstrates that this is a strong instrument (correlation of .58 between state ideology and campus unionization).

Figure 8.11 compares the results of the two approaches to understanding the effects of unions on faculty compensation. Two sets of models are estimated. The first set assumes unionization is exogenous, and uses the `rifreg` command to
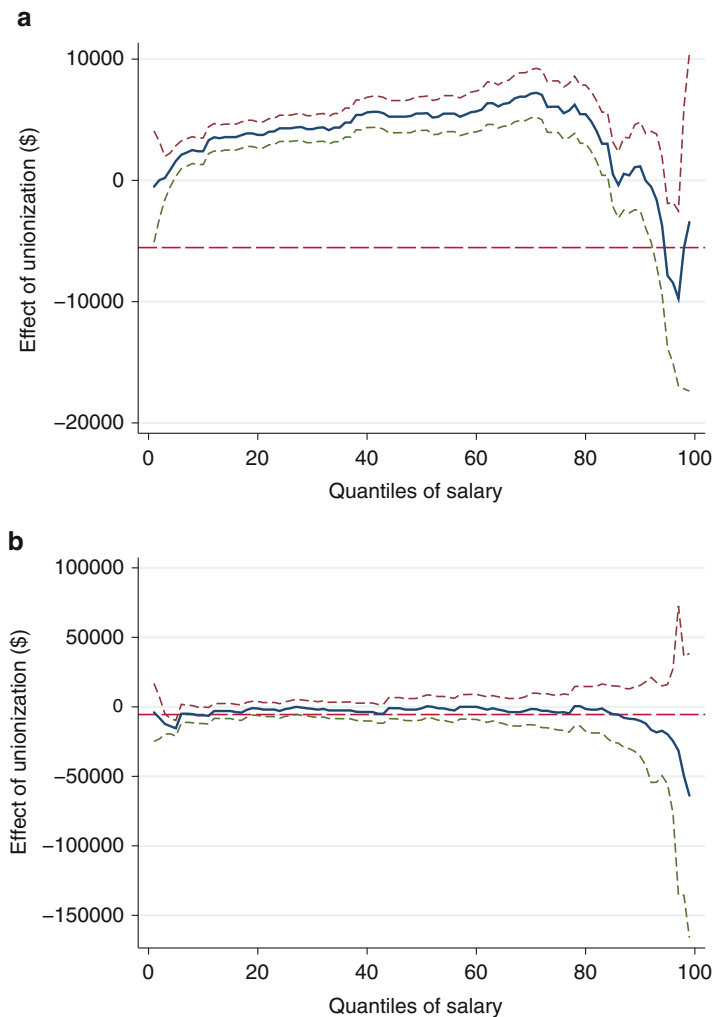
Fig. 8.11 Unionization and compensation, exogenous and endogenous (IV) quantile regression.
(**a**) RIF-OLS. (**b**) Quantile IV

estimate the effect of unionization. Besides a dummy variable indicating unioniza-
tion of the individual faculty member's campus, the model includes the individual-
level faculty covariates used in the previous models, as well as logged student
enrollment at the institution, logged expenditures per student, Barron's college
selectivity index, and dummy variables for Carnegie classification as control
variables. The second set of results assumes unionization is endogenous, and
uses the `ivqte` command, with a binary indicator for weak/strong state public
employee collective bargaining rights as the instrument. The model also includes
two covariates, state political ideology and whether the state had a consolidated
governing board.

Panel *a* of the figure contains the RIF-OLS results, which suggests unionization has a strong, positive effect on faculty compensation. The effects increase until about the 75th percentile, and then rapidly drop off to zero (no difference between faculty at unionized and non-unionized institutions). Panel *b* shows the quantile IV results using state laws as an instrument. The 95 % confidence intervals bracket almost the entire distribution, leading to the conclusion that unionization has no effect on faculty compensation.

As with any IV estimate, care must be made in interpretation of the results. In an OLS model with a truly exogenous treatment variable (e.g., analysis of an experiment where college students were randomly assigned to a treatment and control condition, with perfect compliance), the regression coefficient β can be interpreted as the average treatment effect – the estimated effect if we randomly selected students from the population and then administered the treatment. IV estimates, however, do not have the same interpretation. Instead, they produce what are known as *local average treatment effects*, where *local* refers to the subset of the population on which the treatment effect is estimated. In the context of IV, this is the group of units, known as compliers, whose assignment to treatment is determined by the instrument. In the current example, this means we should not conclude that unionization has a null effect. Instead, we can conclude that for the group of institutions whose faculty decide to unionize based on the strength of state laws, unionization has no effect. For example, we can say little about the effect of unionization on colleges that would never unionize despite how easy state public employee union laws may make the collective bargaining process. A very conservative, religious college may be hostile to unions, for example, and would always remain non-unionized regardless of state law.

Sensitivity Analysis

The previous analysis used global logistic regression to estimate $\pi(Z)$ when creating the IV weights; in other words, it assumed the default smoothing parameters $h = \infty$ and $\lambda = 1$. The `locreg` command (Fröhlich & Melly, 2010) allows users to find the optimal smoothing values for the IV estimator, using a leave-one-out cross-validation approach that seeks the smallest mean squared error. In leave-one-out cross-validation, values are first chosen for h and λ. The sample is then split into N datasets (the training sets), on which the local logistic regression model is estimated using all of the sample except for one observation, and the coefficients from the model are used with values of the independent variables from the remaining observation (the validation dataset) to make a prediction for Y. The predicted value is compared to the actual value, and the mean squared error (MSE) is calculated across the datasets for this pair of smoothing values. The user tries out different sets of values for the smoothing parameters to find the pair that yields the lowest mean squared error; these are the optimal values.

Table 8.11 Search process for optimal values of h and λ

First iteration			Second iteration			Third iteration			Fourth iteration		
h	λ	MSE	h	λ	MSE	h	λ	MSE	h	λ	MSE
0.2	**0.2**	**0.084307**	0.05	0.05	0.073809	0.06	0.01	0.073854	**0.1**	**0**	**0.069696**
0.2	0.5	0.084712	0.05	0.1	0.073813	0.06	0.02	0.073854	0.1	0.0025	0.070971
0.2	0.8	0.084924	0.05	0.15	0.073818	0.06	0.03	0.073855	0.1	0.005	0.071008
1	0.2	0.126978	0.05	0.2	0.073823	0.06	0.04	0.073855	0.1	0.0075	0.071069
1	0.5	0.13043	0.05	0.25	0.073827	0.06	0.05	0.073856	0.1	0.01	0.071155
1	0.8	0.131862	**0.1**	**0.05**	**0.073693**	0.08	0.01	0.073844			
∞	0.2	0.151678	0.1	0.1	0.073979	0.08	0.02	0.073844			
∞	0.5	0.152310	0.1	0.15	0.073985	0.08	0.03	0.073844			
∞	0.8	0.152905	0.1	0.2	0.073992	0.08	0.04	0.073845			
			0.1	0.25	0.073999	0.08	0.05	0.073845			
			0.15	0.05	0.082831	**0.1**	**0.01**	**0.071155**			
			0.15	0.1	0.082858	0.1	0.02	0.071741			
			0.15	0.15	0.082896	0.1	0.03	0.072719			
			0.15	0.2	0.082943	0.1	0.04	0.073595			
			0.15	0.25	0.082997	0.1	0.05	0.073693			
			0.2	0.05	0.08369	0.12	0.01	0.081329			
			0.2	0.1	0.083944	0.12	0.02	0.081334			
			0.2	0.15	0.084158	0.12	0.03	0.081337			
			0.2	0.2	0.084307	0.12	0.04	0.08134			
			0.2	0.25	0.084414	0.12	0.05	0.081343			
			0.25	0.05	0.086121						
			0.25	0.1	0.086493						
			0.25	0.15	0.086727						
			0.25	0.2	0.086883						
			0.25	0.25	0.086994						

This procedure is computationally intensive due to the cross-validation, and even more so given the large number of pairs of values to be tested. Rather than testing many values at once, I recommend using smaller sets of values in an iterative process to narrow down the choices and find the optimal values. For the faculty union example, I first tested the values .2, 1 and ∞ for h and .2, .5, and .8 for λ. MSEs were calculated for each possible pair that could be created from the six values, and as noted in Table 8.11, the pair (.2,.2) had the lowest MSE (shown in bold). Next, MSEs were calculated for the values .05 to .25 for both, resulting in the optimal values of .1 and .05 for this set of numbers. The process was repeated for .06, .08, .1, and .12 for h and .01, .02, .03, .04, and .05 for λ, and once more with .1 for h and 0, .0025, .005, .0075, and .01 for λ, yielding final values of .1 for h and 0 for λ.

Table 8.12 shows the results for the faculty union model with the default smoothing values of ∞ for h and 1 for λ compared to the optimal values of .1 for h and 0 for λ. For the estimates using the default settings, we would conclude that

Table 8.12 Effect of faculty unionization on compensation: IV unconditional quantile regression estimates

	Quantiles of y				
	.10	.25	.50	.75	.90
$h = \infty$ and $\lambda = 1$	−6,095	−1,622	−1,035	−4,114	−10,060
	(3,008)**	(2,684)	(4,271)	(6,377)	(13,008)
$h = .1$ and $\lambda = 0$	−12,850	−14,578	−11,600	−7,500	−11,400
	(46,586)	(29,946)	(18,926)	(97,642)	(75,227)

Note: Cell entries are coefficients, with standard errors in parentheses
**$p < 0.05$

unions decrease compensation at the 10th percentile, with no statistically significant differences along the rest of the distribution. For the estimates using the optimal bandwidths, the coefficients have the same sign as the default estimates, and while some are much larger in value, none are statistically significant. In this example, both approaches yield substantively similar results, and we would conclude that unionization has no effect on faculty compensation.

Discussion

The preceding review of the literature on quantile regression demonstrates the potential of analyzing distributions instead of means in postsecondary research. The main drawback to using OLS in applied research is that it only shows us the effect of independent variables on the mean of y. Quantile regression allows the researcher to estimate how the entire distribution of an outcome changes given a unit change in x, rather than just the change in the mean of y. While quantile regression models generate a much larger set of empirical results compared with OLS, careful use of tables and graphical presentation of results can easily illustrate how an independent variables affects the distribution of y.

For researchers seeking to use quantile regression, the first modeling choice they face is conditional versus unconditional quantile regression. For most postsecondary applications, conditional quantile regression does not seem to be a useful approach. It estimates the effect of an independent variable on the conditional distribution of y, such that the coefficient must be interpreted as a within-group effect, where the groups are defined by the independent variables used in the model. In general, this is not the effect that is useful for most evaluation and policy discussions. Instead, unconditional quantile regression would appear to be the best choice, because it tells us the effect of x on the unconditional distribution of y. In other words, if x increases by one unit, how much does the distribution of y change? This interpretation is similar to how we interpret OLS regression results.

Next, some assumptions must be made about the density of y. While the choice of kernel typically does not matter, the bandwidth does, and researchers

should investigate different bandwidths to determine the robustness of their results. Bootstrapping the standard errors, rather than relying on the default standard errors estimated by the software, is also recommended.

Whether researchers should use the recentered influence function approach that assumes exogeneity, or an alternative approach that assumes endogeneity, will depend on the particular research question. Given the ubiquity of unobservable selection processes in higher education, not just on the part students and their families, but also faculty and institutions, endogeneity is a more realistic assumption than exogeneity. Besides instrumental variables, econometricians have been devising other quantile regression approaches that can handle endogeneity, such as regression discontinuity quantile regression (Frandsen, Fröhlich, & Melley, 2012). Work in this area is changing rapidly, so readers are advised to conduct a thorough literature review before using these techniques.

Further Resources

Conditional Quantile Regression

For readers seeking a short introduction, Koenker and Hallock (2001) provide an accessible overview of these models and their application in economics while Buchinsky (1998) goes into more depth, especially regarding estimation issues. Davino et al. (2014) is a very recent, book-length treatment of conditional quantile regression and is probably the single-best source for anyone interested in these models.

Unconditional Quantile Regression

Firpo et al. (2009) describe the RIF-OLS approach in their seminal paper on unconditional quantile regression, and is required reading for anyone using these models. Their supplement provides proofs for their main paper, and it is probably not very useful for most researchers.

Firpo (2007) has proposed another estimator for unconditional quantile treatment effects under exogeneity. This estimator has been implemented in the ivqte command, but does not seem to be widely used.

For endogenous regressors, two approaches have been proposed. Fröhlich and Melly (2013) have developed an IV approach to quantile treatment effects, and have implemented their estimator in the Stata command ivqte (Fröhlich & Melly, 2010). This command is somewhat complicated, in that it will produce four different estimators, depending on the syntax used. Their paper in the *Stata Journal* requires close reading to correctly use this command.

Kernel Density Estimators

Kernel density estimators play an important role not only in quantile regression
estimators, but also in the visual display of data, as well as propensity score
matching. Cox (2007) provides an accessible introduction to these estimators, as
does Salgado-Ugarte, Shimizu, and Taniuchi (1993).

Appendix

Below is the Stata syntax used to generate the results in this chapter.

```
global figures directory

*** Example in Table 8.1 ***
use http://www.ats.ucla.edu/stat/stata/notes/hsb2, clear
sum write, detail
sum write if female==0, detail
sum write if female==1, detail
reg write female
qreg write female
qreg write female, quantile(.25)
replace write=1000 if id==192
reg write female
qreg write female

*** Graphing densities for Fig. 8.6, panel (a) ***
kdensity write, bwidth(1) kernel(gau) legend(off)
  graphregion(color(white) lwidth(large)) xtitle
  ("Writing score") title("")
graph export $figures\kernel1gau.eps, replace
!epstopdf $figures\kernel1gau.eps

*** Input faculty salary data ***
use nsopfdata.dta, clear
* Define faculty group for analysis
keep if q1==1 & q2==1 & q3==1 & q5==1 // only instr.
 duties, faculty status, full-time
keep if q4==1 | q4==2 // principal activity is teaching
 or research
keep if q10==1 | q10==2 | q10==3 // rank of prof, assoc
 or asst
* Code independent variables
recode q17a1 (1=1) (0 2/7=0), gen(phd)
```

```
recode q71 (2=1) (1=0), gen(female)
gen age=2003-q72
recode q10 (1=1) (2 3=0) (0 4 5 6=.), gen(full)
recode q10 (2=1) (1 3=0) (0 4 5 6=.), gen(assoc)
rename q74b asian
rename q74c black
gen native=0
replace native=1 if q74a==1 | q74d==1
rename q73 latino
rename q52ba articles
rename q52bd books
rename q16cd2 disc
xi i.disc // discipline dummy vars
* Dependent variable
rename q66a basesalary
drop if basesalary<20000 // seems odd to be FT prof and
 making less than 20K
* Create analytic sample
reg basesalary female asian black latino native full
 assoc articles books _Idisc_2-_Idisc_32
keep if e(sample)

*** OLS-RIF results for Table 8.5 ***
reg basesalary female asian black latino native full
 assoc articles books _Idisc_2-_Idisc_32
estimate store ols
foreach i in 10 25 50 75 90
rifreg basesalary female asian black latino native full
 assoc articles books _Idisc_2-_Idisc_32,
 quantile(.'i')
estimates store q'i'
estimates table ols q10 q25 q50 q75 q90,
  drop(_Idisc_2-_Idisc_32) b(%9.0f) se se(%9.0f)

*** bootstrapping SEs for Table 8.6 ***
foreach i in 10 25 50 75 90
bootstrap, reps(100) seed(642014): rifreg basesalary
 female asian black latino native full assoc articles
 books _Idisc_2-_Idisc_32, quantile(.'i')
estimates store q'i'
estimates table q10 q25 q50 q75 q90,
  drop(_Idisc_2-_Idisc_32) b(%9.0f) se se(%9.0f)

*** Testing sensitivity of results in Table 8.7 ***
* Gaussian
```

```
foreach i in 10 25 50 75 90
rifreg basesalary female asian black latino native full
 assoc articles books _Idisc_2-_Idisc_32, quantile(.'i')
estimates store silverq'i'
foreach i in 10 25 50 75 90
rifreg basesalary female asian black latino native full
 assoc articles books _Idisc_2-_Idisc_32, quantile(.'i')
 width(5192)
estimates store hardleq'i'
foreach i in 10 25 50 75 90
rifreg basesalary female asian black latino native full
 assoc articles books _Idisc_2-_Idisc_32, quantile(.'i')
 width(3802)
estimates store scottq'i'
estimates table silverq10 silverq25 silverq50 silverq75
 silverq90, drop(_Idisc_2-_Idisc_32) b(%9.0f)
 se se(%9.0f)
estimates table hardleq10 hardleq25 hardleq50 hardleq75
 hardleq90, drop(_Idisc_2-_Idisc_32) b(%9.0f)
 se se(%9.0f)
estimates table scottq10 scottq25 scottq50
 scottq75 scottq90, drop(_Idisc_2-_Idisc_32) b(%9.0f)
 se se(%9.0f)
* to see results with Epanechnikov and uniform
 distributions, just add kernop(ep) or kernop(rec) as
 options

*** Conditional QR results for Table 8.8 ***
foreach i in 10 25 50 75 90
qreg basesalary female asian black latino native full
 assoc articles books _Idisc_2-_Idisc_32, quantile(.'i')
estimates store q'i'
estimates table q10 q25 q50 q75 q90,
 drop(_Idisc_2-_Idisc_32) b(%9.0f) se se(%9.0f)

*** Graph unconditional QR results for gender (Fig. 8.7)
 ***
* This set of code can be used to create the other
 figures in the chapter
matrix quantiles = J(1,3,.) // create blank matrix to
 add model results to
matrix colnames quantiles = B SE Q
matrix identity=J(1,1,1) // to add to counter matrix
 per loop
matrix counter=J(1,1,0) // will save quatiles for
```

```
 qraphing
forvalues i=.01(.01)1
matrix counter=counter+identity
qui:rifreg basesalary female asian black latino native
 full assoc articles books _Idisc_2-_Idisc_32,
 quantile('i')
matrix table=r(table) // create a matrix of results for
 each rd (have to rename matrix)
matrix b_se=table[1..2,1..1]' // grab B and SE and
  transpose so they are in column format rather than row
matrix temp=b_se,counter // add quantile as a column
matrix quantiles=quantiles\temp //add most recent set
 of model results to matrix
matrix quantiles2=quantiles[2..100,1..3] // drop missing
 first row
clear svmat quantiles2, names(col) // converts matrix
 of results to dataset for graphing
gen ciplus=B+1.96*SE
gen cineg=B-1.96*SE
graph twoway connected B Q, msymbol(none) legend(off)
 graphregion(color(white)) yline(-5540, lpattern
 (longdash)) lwidth(medthick) xtitle("Quantiles of
 salary") ytitle(Male-female differential ($)) ||
 connected ciplus Q, msymbol(none) lpattern(dash) ||
 connected cineg Q, msymbol(none) lpattern(dash)
graph export $figures\gender.eps, replace
!epstopdf "$figures\gender.eps

*** Finding optimal bandwidths for ivqte command (Table
 8.11) ***
locreg facultyunion, logit bandwidth(.2 1 .) lambda(.2
 .5 .8) continuous(citi6008) dummy(gov_cons)
locreg facultyunion, logit bandwidth(.05 .1 .15 .2 .25)
 lambda(.05 .1 .15 .2 .25) continuous(citi6008)
 dummy(gov_cons)
locreg facultyunion, logit bandwidth(.06 .08 .1 .12)
 lambda(.01 .02 .03 .04 .05) continuous(citi6008)
 dummy(gov_cons)
locreg facultyunion, logit bandwidth(.1) lambda(0 .0025
 .005 .0075 .01) continuous(citi6008) dummy(gov_cons)

*** IV QR estimates for Table 8.12 **
foreach i in 10 25 50 75 90
ivqte basesalary (facultyunion = statelaws) , variance
 quantiles(.'i') continuous(citi6008) dummy(gov_cons)
```

```
foreach i in 10 25 50 75 90
ivqte basesalary (facultyunion = statelaws) , variance
 quantiles(.'i') continuous(citi6008) dummy(gov_cons)
 bandwidth(.1) lambda(0)
```

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Chapter 9
Academic Capitalism and (Secondary) Academic Labor Markets: Negotiating a New Academy and Research Agenda

Gary Rhoades and Blanca M. Torres-Olave

Academic labor markets, like all markets, are socially structured. They are the product of social organization, they express and enhance social stratification, and they are reproduced and renegotiated through ongoing social action. In this chapter, after reviewing the classic literature on the subject, we focus on three aspects of academic labor markets in the U.S. that should be explored: the rise of "academic capitalism" (Slaughter & Leslie, 1997; Slaughter & Rhoades, 2004) in re-shaping academic institutions; the re-structuring of academic labor and members of the academic workforce as "managed professionals" (Rhoades, 1998a); and the efforts of organizing professionals to negotiate a new academy. The backdrop of our review and analysis is the restructuring of the larger post-industrial economy and work, with the attendant labor activism surrounding that, as well as Aronowitz (2001) view that the "last good job in America" is disappearing.

To underscore the prominence of the above patterns of social organization, we explore them not just generally but also in the particular contexts of STEM (Science, Technology, Engineering, and Math) fields, and of the growth categories of "secondary labor markets" (Feldman, 2006; Kunda, Barley, & Evans, 2002; Tilly, 1992) of academic employees—adjunct faculty and postdoctoral researchers—and the union organizing efforts taking place in these employment sectors. The position

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of these members of the academic workforce reflect key features of secondary labor markets, which are evident in the larger service economy as well, with relatively low wages, temporary patterns of employment, and limited security and benefits. In the process, we map out an agenda for future research on academic labor markets. For despite the significance of a "new faculty majority" (Kezar, 2012) in the instructional workforce, and of postdocs in academe's STEM research workforce, we know little about these labor markets in their own right and in relation to the once dominant "primary labor market" for full-time, tenure-stream faculty.

In the above regards, our framing of academic labor markets and of future research on them, reflect the combined sociological and economic lenses utilized and advocated in Breneman and Youn's (1988) classic, *Academic labor markets and careers*. From the origins of sociological status attainment research and the human capital theory of economists, the edited volume features work that captures the focus of structural sociology on the social organization of markets, and the institutional focus of economists on multiple, overlapping, and at the same time segmented labor markets. Thus, we consider the structures and institutional arrangements that surround the re-organization and stratification of academic labor markets, which is reflected in the rise and increasing dominance of secondary labor markets in the core citadels of academic prestige—the instructional workforce of private colleges and universities, and the STEM research workforce of research universities. Again, this maps on to developments in the larger workforce as the country shifts from an industrial to a post-industrial, service centered economy.

At the same time, we provide an underlying consideration of the geographic dimensions of academic labor markets that runs throughout the literature. That takes us below national academic labor markets to the more local markets for faculty in part-time positions and beyond them to the more international markets for postdocs. Doing so raises interesting questions from a "glonacal" heuristic about the intersections within and the interactions among academic labor markets at global, national, and local levels (Marginson & Rhoades, 2002).

The chapter is organized around six sections. First, the literature on academic labor markets is reviewed, from the classic studies of decades dating back to the 1950s up to the present with particular consideration of the conceptual underpinnings of this work. Second, the concept of secondary labor markets is explored in the context of STEM fields and employment in the broad economy, setting the stage for exploring patterns of social organization in academe that surround the decline of primary and rise of secondary labor markets. Third, we consider three thematic developments that shape academic labor markets, devoting a section to each: the restructuring of U.S. higher education with the emergence and prevalence of academic capitalism; the restructuring of academic work in terms of increasingly managed professionals, with a particular focus on part-time faculty and on unionized professors, who constitute over one-quarter of the academic workforce; and the efforts of organizing professionals to negotiate a new academy. In addressing the latter development, we speak particularly to cases of organizing members of the academic workforce in two secondary labor markets. Finally, reviewing the implications of the preceding sections, we map out a research agenda on academic labor markets.

Academic Labor Markets: From the Classics to. . .

From the late 1950s to the late 1990s, each decade has produced classic studies of academic labor markets. Such classics have reflected the defining policy problems of the day. Sometimes they have also defined the policy research in the coming years. And each has employed either/both sociological or economic conceptual frames in studying and characterizing academic labor markets. After reviewing this literature, and the main conceptual themes that can be developed from it, literature from the 2000s is reviewed.

In the late 1950s one of the most influential sociological studies of the national academic labor market was published. It is most useful for what it revealed about the workings and values of "*the academic marketplace*" for faculty in elite universities. But Caplow and McGee's (1958) analysis also spoke to features as well as foibles of a national marketplace for academics. That analytical focus on a nationally competitive academic marketplace of individual candidates and employing universities is at the heart of research on academic labor markets in subsequent decades, up to the present.

Many of the practices that defined the academic marketplace over 50 years ago are present today. For instance, despite the significance of merit-based factors in faculty recruitment, Caplow and McGee revealed the equally significant role of "attractiveness" in terms of being desired and recruited by peer or aspirational peer institutions. A candidate's value in the marketplace is a function not just of their quality, productivity, and individual characteristics, but also of the extent to which competitor departments and institutions want them. That aspect of the academic marketplace persists. It is evident in the practice of providing faculty with significant raises to "retain" them if and when they get an offer from another institution. It is not uncommon for academic administrators, whether deans or department heads, to tell tenure-stream faculty that the way they can get a significant salary increase is to get a formal offer from another, preferably equally or more prestigious institution. What is being rewarded is not loyalty to the organization, but free agency on an open, professional market.

The rise and prominence of that national academic marketplace is the focus of Jencks and Riesman's (1969) "*academic revolution.*" The story they tell is of an increasingly strong academic profession whose independence and national focus stems from the post-World War II infusion of support for academic science, as well as from major, national foundations. Part of the story is the related rise of "universalistic," "meritocratic" values that shape academic work and the academic marketplace.

> This [federal and foundation support for research] has inevitably accentuated the professional impulse to pursue exclusively meritocratic, production-oriented policies rather than responding to the parochial claims of local politicians, donors, or vigilante groups. (Jencks & Riesman, 1969, p. 162)

The word choice (e.g., vigilante) in the above quote makes almost comically clear the authors' preference for "cosmopolitan" values and practices over local

ones (see a similar preference in Gouldner's 1957 classic study of locals and cosmopolitans). Indeed, much of their work addresses the value of mobility and its presumed natural linkage to educational quality. Thus, a chapter on "nationalism versus localism" opens by referring to "the rise of national meritocratic institutions." (p. 155) References throughout the book to locally oriented colleges as "separatist," "special interest," and "regressive" in their effects offers a clear portrait of preferred values, even though Jencks and Riesman speak to some positive dimensions of the localism that persists alongside the rise of a national profession. Yet despite the co-existence of these academic domains, subsequent literature on academic labor markets, has, like Caplow and McGee's (1958) study, focused on the national one, leaving the more local or regional markets relatively unexplored and invisible.

A half century later, Rhoades (2009) provided an analysis offering a historical corrective to Jencks and Riesman's account. The rise of a national professoriate can be traced back to the first half of the twentieth century, and to the work of three distinct but intersecting national entities—the Carnegie Foundation for the Advancement of Teaching, the American Association of University Professors (AAUP), and the DuPont Circle higher education associations. The Carnegie Foundation laid the foundation for a mobile professoriate by establishing the forerunner to TIAA-CREF, providing a portable retirement system that made it easier for professors to move from institution to another across state boundaries: essentially that system underwrote national mobility. Moreover, the AAUP and DuPont Circle institutional associations participated in shaping national norms of academic freedom, tenure, and shared governance that have profoundly impacted academic labor markets.

In providing this historical narrative, Rhoades (2009, p. 14) also tapped into a current critique of professors and of the academy.

> The unwitting outcome of a value system that prioritizes a "cosmopolitan" model of professionals who circulate in (inter)national labor markets has been a profession that is increasingly detached from the communities in which it is situated.

As he noted, given the contingent structure of the vast majority of the professoriate, faculty are not for the most part operating in a national labor market, particularly when it comes to faculty in part-time positions. Moreover, in terms of engagement with local communities, there is evidence as to how the academic profession is raced, classed, and gendered in its national, cosmopolitan, "universalistic" values, which, it turns out, are actually specific to a certain cultural identity and group (Baez, 2000; Rhoades, Kiyama, McCormick, & Quiroz, 2007).

The burst of faculty hiring in the 1960s, which was mirrored in several Western European systems in subsequent years, contributed to a demographic structure of the professoriate that now confronts us with huge policy challenges in re-calibrating the academic marketplace. At the time, De Francesco and Rhoades (1987) identified a demographic "bulge" in the academic profession, constituting of a middle aged "paunch" that foreshadowed a forthcoming graying of the profession. The prognosis of the analysis was that unless there were some conscious national policies aimed at rebalancing the age profile of the professoriate in the next decades, national higher

education systems would be confronted with a serious dual challenge of finding room for "new blood" in and of replacing a retiring professoriate. That is precisely what has played out in the U.S., all the more so given the elimination of a mandatory retirement age.

The demographic analysis of national data built on Allan M. Cartter's prescient analyses in the mid-1960s and 1970s of the academic labor market. Working out of an economists' consideration of supply and demand at a national level, Cartter (1965, 1966) examined the interrelationship between undergraduate enrollments, graduate enrollments, and demand for Ph.D. faculty in the academic labor market. Thus, he anticipated the baby boom bulge of the 1960s that led to demographic bulge identified by de Francesco and Rhoades in the 1980s. Cartter's work challenged the post-Sputnik growth assumptions of the day that there was great demand for ever more highly educated, scientific talent. By contrast, Cartter (1976) predicted that by the mid-1970s Ph.D. supply would exceed demand, with profound consequences for the academic labor market, a prediction that doctoral graduates of that time period found to be quite accurate.

Based on a different economic model, by the 1970s, Freeman (1971) was empirically finding precisely the shift in the academic labor market that Cartter had predicted. For instance, he traced the reversal of trends in starting salaries for Ph.D.'s in science from 1964 to 1969, when they increased annually more than 10 %, versus from 1969 to 1973, when there was a decline, with the biggest reversal in starting salaries trends found in the most elite of the scientific labor markets, in physics. The variables Freeman focused on in his human capital model included science Ph.D. output in relation to starting salaries in the labor market, baccalaureate enrollments, and previous Ph.D. cohort sizes. And his analyses led him to conclude by the 1970s that the reality was one not of pressing need for more scientific talent, but rather of "the over-educated American" (Freeman, 1976).

As we shall show, it would seem that history is repeating itself in this regard. In the section of this chapter on "Secondary STEM labor markets," there is an interesting twenty-first century analogue to supply and demand issues in the labor market generally as well as specifically to academic labor markets. For years, policymakers have worked to encourage domestic students to pursue STEM careers, just as in the post-Sputnik era there was an ever-pressing policy push to educate more scientific talent. Yet analyses of general and academic labor markets in STEM fields calls into serious question the need for such increased supply of STEM graduates (e.g., see Stephan, 2012; Teitelbaum, 2014).

Before continuing with the decade-by-decade review of the classics, though, it is useful to consider conceptual aspects of Cartter and Freeman's work as it relates to subsequent analyses of academic labor markets. In contrast to Freeman, Cartter attends less to variations by field or institutional sector than to aggregate supply and demand in terms of undergraduate and graduate enrollments. Thus, Cartter's model assumes that the Ph.D. graduates of elite institutions spread down to less elite institutions in the academic labor market. It fails to consider that there may be multiple labor markets, which structural sociologists of the 1980s and later increasingly emphasized. For example, it may be the case that the markets

for professors in research universities versus in teaching oriented institutions, and especially in community colleges, are segmented and relatively impermeable to movement across these boundaries (e.g., see Rosenfeld & Jones, 1987). Or it may be that there can be some movement from the research to the teaching career sector, but not vice versa (Parsons & Platt, 1973). In short, institutional structures matter.

In addition to segmentation by institutional sector, there may be segmentation by academic field, and Freeman's work in this regard is an improvement on Cartter's for he focuses on academic labor markets for particular fields of science. However, Freeman's human capital based economic model assumes a sort of self-correction due to changing wages: As certain fields experience a decline in starting salaries, students move into other fields. However, as with all market models there is a highly problematic assumption here of what constitutes the optimal conditions for individuals to operate in a perfect market (Leslie & Johnson, 1974)—consumers (in this case undergraduate and graduate students) with real time and anticipated market knowledge, free and open competition without institutional barriers, and students, academic departments, and employing institutions operating according to a market rationality in terms of allocating Ph.D. graduates to new jobs. To the extent that one or more of those conditions are not met, the market will not self-correct by virtue of an invisible hand.

Various structural sociologists have pointed to the significance of institutional and organizational factors that intervene to skew the functioning of the academic marketplace (see Breneman & Youn, 1988 for a discussion of this). Again, social organization matters. That can help explain why the stringent academic labor market has persisted for decades, even in the most highly invested fields, such as STEM fields.

The relatively depressed academic labor market of the 1970s and 1980s coincided with the push to diversify the academic profession, one of the topics of Finkelstein's (1984) comprehensive review of "*The American academic profession*." In reviewing factors at play in the academic marketplace, Finkelstein notes the ongoing significance of a "halo effect" attaching to the prestige of candidates' doctoral institution, beyond any measure of productivity or merit, a pattern that is part of "*Social stratification in science*" (Cole & Cole, 1973). That stratification is class based (Crane, 1969), in ways that continue throughout the academic career. So the academic marketplace is classed, and shaped by dimensions of social stratification beyond merit, Lewis (1975) creative research on letters of recommendation documented. It is experienced as such by working class academics, as evidenced in research on working class faculty's experiences (Sackrey & Ryan, 1984).

Two other key dimension of social stratification explored in Finkelstein's work are gender and ethnicity. Of course, gender can intersect with class (and ethnicity), as in the experience of working class women in the academy (see Tokarcyk & Fay, 1993). The defining work in the study of women faculty, with a chapter on academic labor markets, is Glazer-Raymo's (1999), "*Shattering myths*." In ways that mirror Cartter's demographic analyses, and that were adopted as well in Finkelstein, Seal, and Schuster's (1998) analysis of "*the new academic generation*," Glazer-Raymo tracked patterns of increased presence and attainment by women

in undergraduate and doctoral enrollments. But she then contrasted those to the continuing gendered patterns in faculty employment, by professorial rank and also stratified by institutional prestige, in which there were some gains but ongoing gaps in the translation of women's human capital into professorial employment. Subsequent studies also documented a similarly ongoing gender gap in salaries, in cohort analysis (Perna, 2001a) and in a study that factored in the structure of the domestic economy (coded as "family responsibilities") into the analysis of continued salary inequities (Perna, 2001b). Among the most creative analyses of gender's role as an institutional factor is Bellas (1994) documentation of field based effects that are a function of the percentage of women in the field, effects that impact/depress the salaries of men in those fields as well.

As with gender, academic labor markets are shaped by race/ethnicity, and arguably even more so. Yet there is far less literature on the topic. As a sign of the times and of the literature, Finkelstein's (1984) comprehensive review of the literature on minority faculty focused on black faculty, and the literature there was limited (see Moore & Wagstaff, 1974; Mommsen, 1974). Subsequently, the literature continues to be limited (for a recent edited volume on black faculty in predominantly white institutions see Christian, 2012), particularly when it comes to studies of academic labor markets. In relation to those labor markets, the most common studies are stories, narratives of how predominantly white institutions and an Anglo defined and dominated labor market is experienced by candidates and faculty of color—e.g., see Padilla and Chavez (1995), for one example regarding Native American faculty see Shotton, Lowe, and Waterman (2013), and for broader analyses and reviews of faculty of color see Bensimon and Tierney (1996) and Turner, Gonzalez, and Wood (2008). The takeaway point of this work collectively is that faculty of color experience a separate and unequal set of labor market dynamics.

By the late 1980s, then, studies made clear that higher education was characterized by segmented labor markets. The segmentation was structured not only by organizational sector and by field, but also by gender (and race/ethnicity), by the growing intersection of science and industry, by tenure, by unionization, and by status of employment. Breneman and Youn's (1988) classic edited volume addressed each of these structural dimensions of academe labor markets. For example, Hansen (1988) takes us back to merit as the defining "universalistic" value of a national academe identified by Jencks and Riesman, and explores the ways in which it plays out in teaching versus research oriented institutions, and in the collective bargaining sector (a decade later, Rhoades (1998a) followed up on this, exploring the extent to which merit, market, and equity provisions are found in collective bargaining agreements, noting the widespread presence of merit and market provisions). In other words, he considers institutional factors that shape the academic labor market.

Up to the 1980s, the vast majority of scholarship on faculty focused on full-time, tenure stream faculty. That was particularly true of academic labor market research. And it continues to be the case up to the present. Yet, two chapters in Breneman and Youn's volume broke new ground. One addressed the relationship and movement between academic and other labor markets ("exit and re-entry in

higher education"), finding that faculty off the tenure track were more likely to move outside of academe (Rosenfeld & Jones, 1988). Similarly, Tuckman and Pickerill (1988) provide a taxonomy of types of part-time faculty employment, connecting these to different dynamics in what are segmented labor markets. They offer an insightful analysis of the ways in which the labor markets of part-time faculty are distinct from and consistent with secondary labor markets, a key point we explore later in our chapter here with a section on secondary labor markets in STEM fields. And bringing us back to the ways in academic labor markets generally are stratified by gender, Tuckman and Pickerill document the disproportionate growth of part-time-faculty who are women.

The two major empirical studies of faculty in the 1980s reflected the above themes, as well as the ongoing limited consideration of faculty off the tenure track. Clark's (1987) study of "*academic life*" explored the deep differences in work, authority, and values that are structured by discipline and institutional type, though he focused exclusively on tenure stream faculty (two decades later, Hermanowicz, 2009, similarly examined the distinctive contexts of institutional sectors on academic work). Similarly, Bowen and Schuster's (1986) call to arms about "*a national resource imperiled*," concentrates on tenure stream faculty, analyzing demographic patterns consistent with the sort of focus embedded in Cartter's work, along with a consideration of the flows of talent into and out of academe. Only a few pages are devoted to part-time faculty, who despite their growth in numbers are seen as "marginal faculty," with the authors suggesting that there should be "an orderly but partial retreat from the practice of employing part-timers." (Bowen & Schuster, 1986, p. 64). Interestingly, the sources of the tenure stream professoriate being "imperiled" are believed to stem from declining enrollments and tight finances, not from growing contingency in the academic core.

In the late 1990s that had changed. Another dimension of structural change was explored by Finkelstein et al. (1998), who adopted a generational approach to the faculty. They found some fundamental gender, ethnicity, and nation of origin differences in the faculty when comparing senior to more junior cohorts, tracing the growth of a more demographically diverse faculty. Part-time faculty were not considered in the study, nor were "non-core full-time faculty." The authors chose to concentrate, as did Bowen and Schuster, on what they viewed as the "core" tenure stream faculty.

In a subsequent volume, Schuster and Finkelstein (2006) follow up on their earlier cohort analysis to address the changing structure of academic employment, on the rising numbers and proportions of faculty off the tenure track. Addressing what they term a "revolution in academic appointments," they track hiring cohorts in terms of the hiring of full-time faculty on and off the tenure track. In doing so, they concentrate on a newly considered category of contingent faculty employment, the full-time non tenure-track faculty. What they find is that in the most recent cohort of hires more full-time faculty were hired off than on the tenure track. Thus, they identify, in a large scale demographic analysis, the "*restructuring of academic work and careers*."

Alongside the heightened and multi-segmented stratification of faculty by status of employment, by the 1990s, there was sharply heightened stratification by field. That was true in academe generally, and although the dispersion for tenure stream faculty was somewhat less in unionized institutions, the stratification was still significant (Lee, 1995; Rhoades, 1998a). In effect, there are multiple, segmented labor markets in academe, with the more well paid fields experiencing a "Matthew effect" of the rich getting richer, mirroring the pattern of the broader economy.

A further dimension of salary stratification is between public and private doctoral and research universities. In a longitudinal analysis, Alexander (2001, p. 120) found:

> Since 1980 average faculty disparities between comparable public and private universities substantially expanded, favoring private university faculty at all academic levels. The findings also indicate that these disparities continue to increase and show no signs of leveling off in the near future.

This represents a significant change in the academic labor market. It's not exactly segmentation, as with organizational sector and field, but it represents a distinctive and growing dynamic in shaping market behaviors. Moreover, as Alexander rightly points out, part of the challenge in competing for talent is that there is an international marketplace of candidates, particularly for the research universities. The geography of academic labor markets, then, is becoming at one and the same time more differentiated and global.

In the 2000s, several literature reviews of the academic profession foreground broader trends in the national and global economy and society as ways of conceptually framing developments in the academic profession and academic labor markets. That framing is also informed by drawing on neo-Weberian and post-Marxist sociological theory of academic capitalism regarding the intersection between the academy and the larger society. Two of the dominant societal trends that are identified as implication the academic profession and academic labor markets are marketization and globalization. For example, invoking dimensions of academic capitalism (Slaughter & Rhoades, 2004), Rhoades (2007) identified changes in the intersection between public and private sectors in society more broadly, evident as well in the market behaviors of academics and academic institutions. It makes sense in this context to relate these to changing patterns of work in the academic profession, for instance, in the casualization of labor, the increase of part-time, contingent work, as well as in patterns of unionization in response to that. So, too, globalization has been identified as a factor that should be considered in understanding the work and flows of academics and labor markets (Lee, Cheslock, Maldonado-Maldonado, & Rhoades, 2005; Rhoades, 2007). In an increasingly global world, academics are global workers who are part of global academic labor markets that are influenced by global labor markets beyond academe.

The subsequent sections of this chapter are organized around several of the above considerations. We first go beyond the boundaries of academe to understand developments impacting academic labor markets, exploring secondary labor markets in STEM fields generally. We then turn to developments of academic capitalism, to the restructuring of managed professionals and the labor markets of

unionized academics, and to the organizing efforts of academics to collectively re-shape academic labor markets. In the case of the latter, we particularly examine the secondary and international labor market for and organizing activities of academic postdocs in science as well as the multi-institutional, metropolitan labor market for part-time faculty in private colleges and universities evident in these academic workers' efforts to organize metropolitan wide unions as a way of influencing and enhancing their place in these academic labor markets.

Stem Secondary Labor Markets

Over the past several decades, no fields of academe have received greater federal investment that have fields in Science, Technology, Math, and Engineering, so-called STEM fields. The policy push to encourage more domestic students into STEM fields has continued throughout the Great Recession. Fifty years after Sputnik and policymakers' subsequent push to educate more scientific talent feels in some ways like déjà vu all over again. Just as the demographic studies of Allan M. Cartter and the human capital studies of Richard Freeman called into question the need for more highly educated talent, not just in academe but also beyond, recent research is raising those same questions today (see Teitelbaum, 2014; Torres-Olave, 2013).

In this section of the chapter, we explore the extent to which "secondary labor markets" (with lower wages, less job security, and limited to no benefits) are present in STEM fields and occupations. We focus on patterns in the broader economy, seeing these as connected to patterns in academic labor markets. That sets the stage for later section of the chapter in which we examine the changes in and organizing activities of two sectors of the academic workforce with a paradoxical combination of much revenue and much low-wage, contingent employment—postdoctoral researchers in research universities, and adjunct instructional faculty in private colleges and universities.

A striking paradox of the current policy climate surrounding Science, Technology, Engineering, and Math (STEM) in the US it that is driven by both unwarranted alarm and unfounded optimism. A plethora of briefs, reports, and white papers sound the alarm about the country's eroding leadership position in regards to scientific and technological development (American Electronics Association, 2005; National Academy of Science, 2007; National Science Board, 2010, 2012; National Summit on Competitiveness, 2005). A frequent theme in these reports is that the U.S. is preparing too few domestic scientists and engineers to meet economic needs and remain competitive in a globalized economy. At the same time, there is much emphasis on the ways in which competition from abroad—especially from China and India—is increasing, posing a serious threat to U.S. national security and economic predominance.

The tone in the opening paragraphs of most such policy documents establishes the situation's urgency, as in the introduction to the Federal Coordination in STEM Education (FC-STEM) Task Force's 5-Year Strategic Plan:

> [T]he United States confronts a fiercely competitive international marketplace where the advantage goes to companies that are the first to invent and produce innovative products. Inadequacies in education pathways leading to STEM degrees and into the workforce amplify concerns that the United States is failing to keep pace with its international competitors in producing a workforce with the necessary skills and knowledge to advance STEM fields. (National Science and Technology Council, 2013, p. 1)

In response to the perceived threat to the nation's scientific and technological competitiveness, considerable public investment has been made in STEM fields. For example, in January 2011, President Obama signed the America COMPETES Reauthorization Act of 2010 (H.R. 5116—America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science), legislation advancing U.S. competitiveness in the critical areas of science, technology, and education. The legislation authorized the appropriation of $5.5 billion from 2011 to 2015 for education and human resources programs administered by the National Science Foundation. In 2010, those programs received an appropriation of $873 million to support and expand information regarding STEM workforce and education (Congressional Budget Office, 2010). So, too, in response to the idea that the U.S. is preparing too few scientists and engineers, there have been repeated calls to upgrade science and math education at the K-12 level, improve access to university degrees in science and engineering, and increase the number of U.S. citizens in graduate STEM programs (American Electronics Association, 2005; Jackson, 2002 Page: 21; National Academy of Science, 2007; National Commission on Mathematics and Science Teaching for the 21st Century, 2000; National Science and Technology Council, 2013; National Summit on Competitiveness, 2005).

On the one hand, the alarm evident in the STEM policy discourse is understandable given the major role that science and technology play in the national economy. Although the science and engineering workforce makes up only about 6 % of the total U.S. civilian labor force (Cover, Jones, & Watson, 2011), its impact on society is disproportionate to its size because of its contribution to economic growth and technological innovation. Since the 1950s, occupations in science, technology, engineering and math (STEM) fields have played an instrumental role in scientific research and development, the development of new products, and the generation of technological progress. Indeed, the size of the STEM labor force grew dramatically in the second half of the twentieth century. From 1950 to 2007, employment in science and engineering occupations in the U.S. increased at an average annual growth rate of 6.2 % (National Science Board, 2010). This sustained growth greatly exceeded the 1.6 % average growth rate for the total workforce in the same period.

On the other hand, such growth may be at the root of the optimism running parallel to the apprehensive discourse in so much STEM policy. Moreover, STEM employment is widely considered to be amongst the most desirable and advantageous sectors in the labor market. Although some differences exist by field

of expertise, STEM occupations are by and large high-paying occupations. The average annual wage for all STEM occupations was \$77,880 in May 2009 (Cover et al., 2011), compared to the \$45,559 annual average for the entire population (U.S. Bureau of Labor Statistics, 2009). Likewise, unemployment in science and engineering occupations has been low when compared to the overall U.S. workforce. In the 22-year period from 1983 to 2004, the unemployment rate for all individuals in science and engineering occupations ranged from a low of 1.4 % in 1999 to a high of 4.6 % in 2003. In contrast, the unemployment rate for the entire U.S. workforce ranged from 3.9 to 9.9 % in the same period (National Science Board, 2006). Employment rates generally increase with educational level and are highest for doctoral graduates (Auriol, 2010) and professional degree holders (Mullin, 2011).

Although it may seem hard not to be sanguine about the future for STEM graduates, and not to urge ever more students into these fields, there is a parallel to the rush to develop scientific talent in the post-Sputnik era noted earlier in this chapter. It is important to more carefully consider and to disaggregate STEM employment. For the impact of the new economy on traditional labor relations has also been felt among the high-skills primary labor market, to which scientific and technological employees are assumed to belong.

Scholars have called attention to the corporate restructuring and the use of contingent and nonstandard work arrangements even amongst occupations traditionally associated with primary market employment (Barker & Christensen, 1998). In the U.S., some features associated with primary markets (such as internal markets and career ladders) have been altered by the ongoing restructuring initiated by large corporations. Over the past 20 years the downsizing of large companies—a main source of primary jobs—resulted in a significant erosion of job security in this segment of the labor force. Alongside this decline has been the rise of temporary or part-time labor, through a series of employment practices and technology-mediated modes of production (Tilly & Tilly, 1994).

In short, the rise of secondary labor markets has taken place in the most central and heavily resourced employment sector of the economy. Moreover, it has taken place in what would be thought to be the most advantageously positioned segments of employees in the economy, those who have been highly educated and who are in STEM fields. As we shall see, both patterns are evident in the academy, where secondary labor markets are found in the most well resourced institutions of higher education and in a highly educated workforce that includes employees with advanced degrees in STEM fields.

Precise estimates of the spread of contingent work are difficult due to the absence of longitudinal data. Nevertheless, three observations seem warranted: (1) a significant proportion of the U.S. population is employed contingently; (2) this proportion has increased over the past two decades; and (3) technicians, professionals and managers constitute a greater proportion of the contingent labor force than in the past (Barker & Christensen, 1998; Kunda et al., 2002; Luo, Mann, & Holden, 2010). Indeed, over the past two decades, temporary employment has shifted away from lower skilled and lower paying jobs to more highly skilled and higher paying occupations (Luo et al., 2010).

The rise of the temp or staffing agency is one of the strongest pieces of evidence of this shift in employment relations. In the 1980s, when labor scholars first turned their attention to contingent work, only about 6 % of the contingent workers held two or more jobs simultaneously (Tilly, 1991). For this reason, early research on contingent work focused on exclusive, "dyadic" relationships between a worker and a single employer (Feldman, 2006). However, part-time and contractual labor markets have become far more complex in recent decades. In fact, contingent work among the highly skilled is more often triadic than dyadic: It is common for engineering and information-technology contractors to be hired by a firm through an intermediary, such as staffing agency (Kunda et al., 2002).

The triadic labor relations entailed in employment through staffing agencies are a significant departure from traditional notions of the employment opportunities available to highly-skilled workers. That is especially true of those with a college education. Growth in such agencies is important because the sector is a remarkably consistent indicator of employment trends in the overall economy (Luo et al., 2010). The Bureau of Labor Statistics reports that, during the 1990–2008 period, employment in the temporary help services industry grew from 1.1 million to 2.3 million and came to include a larger share of workers than before in higher skill occupations (Henderson, 2012).

Again, as we shall see, it is worth exploring the implications of analogous patterns in academe. Employment has moved beyond the "dyadic" pattern, as members of some secondary labor markets in higher education work in more than one institution. The physical geography of the academic workforce's employment in colleges and universities is changing in ways that cannot be framed in terms of national, meritocratic labor markets.

Notably, according to the Bureau of Labor Statistics, employment in the management, scientific, and technical consulting services industry is projected to increase by 575,600 jobs, or 4.7 % annually, reaching a level of 1.6 million by 2020. That is one of the largest and fastest employment increases of all industries. Many of these new positions are expected to be on a contract basis, meaning that they can be hired temporarily and as needed, at a lower cost. Even among the elite STEM workforce, then, there is strong evidence that intermediary employment agencies are becoming more prevalent. A report by the STEM Workforce Data Project estimates that temporary staffing agencies now supply the services of more than 100,000 STEM professionals. These numbers signal a departure from the type of employment traditionally associated with STEM professions, and must be considered as part of the broader shift in high-skills employment relations. The relevance of this type of employment for STEM is further suggested by the emergence of employment services agencies specifically catered to the STEM occupations, such as Kelly Scientific Resources (KSR), a $300 million global business unit of Kelly Services, Inc.

Beginning in the 1990s, a number of contingent work researchers have stressed the need to broaden current definitions of contingent employment, in order to better represent the wide range of part-time, temporary, and contractual arrangements presently available in the labor market. Because the term "contingent employment"

includes a diverse array of work arrangement (e.g. part-timers, temps, seasonal workers, agency-hired workers, "moonlighters"), it is sometimes difficult to define it. Common to most definitions are three key elements, as summarized by Feldman (2006): (1) Contingent employment does not entail permanent positions with any one employer or client; (2) it consists of less than 35 h per week with any one employer; and (3) it is limited in duration either by contract specifications or by the duration of a specific task or project.

Although contingent work is considered a secondary labor market, the evidence from studies of highly skilled contingent workers suggests that contingent employment seems to have its own primary and secondary sectors. Further, the differences within the low-skill and high-skill employment population can be just as pronounced and socially significant as the differences between contingent and full-time employees.

Thus, in a qualitative study of managers, union officials, and workers in the retail and insurance industries, Tilly (1992) found evidence of dualism in part-time employment, in that the characteristics of part-time work differed significantly from one industry to the other. Among insurance companies, for example, Tilly found a model of part-time work that exhibited typical characteristics of a primary labor market: high compensation levels, including benefits for employees working above some cutoff hourly range, and access to promotion ladders (in most cases, the part-timers were originally full-time employees who negotiated part-time arrangements on a one-to-one basis with the employee). Such part-time positions were designed by employers to retain or attract valued workers (typically women with young children) who, for various reasons, preferred to work part-time, and were concentrated in technical and professional occupations entailing high levels of skill, training, and responsibility. By contrast, in the retail industry, part-time employment retained the characteristics of secondary employment hypothesized by segmentation theory: lower levels of compensation, high turnover rates, and few prospects of advancement compared to full-time employment in that workplace.

Research by Kunda et al. (2002) reveals further layers to the experiences of highly-skilled contingent workers and how they may differ from their low-skill counterparts. The authors examined the experiences of 52 highly skilled contractors in engineering and information-technology occupations. This study is one of a handful to specifically analyze contingent workers in STEM or STEM-related occupations. The authors found that, in most cases, the interviewees found contracting preferable to permanent employment. Among the advantages of contractual work, the interviewees mentioned higher earnings than in full-time employment, a greater sense of autonomy, the opportunity to develop new skills as they moved from one project to the next, and having greater control over their own time. The participants also talked about the downsides of contracting: a perpetual status as outsiders within the organization; hidden costs like having to provide for their own benefits, (including pension funds and health insurance), higher taxes, and a lack of stock options; and the potential irregularity of contractual income.

Based on these findings, Kunda et al. (2002) conclude that the experience of contractors is neither as grim as the critics of contingent work fear, nor as rosy as its

advocates promise. The experience of these particular technical contractors diverged significantly from the characteristics typically associated with the secondary labor market. In exploring contingent segments of the STEM workforce, then, these are important caveats. It is important to be sensitive to the heterogeneity inherent in contingent employment, and open to the possibility that the reality of contingent employment for at least some parts of the highly skilled STEM population may be closer to that of the traditional definition of primary labor markets.

As we return to considering academic labor markets, it is worth keeping in mind the segmentation of these markets beyond simply primary and secondary ones. We might also expect to find considerable segmentation within the secondary labor markets, just as the literature review of classic studies of academic labor markets established the significant segmentation among and heightened stratification within primary academic labor markets.

Academic Capitalism & Academic Labor Markets

The rise of academic capitalism has entailed the re-structuring of higher education institutions and systems, which in turn has involved re-shaping academic labor markets. For the changing form and conditions of those labor markets is connected to the changing focus and character of colleges, universities, and of the knowledge/learning policy regime in which they are embedded. Along similar lines, in introducing their classic study of academic labor markets, Breneman and Youn (1988, p. 2) wrote:

> The essays included in this book, therefore, argue that the nature of labor market outcomes may be explained by the nature of academic organizations. They find basic problems of academic markets are largely rooted in the structure of American higher education.

This section of the chapter, then, examines the fundamental components of academic capitalism, the ways in which it has been studied in relation to academic labor, and what such studies have overlooked in terms of academic labor markets. Our discussion is organized around three components of academic capitalism: the changing values and logic of the ascendant knowledge/learning regime that shape the primary academic labor market of tenure stream faculty, particularly in STEM fields; the rise of a secondary labor market of postdoctoral researchers in STEM fields in the most heavily resourced institutions in the academy—research universities; and the rise of non-faculty professionals, what have been called managerial professionals (Rhoades, 1998b), as part of enhanced managerial capacity.

What is most obvious about academic capitalism as a concept, and what is most picked up in citations and applications of that concept is that it involves increased market and market-like entrepreneurial behaviors of colleges and universities, and of academics. That is understandable given the terminology, and given our current sense of being in a highly revenue constrained political environment. Yet the

fundamental components of academic capitalism are grounded in organizational and professional developments that profoundly implicate academic labor markets. For academic capitalism, as with the general nature of capitalism, reshapes the production of work and the terms of labor. It is a knowledge/learning regime that posits organizational restructuring in ways that create a different set of norms and structures in the primary academic marketplace of tenure stream faculty. More than that, it involves expanding secondary sectors of academic employment.

Reorienting and Restructuring the Primary Academic Labor Market Academic capitalism involves new circuits of knowledge production and dissemination that are based on a distinctive logic of the marketplace. More than just an interest in revenue enhancement, it is a logic about what sort of work is valued, what is seen as less relevant or productive, and what is seen as problematic. The valuation is all about supporting the private sector of the economy (including but more than just about generating revenue), which makes academic work that is orthogonal to or critical of practices in the private sector of the economy undesirable.

On a practical level, in terms of practices found in the academic labor market, it should be evident in this context that faculty with grant monies and/or with success in transferring and commercializing knowledge from the lab to the private sector marketplace will command more interest in the academic marketplace. Not long ago the Dean of one of the co-authors' college observed that if you are a full professor without grant money, even in a field like Education, you will find it harder to move, because deans will be less interested in hiring a senior faculty member who does not bring in money. Going back to Caplow and McGee's (1958) classic study, there is some change in the source of "attractiveness" to other institutions (although at that time, commanding grant monies in the sciences and social sciences from federal agencies made candidates attractive), in terms of the range of fields it applies to and of tech transfer activities being part of the equation. If that is becoming true in a field like Education, it is very much the case in STEM fields of the academy, where a restructuring of the primary academic labor market includes increased valuation of grant monies (which have long been important, since the post-World War II era), and the push to embed success in technology transfer into reward systems such as promotion and tenure processes.

On a conceptual level, academic capitalism's influence is best understood and framed in the context of what sets of interests govern and are served by the prevailing configuration of academic work and markets. In a classic essay 40 years ago, "Development of the sociology of higher education," Clark (1973) organized much of his discussion around three major sociological theories of society at the time, specified to particular conditions in higher education. One unfulfilled line of work he identified was critical, Marxist studies of power in higher education, dating back to Veblen's (1918) classic critique of business' control of "The higher learning in America," and 30 years later of Beck's (1947) comparable analysis of "Men who control our universities." As we shall play out below, such patterns of corporate control can have profound implications for the dynamics of academic labor markets.

Fast forward to today and to the heart of the prestige hierarchy in academe and society—medical schools and their faculty. It has become quite common now for tenure track research faculty in medical schools to raise a substantial portion of their regular salaries through grant activity, which most typically involves running clinical trials on various drugs, supported by NIH grants or by grants from the pharmaceutical companies. A comparable grant and revenue generating pressure in terms of faculty raising their own salaries is also found in many Public Health departments in research universities, particularly top ones such as Johns Hopkins University's Bloomberg School of Public Health. In this context, tenure is a placeholder, but not a full salary. And the academic labor market is shaped by the private sector markets (for drugs and tests), translated into public sector and industry funded research on pharmaceutical drugs and tests.

By far the most common application of academic capitalism in studying faculty is to focus on professors and graduate students in science departments to explore their reactions and accommodation to the academic capitalism knowledge/learning regime. Two scholars have been particularly active in exploring the extent to which academic capitalist values have permeated science departments in research universities. For example, several articles focus on the socialization into a new academic marketplace in which academic capitalist values and logics of commercialization are prominent (see Mendoza, 2007; Szelenyi, 2013; Szelenyi & Bresonis, 2014). Such work is evident in Scandanavia as well, exploring the "moral order" of what is learned in different academic disciplines and how that is changing in the context of academic capitalism (Ylijoki, 2000). In addition, there are several studies of departments that are "receptive" to academic capitalism (Mendoza, 2012), of "strategic balancing" of the tensions in departments surrounding commercialization (Mendoza, Kuntz, & Berger, 2012), of the relationship between faculty funding and work (Szelenyi & Goldberg, 2011), and of the ways in which academic departments are "entangled in academic capitalism" (Ylijoki, 2003). In each of these sorts of studies, the research questions surround the extent to which current and future faculty are adapting to academic capitalism.

Apropos of earlier studies of the social stratification of primary academic labor markets, it is also worth exploring not just the extent to which current faculty members are supportive of the new scheme of values and activities, but how that structure affects who is not on the faculty. Some years ago, one of the co-authors of this chapter made that observation to Pilar Mendoza, who came to the U.S. as a physics graduate student. One important question about the current culture of academic science is the effect that it has on who is recruited and who self-selects into and out of that culture. How does it shape who is not in academic science, or in academe more generally?

The above questions are important not just on an individual level, but in terms of whether they connect to patterns of access that define populations of academics, for instance, when there are gendered patterns. Some work in higher education, which applies to academic labor markets, explores the intersection between academic capitalism and gender, exploring the differential and adverse effects of the former on the latter (Metcalfe & Slaughter, 2008, 2011).

Questions as to who fits, and what sorts of work fit within an academic capitalist knowledge/learning regime are also important in that they attach to the ability (or lack thereof) of the system to serve the public interest. One particularly compelling physical example of the unequal relations involved is partnership between a Finnish university and Nokia: in a building that contains employees of the business on one side and those of the university on the other, with a connecting passage and door inbetween, it is telling that the door is open in to the university section but locked in the other direction (Valimaa, 2004). That is a physical metaphor for who has access to what, and for who is serving whom. The question is the extent to which, if at all, it is also a metaphor for mobility in labor markets.

Finally, by way of new academic circuitry, there is a restructuring of the basic units of production in which academic work is done. There are many conceptualizations of these changes, from a triple helix (Etzkowitz, 2008), to a new mode of producing knowledge (Gibbons et al., 1994), to a focus on the increasing importance of centers and institutes, (university/industry partnerships) relative to discipline based academic departments (Geiger, 1993). As in the case of academic capitalism, such changes in the social organization of academe raise the question of what this means for academic labor markets.

Expanding a Secondary STEM Labor Market in Postdoc Appointments
Another aspect of the new circuitry of academic capitalism is a substantial expansion in and shift in the terms surrounding existing forms of employment, as with postdoctoral researchers. This sector of the academic workforce has shifted from being an apprenticeship step on the career ladder to primary labor market employment as a tenure track professor to being multiple, extended postdocs, often with no next step on the ladder, essentially permdocs.

Postdoctoral employment constitutes a growing share of the academic workforce. It is particularly prominent in the most resourced and prestigious sectors of higher education, in STEM fields in research universities. The "postdoc" is "a temporary position awarded in academe, industry, a nonprofit organization, or government primarily for gaining additional education and training in research" (Hoffer, Grigorian, & Hedberg, 2008). Although the practice of providing young scientists apprentice-like positions at the end of their formal education dates back to the late nineteenth century, postdocs were relatively rare before the 1950s (Davis, 2005). From the 1950s to 1970s, the number of postdoctoral positions in the U.S. grew only moderately. And at that point in time it served as a normal step on the career ladder to a tenure track appointment, one that gave the aspiring academic an advantage by virtue of additional training, professional networks, and an apprenticeship (Zumeta, 1985). It was a period of "study" on an extension of the "educational ladder."

However, in the 1980s and 1990s, postdoctoral positions experienced a rapid increase driven by economic factors, including "the burgeoning number of new Ph.D. scientists at a time when faculty positions were increasing only modestly" (Davis, 2005, p. 1). According to the NSF-NIH Survey of Graduate Students and Postdocs in Science and Engineering, in 1990 a total of 29,565 individuals were

pursuing postdocs in the U.S. By the fall of 2009 this number had nearly doubled to 57,805. Of the latter, a large majority of postdocs were in the life or health sciences (67 %), followed by close to 28.7 % in the physical sciences, engineering, math and computer sciences (NSF, 2011).

In recent years, postdocs have become increasingly common in science, health, and engineering fields in both absolute and relative terms. From 1990 to 2009, the absolute number of postdocs in STEM fields expanded significantly. In life sciences it grew from 20,207 to 38,888, and in the physical sciences from 5,592 to 7,447.

Such expansion also took place in fields where, until recently, the postdoc was much less common. According to Hoffer et al. 2008, from 2002 to 2007, U.S. doctorate recipients in the life sciences (57 %) and the physical sciences (50 %) were among the most likely to have held a postdoc, with the lowest proportions being among doctorate recipients in engineering (21 %), computer/mathematical sciences (21 %), and the social sciences (23 %). Between 1990 and 2009 the number of postdocs in engineering grew more than three times (from 1,950 to 6,390). The growth in postdoctoral positions in math and computer sciences is also remarkable, increasing almost fourfold (from 320 to 1,331) between 1990 and 2009.

A concomitant trend to the growth of postdocs is that new doctorate recipients are more likely to take postdocs than in previous doctoral cohorts. In 2006, 45 % of those earning a U.S. doctorate within the last 5 years held or had completed a postdoc (Hoffer et al., 2008). That percentage is up from 41 % in 1995.

The labor market for postdocs is an international one. In life sciences, by far the discipline with the largest number of postdocs, 50 % are foreign-born. Although the total number of postdocs in engineering and the physical sciences are much smaller, the proportion of foreign-born in these fields is even higher: 63 % and 62 %, respectively (National Science Foundation WebCASPAR, 2011). In Math and Computer Science the number is 50.8 %, and in Geosciences, 49.9 %.

Essentially, postdocs are an important international labor pool and gateway of talent. Indeed, Diaz-Briquets and Cheney (2003, p. 430) show that the NIH's foreign post-doctoral program operates as a "seamless and efficient recruitment mechanism whereby American academe and industry can, at minimal cost, indirectly evaluate, select and hire biomedical scientists from a large and constantly-renewing pool" of foreign, talented candidates. Indeed, for many international researchers coming to the U.S., doing a postdoc can be part of a long-term migration process (Cantwell, 2009).

Yet, the significant growth of postdoctoral positions in the U.S. has drawn concern among scholars and policymakers. A number of reports in the late 1990s and early 2000s called attention to important workplace issues faced by postdocs (Association of American Universities, 1998; COSEPUP, 2000; Davis, 2005). One of the most pressing concerns is the dearth of positions available to eligible postdocs seeking to pursue a career in academia. Highly-trained postdocs are willing to work for modest wages in the understanding that the postdoc will eventually lead to a full-time position at a university—particularly tenure track faculty positions at research institutions (Corley & Sabharwal, 2007; Davis, 2005).

However, the growth in the number of science and engineering postdocs over the past decade has outstripped the rate of increase in the number of full-time science and engineering faculty positions (Davis, 2005). Indeed, by 2005, there was about one postdoc for every three STEM faculty members in the U.S. (Cantwell & Lee, 2010). The rise in postdocs reflects not just a change in how scientists are trained, it also involves a restructuring of academic institutions and work in the core of the academy, STEM fields in well resourced research universities. At the same time this secondary labor market is growing, there is an increasingly softer job market for Ph.D.s in general, especially in the sciences (Zusman, 2005). Indeed, a number of scholars have raised concerns about the ability of the labor market to absorb the growing numbers of doctorates (Lowell & Salzman, 2007; Stephan, 2012; Teitelbaum, 2003, 2014).

Beyond the academic employment prospects of postdocs in STEM fields, other scholars have raised concerns about the working conditions in postdoctoral programs. In this respect, Cantwell (2009) posits that postdocs are in some ways the research equivalent to adjunct instructional faculty. Although most postdocs seek permanent employment, their working conditions are not secure; rather they are contingently employed, much like adjunct faculty. They are in a secondary labor market. In some fields, the postdoc is becoming a form of "permanently temporary" employment. Significant proportions of postdocs in the life sciences (17 %) and physical sciences (12 %) report holding multiple, usually successive, postdoctoral appointments (Hoffer et al., 2008). More than that, the working conditions of many postdocs are exploitative, in that "postdocs are highly productive in comparison to their level of compensation and prospects for advancement" (Cantwell, p. 212). In the case of international postdocs, the potential for exploitation is compounded with possible issues of stratification and discrimination that mirror earlier studies of academics (Cantwell & Lee, 2010), with an international twist.

The latter pattern speaks to a key dimension of labor segmentation theory (LMS), that one of the aspects of emerging and growing secondary labor markets is the tendency of certain social groups—namely ethnic minorities, immigrants, and women—to be disproportionally concentrated in secondary jobs. Early LMS work showed that the persistent labor marginalization of these populations was not the result of a lack of human capital, as predicted by neoclassical economy models, but could rather be ascribed to overt and covert discriminatory mechanisms. Later LMS scholars like Hudson (2007) argue that, as gender and racial discrimination become socially and legally discouraged, nonstandard and noncitizen labor are two of the most common ways to satisfy the demand for low-wage, low cost workers in the new economy. It remains a question as to the extent to which this pattern applies to postdocs, as highly skilled STEM workers, but the findings of Cantwell and Lee (2010) in this regard suggest it may.

Moreover, the internationalization of this secondary labor market might have adverse effects on this sector of employment more broadly. For example, some scholars have argued that the growth of international graduate students and postdocs has had the unintended effect of steering domestic talent away from careers in science and engineering (Borjas, 2006; North, 1995; Zumeta & Raveling, 2003).

Others have suggested in a variation of the "displacement perspective" that immigrant scientists "occupy positions (from fellowships to faculty appointments) that might otherwise be taken by women and native-born minorities, thus slowing the entry of women and minority members into science" (Xie, Goyette, & Shauman, 2003, p. 192). The evidence for the displacement perspective is mixed, when it comes to the overall workforce. However, Borjas (2006) provides evidence that increases in the number of foreign-born doctorates have a significant adverse effect on the earnings of competing workers. Carnevale, Smith, and Melton (2011) counter in a way that confirms the significance of this secondary STEM labor market in academe, arguing that much of the adverse effect can be attributed to the increased prevalence of low-pay postdocs, of whom a considerable proportion are foreign born Ph.D.s.

Expanding a Non-faculty Sector of Professional Employment At the core of academic capitalism is organizational changes that involve enhanced managerial capacity. One of the most prominent of these is the disproportionate growth of what have been called "managerial professionals." (Rhoades, 1998b) Employees in this category of professional employment are neither faculty nor are they senior administrators. They have many of the trappings of professions, but they are more closely controlled by managers than are faculty, lacking, for instance, important employment structures that contribute to independence, such as due process and tenure as well as academic freedom.

Although managerial professionals do not constitute a majority of professionals on campus, they are by far the fastest growing category of professional employee. The growth of such professions, in entrepreneurial, quality control, and student service realms (see Rhoades & Sporn, 2002) can be seen in contrast to and partly as contributing to the relative decline in the proportion of tenure stream faculty. Indeed, overall, faculty now account for only a little over half of professional employees on campus. Simply in terms of employment numbers the growth of these professionals not only enhances managerial capacity, it also limits the capacity of the professoriate, particularly as a primary labor market, to expand or even to maintain its prominence.

Beyond the simple demographics and numbers, though, the importance of managerial professionals is that they at some level and in some realms compete with faculty for control and production of academic work. The embedded competition over professional domain is evident in the narratives and stories that surround the rise and justify the increased presence of managerial professionals, storylines that are directly linked to enhanced managerial capacity and reduced professorial influence. For example, in the case of student affairs and academic advising, there is a narrative that new professions emerged to do this work because either the faculty were relatively uninterested or unprepared to do the work, partly due to a faculty focus on research and career, and partly due to a lack of expertise. Similarly, in the area of teaching, and of learning and instructional technologies, there is an ongoing negotiation by rising professions in these realms to lay claim to educational space that formerly was controlled by faculty (Rhoades, 2011). And comparable

professional discourses and negotiations are evident in offices of instructional assessment and quality enhancement, which have emerged with increasing demands for accountability in higher education. In other words, the rise of managerial professionals, as part of enhanced managerial capacity, has implications not just in terms of the balance of hiring (in the faculty or in the support professions), but also in terms of claims of professional domain in the work of the academy (see Abbott, 1988, for a discussion of these concepts in a broader analysis of profession). That is another institutional factor that shapes academic labor markets.

To sum up this section of the chapter, then, academic capitalism has led to a restructuring of academic institutions in ways that directly impact academic labor markets. With the ascendance of this knowledge/learning regime has come change in what is valued in primary labor market, expansion of a secondary labor market in the core of the academy, STEM fields in research universities, and a decline in the primary labor market of tenure stream faculty.

Restructuring the Labor Markets of Managed, Unionized Professionals

Part of the restructuring of academic institutions, with the ascendance of academic capitalism, is the restructuring of the academic workforce, such that by the 1990s it made sense to talk about professors as increasingly "managed professionals" (Rhoades, 1998a). That is a considerable conceptual distance from "the academic revolution" identified by Jencks and Riesman (1969), referring the rise of a national, powerful academic profession.

As noted in the literature review of the classics, much changed in higher education in the 1960s, 1970s, and 1980s. By the middle of the 1980s, Bowen and Schuster (1986) were writing of "a national resource imperiled," in a decade with a policy environment characterized in one study as one of "*reduction, reallocation, and retrenchment*" (Mortimer & Tierney, 1979). And that was in reference to the "core" segment of the academic workforce—tenure track faculty.

During this same time period multiple secondary labor markets arose in higher education. As detailed in the previous section of this chapter, one such segment was postdocs, who were increasingly central players in the research workforce of the nation's research universities. In the instructional workforce, as we will detail in this section, part and full-time secondary labor markets emerged as well, such that faculty in these off-the-track positions now constitute the majority of the professoriate.

A further development, articulated by a classic study in the early 1980s on "*academic strategy*" (Keller, 1983) was a "*management revolution in American higher education.*" The enhanced managerial capacity fostered by the academic capitalist knowledge/learning regime entailed not just increased numbers of managerial professionals, but also increased discretionary power for academic managers.

In a study of over 200 collective bargaining agreements defining the terms and conditions of unionized professors' work, Rhoades (1998a) analytical focus is on the balance between managerial discretion and professional autonomy. That analysis is a vehicle for detailing the restructuring of the academic profession.

The relative decline of the primary professorial labor market in academe was unintentionally captured by a scholar who convened a group of scholars in the field to present papers on the condition of contemporary academe. The title of the convening conference (which was the basis of Hermanowicz, 2011 edited volume) was, "Whither the academic profession?" During the conference, several scholars jokingly invoked the double entendre of the defining question—was the (core) profession in fact, withering?

Rising Secondary Labor Markets in Instruction Secondary markets among the professional class have been documented in the crucial contexts of STEM fields generally and in academe in the case of postdocs. The rise of contingent labor has received some attention over the past several decades, but largely with regard to instructional faculty, and especially with regard to faculty in part-time positions, though some work in the late 1990s and 2000s has focused on full-time, non tenure track faculty. The "casualization" of the instructional academic labor market (Bousquet, 2008) refers to the restructuring of tenure-track faculty jobs into non-tenure-track adjunct positions. As with postdocs, the pattern is more advanced in some fields than others, and Bousquet's field of English composition is the instructional analogue to the prominence of life sciences postdocs.

The numbers and proportion of part-time faculty have been growing for four decades. In 1970, faculty in part-time positions accounted for less than one-fourth (22.1 %) of faculty in American higher education. By the late 1990s, that proportion had more than doubled. By the time of the Great Recession the percentage had reached 49.3 % (NCES, 2012; Rhoades, 2013).

The prominence of this secondary academic labor market varies by organizational sector. Historically, public 4-year institutions had the lowest proportion (35.7 %) of part-time staff among all institutional types; there were less than one-third of the faculty in this sector by the 1990s who were part-time, but that percentage has increased by nearly 10 %. At private (not-for-profit) colleges and universities just over half the faculty are in part-time positions. And in community colleges 70 % of the faculty are part-time. The percentage is even higher (85.4 %) at for-profit universities. Without exception, the number of part-time faculty increased between 2003 and 2009 at all institutional types in both the public and private sectors (Knapp, Kelly-Reid, & Ginder, 2010). Indeed, the growth of this sector of academics has led scholars like Gary Rhoades, former Secretary General of the American Association of University Professors to assert that "[T]he future of the academic profession is connected to the working conditions of contingent faculty" (Rhoades, 2008, p. 15).

The part-time faculty labor market is also segmented by academic field. According to the National Study of Postsecondary Faculty (NSOPF) survey of 2003–2004, the latest year for which data is available (the federal government discontinued

this survey, which had been run in 1987–1988, 1992–1993, 1998–1999, and 2003–2004), reveals that the proportions of part-time faculty differ significantly depending on academic department. Across all disciplines, faculty most likely to be working part-time in 2003 were in departments of education (56 %), fine arts (53 %), and business (51 %). In STEM fields, the proportion of part-time faculty tended to be smaller, yet part-time faculty still represented a considerable percentage of faculty work, consisting of another secondary STEM labor market. Across STEM fields, the faculty least likely to be part-time employees were in engineering and agriculture, but even there nearly one-third (30 %) were in part-time positions. Faculty were more likely to be working part-time in departments of social sciences (37.4 %) natural sciences (37.2 %), and health sciences (38.1 %) (NEA, 2007).

As with postdocs, there are several issues of concern regarding the use of part-time faculty, including the tenuous nature of their employment status and employment practices. But this academic literature is limited given the size of this segment of the professoriate, largely defined by a few authors in the 1970s and 1980s, and then in the 2000s. Relatively limited though it is, the literature on part-time faculty as a secondary labor market substantially predates that on postdocs. One of the earliest contributors in the 1970s was a contributor to Breneman and Youn's classic 1988 volume on segmented labor markets. Reporting data from a national survey of part-time faculty by the American Association of University Professors (AAUP), Tuckman (1978) and colleagues (Tuckman, Caldwell, & Vogler, 1978) examined academic labor market conditions, forecasting what to expect in the 1980s.

For all the rhetoric about the need for a flexible academic labor force to meet changes in course demand, part-time faculty tend to have remarkably long service records with the institutions that employ them. According to NSOPF data, full-time faculty members have only been employed only a few years more than have part-time faculty (NEA, 2007). At public 4-year institutions, full-time faculty averaged 11.7 years of service, and part-time faculty 7.3 years. The distributions of average length of service was similar at private 4-year institutions (11.5 for full-time and 7.2 for part-time faculty. In the late 1990s, Gappa and Leslie (1997) estimated that as many as 62 % of adjunct or part-time faculty worked on a semester-to-semester basis. Thus, many part-timers do not enjoy employment security; unexpected situations such as low enrollments can lead to last-minute class cancellations and therefore loss of salary (Salzman, 2000).

A situation of "just in time," and short-term hiring of part-time faculty continues to the present. A survey and report on the "back to school" hiring practices regarding part-time faculty revealed that nearly two-thirds (63 %) had less than 3 weeks notice before being assigned a class (Sweet, Maisto, Merves, & Rhoades, 2012). The educational and other costs of such uncertainty and unpredictability come through in the voices of the adjunct faculty who work with the vagaries and contingencies of a secondary academic labor market.

The secondary labor market for adjunct faculty is also one that not uncommonly involves the part-time employment of a single faculty member at multiple institutions, the "triadic" dimension of labor markets noted in an earlier section of this

chapter. The particular numbers vary by the data set in question. But it is clear that at the very least a significant minority of faculty in part-time positions teach at more than one institution.

According to the NSOPF survey, in 2003 nearly half of part-time faculty (46 %) held full-time jobs in addition to their teaching work. Additionally, "some 12 percent of part-time faculty also worked at another postsecondary institution . . . [The data suggest] that some taught full-time at another college and others taught part-time" (NEA, 2007, p. 9). A more recent survey of contingent faculty, with a smaller sample size, reported that over half of the respondents (54 %) teach at more than one college or university.

Further, a non-trivial proportion of all part-time faculty (35 %) aspire to full-time teaching positions (NEA, 2007). Yet a more recent survey (CAW, 2012), which represents the largest survey of contingent faculty in history finds a quite different pattern. Of over 10,000 respondents working in part-time faculty positions, over half (52 %) responded "definitely, yes" to a question as to whether they would accept a full-time, tenure track faculty position, and another 21.8 % said they probably would.

It would seem, then, that a reasonable working proposition is that to a considerable extent, the primary and secondary academic labor markets are significantly segmented. That is consistent with the "cumulative disadvantage" that can accrue to contingent academics, whereby many years of adjunct work experience can in fact count against those applying for full-time positions (Barker, 1998). Sustained contingent, nonranked status often results in a "second-class" stigma with very real consequences for part-timers, including professional isolation, exclusion from curricular discussions, and a general sense of "invisibility" in departmental and university life (Barker, 1998), which can contribute to a type of academic anomie. These qualitative data seem to support quantitative, survey data that are suggestive of a secondary labor market in which a significant proportion of part-time faculty are involuntarily part-time, working at more than campus, and aspiring to a full-time, tenure track positions.

The primary and secondary labor markets for faculty are not only separate and to some extent segmented career-wise, they are also quite unequal in terms of compensation. Just dealing with the issue of pay, there is a substantial gap in compensation per class taught between full- and part-time faculty. In 2003, on average for all of higher education, part-time faculty earned about $2,836 per course taught—about one-quarter of what full time faculty earned ($10,563). The differential varied according to institutional type, but, on average at all levels of higher education, part-time faculty earned about 27 % less per course than their full-time counterparts (NEA, 2007). Remarkably, that average salary is almost exactly what was found almost 10 years later in the CAW survey. The significance of this gap widens when we consider that, compared to full-time staff, part-time faculty enjoy little by way of leaves and benefits (Rhoades, 1998a). In 1993 only 17 % of part-time faculty received employer-subsidized health insurance; 20 % received employer pension contributions; for full-time faculty the proportions were 97 and 93 % (Salzman, 2000). That in itself tells one something about the nature of this secondary academic labor market.

Historically, much work on part-time faculty has developed typologies of part-time employment, even as it has called attention to often non-optimal working conditions and labor market practices. Such work in some regards reflects Tuckman and Pickerill's (1988) efforts to define types of part-time faculty according to whether teaching was their primary source of income and whether they aspired to a tenure track position. For example, that is part of what Gappa and Leslie's (1993) work addresses, the extent to which some part-time faculty are "voluntary," holding full-time jobs elsewhere, being retired, or preferring a part-time position. At the same time, there is a sense that higher education is at a "crossroads" (Gappa, 1984), and that the working conditions, including the appointment processes and predictability of the labor market for part-time faculty, should be improved.

Some of the work on part-time faculty addressed structures that affect employment markets. For example, Leslie and Ikenberry (1979) studied contract language for these faculty, in a publication of human resource officers. Similarly, Biles and Tuckman (1986) consider personnel management policies for part-time faculty. Subsequently, Rhoades (1998a), as will be discussed in more depth below, explored the changing balance between managerial discretion and professional autonomy through the vehicle of collective bargaining agreements.

More recently, a few scholars have begun to pay attention to another secondary instructional labor market of contingent faculty, that of full-time, non-tenure-track (FTNTT) faculty. Prior to the late 1990s, FTNTT faculty were not really present either in the data or in the academic literature on contingent faculty. The most obvious marker of this changing was a book entitled, "Teaching without tenure" (Baldwin & Chronister, 2001) which focused on FTNTT faculty. A decade earlier these authors had published an article on the topic as well (Chronister, Baldwin, & Bailey, 1992). The analytical focus of both studies was on policies and practices that constitute the working conditions of these contingent faculty, with implications for the academic labor market. What they found in their study of 48 public and private universities was that most such faculty are on year to year contracts; they truly are temporary, even though, as with part-time faculty, many serve in such positions for many years. Such faculty have limited due process protections in appointment and particularly in (non)renewal decisions (Rhoades, 2014). Many of these FTNTT faculty (44 %) are hired primarily to teach, especially in lower division classes. They are, in a real sense, as Baldwin and Chronister (2001, p. 3) indicate, "sub-faculty."

Arguably, the leading scholar in studying contingent faculty in general is Adrianna Kezar, and she includes a focus on FTNTT faculty in her research on contingent faculty, now the so-called, "new faculty majority" (http://www.newfacultymajority.info/equity/). For example, Kezar has organized a large scale clearinghouse on contingent faculty, the Delphi Project (http://www.thechangingfaculty.org/). And she has published a book and an article examining the lived experiences, working conditions, and labor markets of contingent faculty (Kezar, 2012; Kezar & Sam, 2013).

Although only recognized as a segment of the academic workforce relatively recently, the overall numbers and proportions of FTNTT faculty have been increasing for three decades. At the beginning of the 1970s, they constituted less than

5 % of the faculty. They increased up through the 1980s and 1990s, and now constitute nearly one-fifth (19 %) of the academic workforce (Rhoades, 2013). More significantly, in their analysis of national survey data, Schuster and Finkelstein (2006) found that the majority of new, full-time faculty hired in the academy are off the tenure track. Indeed, for the last cohort of faculty for which such national data are available, 58.6 % of new hires were FTNTT faculty. The takeaway point here is that if we are to understand academic labor markets, we need to learn more about the market dynamics and dimensions of contingent faculty, those in full-time as well as part-time positions.

Academic Labor Markets and Unionized Faculty Faculty are one of the most unionized workforces in the U.S.; 28 % of the workforce being represented in a collective bargaining unit (Moriarty & Savarese, 2006, 2012). But you would not know that from the literature on faculty. Nor would you know it in talking with scholars of Higher Education. Some might even ask, "Are there any unionized faculty?" (Rhoades, 1998a). Data not gathered in such a way as to be able to disaggregate full and part-time non tenure track faculty who are unionized. Can only focus on total and % of part-time (Directory).

Not surprisingly, given that it is a secondary and more fluid labor market, union density is lower for part-time faculty. Yet even in this segment of the academic workforce, a significant proportion of faculty (21 %) are employed in institutions in which they are represented by collective bargaining agents. That number is somewhat deceptive, though, because part-time faculty who work in more than one institution may find themselves working in one setting that is unionized and another that is not (Sweet et al., 2012). Yet the numbers of unionized part-time faculty and bargaining units are growing, as we shall discuss in a subsequent section of the chapter.

With respect to that other instructional secondary labor market, of full-time, non-tenure-track faculty, the data are aggregated in such a way as to prevent us from determining their union density. In the national database, and indeed in the bargaining units themselves, FTNTT faculty are aggregated with tenure stream faculty.

As with adjunct faculty and postdocs, despite their prominence in the workforce, the literature on unionized faculty is limited. At the inception of faculty unionization, several studies addressed the impact of unionization on faculty salaries. Substantively, the scholarship was largely driven by (managerial) questions regarding the cost of unionization, as well as trying to understand the rationale for faculty unionizing. Analytically, the focus was on the extent to which the institutional structure of unionization affected the dynamics of the academic labor market. In some cases, that meant assessing the empirical impact of unionization on compensation, in studies that revealed a positive effect of unionization (Birnbaum, 1970; Morgan & Kearney, 1977), no effect (Brown & Stone, 1977; Marshall, 1979), or that refined the previous findings (Guthrie-Morse, Leslie & Hu, 1981; Hu & Leslie, 1982). In other cases, it involved exploring a systematic structural phenomenon. That can be characterized as a "union wage premium" at institutions

with unionized faculty (Ashraf, 1990). It can also be analyzed in terms of "spill-over effects" of unionization on the salaries in non-unionized, but related (by sector and/or geography) institutions—in other words, sectoral effects on all wages (Leslie & Hu, 1977).

Unionization, then, can be seen as an intervening sociological structural variable that affects the operation of the economic models of labor markets. That is true whether it is the demographic, "fixed coefficient" model of Cartter or the human capital model of Freeman. To understand the academic labor market one must move beyond individual candidates in an open marketplace of employing institutions to include organizational and institutional variables, of which unionization is one.

Interestingly, unionization can also impact another institutional dimension that has been found to shape academic labor markets—patriarchy. Certainly, as Rhoades (1998a, p. 76) wrote, and as several studies found in the 1980s (Chamberlain, 1988; Hamermesh, 1993; Lee, 1995), "There is little question that faculty salaries are stratified by gender." Subsequent studies have generally considered gender as a (continuing and negative) factor in academic salaries, though there is much less research on the gendered aspects of academic labor markets more generally. Importantly, some research finds that unionization reduces the wage gap between men and women (Smith, 1992).

What is less clear are the mechanisms by which the institution of faculty unionization influences the academic labor market, including faculty salaries. The largest study of this issue is Rhoades (1998a) analysis of collective bargaining agreements. The analytical fulcrum of the analysis is the balance between managerial discretion and professional autonomy, which has obvious implications for the structure of academic labor markets. Two dimensions of academic labor markets are the security of professors' appointments in the primary academic labor market of tenure stream faculty, and the due process practices and rights of part-time faculty being hired in the secondary labor market.

In the case of tenure stream professors' job security, Rhoades' analysis of court cases and contractual provisions clarifies that contrary to the popular perception, tenured faculty can be, and have been, fired. Yet although managerial flexibility is quite considerable, even extensive, in identifying and invoking conditions legally justifying faculty layoffs, there are a number of contractual provisions surrounding the retrenchment process that can make it in some cases a cumbersome process. Such provisions may have the result of discouraging managers from exercising the legal flexibility they have.

In the case of managerial flexibility in hiring and non-renewing contingent faculty in the secondary academic labor market, the findings are equally clear. There are few contractual provisions that would constrain managerial discretion in playing the academic labor market for faculty in part-time positions:

> The absence of provisions about general personnel actions is striking. No conditions of appointment/release for part-time faculty are specified in 79 % of the 183 contracts in which part-timers are mentioned. There are few contractual constraints on managerial discretion in this area. (Rhoades, 1998a, p. 142)

Indeed, as Rhoades (1998a, p. 131) indicates, "There are more subtle ways of reorganizing the academic work force, or reallocating and restructuring faculty resources, than by retrenching faculty. ... In hiring larger proportions of part-time faculty, managers are renegotiating the position of faculty as a full-time professional work force."

A third dimension of influence on academic labor markets is the salary structures of faculty. One of Rhoades (1998a) chapters concentrates on the extent to which collective bargaining agreements embed mechanisms of merit and market (as well as equity). This takes us back to the classic concern and focus of scholars with regard to academic labor markets, the significance of quality, and the presumed challenge of unions as an institutional structure to the "universalistic" value of merit.

What Rhoades finds is evidence of segmented labor markets, between faculty in 4 versus in 2 year institutions. In the former, over two-thirds of the contracts (68 %) provide for salary adjustments for individual faculty based on merit, whereas in the contracts of community colleges just under one-fifth of contracts (19 %) have such provisions. Similarly, in the case of market provisions, which Rhoades finds evidence of increasing over time, they are three times as likely to be in the contracts of 4-year institutions (21 % of these contracts), as of 2-year institutions (6 %).

In closing this section, it is worth considering the extent to which the differences found in the collective bargaining agreements of 2 and 4 year institutions is related to the different structure of the academic workforce in those settings, with 70 % of faculty in community colleges being not just contingent, but part-time. Whatever the cause of the differences, it is clear that there has been a substantial restructuring of faculty in a process in which they are professionals who are more managed by managers with greater discretion and flexibility, and by enhanced managerial capacity.

Organizing (Unionized) Professionals Negotiating a New Academy

As there was a management revolution leading to more managed professionals from the 1980s into the 1990s and beyond, so we are seeing in the 2000s a counter-revolution in the union organizing of academic employees. Some of that activism can be found in the upper strata of the primary labor market of academe, in research universities. And there it is taking place in units that in some important ways cut across the traditionally segmented boundaries of academic labor markets—for instance, including tenure stream faculty and non tenure track faculty as well as academic professionals. Yet the greatest energy and mobilization, and the fastest growing gains, have been in the secondary labor markets of the academy, also in some of the central and most well resourced sites of the higher education system. In the case of adjunct faculty, the greatest organizing is taking place in private colleges and universities. And in the case of postdocs, the unionizing is taking place in research universities, in core STEM disciplines.

The new organizing is important partly because of what it signals regarding a contest over the balance of power between managers and academic employees, and the related direction of the academy. It is also important because it represents a mobilization of the least resourced members of the academic workforce in organizing to redress not just the balance of power between managers and academics but also the priorities and privatization of colleges and universities. The organizing of new segments of the academic workforce also speaks to the fact that we are currently seeing the negotiation of this new academy, not just a battle over and shift in power within the old academy.

The organizing that we are seeing in secondary labor markets in academe is of further importance in that the forms it is taking should help us see changes in the geography of academic labor. For example, as we shall see in the case of adjunct faculty, given that many of these academics are employees of multiple institutions, their organizing is also taking new forms that cut across the various locales of a local metropolitan area in which they work. So in the case of postdocs, the nature and issues that are at the core of organizing provide insight into the international and (age) demographic dimensions of this segment of the academic workforce. The unionizing efforts of these employees help us see the intersecting dimensions of local, national, and international agency and agencies that affect academic labor markets.

The organizing taking place is fast breaking. It is breaking faster than scholars have had to time to catch up with, with a few exceptions of scholar/activists. Thus, the ensuing section is more a narrative of these developments and of possible research than it is a review of existing literature.

Organizing at the Core of the Primary Academic Labor Market In 2009, one of the co-authors began as General Secretary of the American Association of University Professors (AAUP). At the time, and throughout his two and a half year stint there, he commented to staff members of the AAUP's (union) organizing department that U.S. higher education was on the cusp and indeed in the midst of experiencing more energy among faculty for organizing local bargaining units than at any time in over 30 years. Not since the inception of collective bargaining for academic employees in the late 1960s and 1970s, had there been such interest and success in faculty organizing and voting for union representation. The first half of the 2000s, for instance, saw the establishment of 78 new faculty bargaining units (a 15.7 % increase); the decade also saw 111,000 more faculty come to be represented in collective bargaining units (Moriarty & Savarese, 2012).

In this section of the chapter, we focus on union organizing among tenure-stream categories of faculty, particularly in public research universities. That institutional sector has the lowest union presence for tenure-track faculty of any public higher education sector. In states that have enabling legislation for collective bargaining (state law determines the collective bargaining rights of public sector employees), tenure-track faculty unions are more likely to be found in community colleges and in access universities than in the flagship system. For example, in the traditionally high union density states of Michigan and Ohio, faculty unions are prevalent in

community colleges and in regional universities (e.g., Central, Eastern, Northern, and Western Michigan, as well as Akron, Kent State, Toledo, and Wright State) than in the flagship universities of Michigan and Michigan State, or of Ohio State (although tenure stream faculty are unionized at the University of Cincinnati). So, too, in California, Iowa, Minnesota, Pennsylvania, and Washington, the flagship public university tenure stream faculty are not unionized whereas many of the state 4-year college systems and regional universities are—e.g., the California State University System, the University of Northern Iowa, the Minnesota state colleges, and the state colleges and universities of Pennsylvania (though in the UC system, full-time, non tenure track faculty are unionized).

There are some important exceptions to this pattern—the University's of Connecticut, Florida, Hawaii, and Massachusetts, as well as Rutgers University and the State University of New York system. But the general rule has been that faculty unionization is less likely as one moves up the prestige hierarchy of public colleges and universities. And that pattern may relate to the more national scope and prestige of faculty in the flagship institutions, tracing back to Jencks and Riesman's framing of these faculty members' growing power in a national marketplace.

At least three aspects of the organizing taking place in the core labor market and institutions of the academy are worthy of note and of study. First, it is taking place amidst a major assault on the rights of faculty and other public employees to collectively bargain. In two of the most historically labor friendly states in the nation, Wisconsin and Ohio, we saw in 2010 and 2011 state legislation to either ban or eviscerate college bargaining for public sector faculty. The differential outcomes of the struggle in those two states, with Wisconsin's anti-union legislation succeeding, and Ohio's being repealed (McNay, 2013), has (re)shaped the academic labor markets in those states. If we have traditionally thought of these faculty labor markets as national in scope, for regional institutions and community colleges they often are as local and regional as they are national. That in itself is worthy of study, particularly as the legislation aimed at eliminating public sector unions is linked to efforts to increasingly privatize higher education systems and institutions in ways that will also profoundly shape the academy.

A second important aspect of organizing is that several successful organizing campaigns represent the first successful such drives in a quarter century. Academic life and markets in the public research university sector of higher education has traditionally been understood in individualistic terms, conceptualizing professors as independent professionals who almost like free agents in sports leverage their research success into offers among competing institutions. Faculty unionization does not eliminate such individual negotiating, as noted in the earlier section of this chapter on market mechanisms in collective bargaining agreements. But it does layer on top of that activity another set of labor market mechanisms and dynamics that are worthy of study. Because politics at this local level also shapes labor market mechanisms and also needs to be understood.

A third significant aspect of organizing in the primary labor markets is that the groups are configured in ways that run counter to the heightened segmentation of academic labor markets that has increasingly defined the social organization of and

stratification within the academy. As shall be discussed, the organizing entities include different combinations of full and part-time faculty, tenure stream and non-tenure track faculty, and academic professionals. Those combinations reflect new combinations of "community of interest" among various segments of faculty, but they also express one of the aspects of faculty unionization, that provides interesting and significant examples of bargaining units that are inclusive of many segments of the academic workforce, in some cases representing a virtual wall-to-wall organization of academic employees. Rutgers University is a good example of this. The AAUP/AFT local there includes tenure stream and full-time non-tenure stream faculty, part-time faculty, graduate employees, and postdocs (although each group has its own contract). At some level, it may be that unionization represents a centripetal force in the academy, countering the heightened centrifugal pattern of specialization, segmentation, and stratification that has been prevalent.

Three examples of organizing faculty unions in primary labor markets at the core of the academy are worth noting for the analytical issues they raise. All three came during the tenure of one of the co-authors as General Secretary of the AAUP. The first was a campaign to organize tenure stream faculty at the University of Connecticut Health Center (UCHC). Significantly, there had been two previous union campaigns, in 1999 and 2000, with some of the same faculty players/leaders involved. It seemed a long shot, not least because it would be the first stand alone health center faculty to unionize, ever, and also because of the deep differences between the work, lives, and salaries of basic science and clinical faculty. One of the galvanizing issues was a proposed sell-off of the health center to a private hospital in Hartford, a move that reflects the privatization that is part of the academic capitalism playing out in higher education. More concretely, the change in the ownership of the health center would directly and adversely impact the work and labor market options of particularly the clinical faculty (due to a no-competition clause that can attach to clinicians' terms of employment, preventing them from leaving and going to work for a competitor—a very real geographical constraint on their labor market flexibility and options). Faculty were concerned not just about the decision, but about the fact that they had been accorded little opportunity to weigh in on the decision or to shape its terms. The upshot and eventual outcome was that a highly paid and yet highly stratified faculty in the pinnacle of prestige and money in research universities, voted to unionize.

A second example of organizing in the primary academic labor market, at the core of the academy, was a joint campaign (between AAUP and the American Federation of Teachers, AFT) at the University of Oregon. Two key points of significance surround this successful campaign. First is that the University of Oregon is a member of the Association of American Universities, a membership organization of top research universities. It had been decades since an AAU institution faculty had voted for a union. A second point is that the bargaining unit cuts across various categories of academic employee (it includes tenure related and non-tenure-track, full and part-time faculty, research assistants and postdocs) even as it carved out a segment of the faculty (in the Law School) not to be included in the unit. The contours and segmentation of the primary and secondary academic labor markets are being renegotiated and reconfigured.

A similar pattern is evident at the third example of organizing, faculty at the University of Illinois, Chicago (UIC). Although not a member of the AAU, UIC is a major public and science heavy research university, more so than the UO, and again the first such university in which faculty unionized in a quarter century. In another joint campaign of the AAUP and the AFT, one of the core issues was the desire of the faculty to combine tenure and non-tenure stream faculty (who are .51 or more in their appointment) in the same bargaining unit. As with the faculty at the University of Oregon, the "United Faculty" of UIC organized the union around a "community of interest" between different segments of faculty by status of employment (though they also carved the Colleges of Medicine out of the unit). The university fought that combination, arguing in various venues and courts that there was no "community of interest" among tenure track and non-tenure-track faculty. Although the legal outcome of this struggle was separate bargaining units, the United Faculty and local act as one unit, negotiating two contracts. And they continue to foreground a push to reduce the inequities and improve the working conditions and salaries of non-tenure track faculty. So again, the configuration of academic labor markets is the subject of active and ongoing negotiation, and faculty are central players in that process.

Organizing Secondary Labor Markets at the Core of the Academy For all the energy and success of faculty organizing in primary academic labor markets, the greatest dynamism has been in organizing secondary markets. In the case of both adjunct faculty and of postdocs, we have seen a dramatic growth in union organizing, with a number of significant successes.

From one major metropolitan area to the next, the Service Employees International Union (SEIU) is launching campaigns to organize adjunct faculty in private colleges and universities. The framing "metro" idea of these campaigns first took real root in the D.C. area with Local 500, and the successful organizing of George Washington University, American University, and Georgetown University. The idea is ultimately to achieve such union density in a metro area that the "local" will be the place colleges and universities go to in order to hire adjunct faculty, a sort of hiring hall for contingent faculty. And Local 500 is on its way to realizing a very impressive level of union density, effectively gaining influence over the metro labor market, which is the key geographic source of a labor pool for adjunct faculty. After the initial success in D.C., SEIU locals around the country have launched similar metro campaigns, from coast to coast and inbetween, in Boston, Los Angeles, Seattle, Oakland, and St. Louis.

The metro idea has been written about as an organizing strategy. In fact, Berry (2005) devotes an entire chapter to the strategy, noting that it is an approach that has deep roots in labor history. Unions other than SEIU are currently running adjunct campaigns with such an approach as well. In Pittsburgh, for example, the United States Steelworkers are running such a campaign, as is the AFT in Philadelphia. These campaigns have a somewhat approach to the metro strategy: In both cases, the organizing strategy goes beyond campus-by-campus card campaigns and focuses on building a community network of union activists across a metro region, in coalition with various groups in the region.

In all the metro campaigns the idea is to organize adjunct faculty in the geographical space in which they work, which ranges across various institutions in metropolitan areas. That makes a lot of sense in terms of connecting the geography of organizing to the changing geographic distribution of employees and workplaces. And it is something to which higher education scholars should be paying attention.

Another spatial shift that the SEIU campaigns in particular entail is to center organizing in private colleges and universities. For decades, given the Yeshiva decision of the Supreme Court in 1980, which held that faculty are managers and cannot collectively bargain, faculty unionization came to a halt in private universities. But that decision makes little sense with regard to adjunct faculty.

Interestingly, though, the Yeshiva boundary is getting pushed a little as well in terms of organizing academic labor markets. One of the campuses faculty are organizing at in an SEIU metro campaign is Pacific Lutheran University. The adjunct faculty there insisted on a campaign that includes full-time, non-tenure-track faculty. In response, the university has filed an objection with the National Labor Relations Board claiming that FTNTT faculty are managerial employees, as the U.S. Supreme Court found in the Yeshiva case. So as with so much else discussed in this chapter, academic labor markets are shaped by various institutional factors, in this case by political negotiations and institutions.

What is particularly striking about the metro campaigns and indeed about the adjunct organizing overall, is the capacity of the least resourced members of the academic workforce to successfully challenge heavily resourced, powerful employers and in the process transform in this case secondary labor markets for faculty. No matter how limited their resources, faculty are not just the object of institutional structures, they have the capacity to change those structures. Consider, for instance, the case of the first successful SEIU adjunct campaign in Washington, D.C., at George Washington University. GWU is one of the highest priced higher education institutions in the country (in 2013, it had the fourth highest tuition in the country, at over 44 K). It is also the largest landowner in D.C. outside of the federal government, a fact that apparently it communicates to prospective students on campus tours. In other words, it is not a university lacking in resources. Yet adjunct faculty there successfully unionized and negotiated a first contract that renegotiates important terms of the secondary academic labor market at that institution. And as part of SEIU Local 500, these contingent faculty are taking a step towards transforming that labor market for the entire metropolitan area. Organizing academic employees are a factor, then, in shaping academic labor markets.

Another secondary academic labor market is that of postdocs. In an earlier section of this chapter, we detailed the substantial growth of this category of academic employee. We also spoke to some of the policy concerns that have emerged in national public discourse about postdocs. One of the major concerns cuts to the heart of labor market structures and dynamics. Over 15 years ago the AAU (1998) report on postdocs expressed concern that the postdoc had become "an employment holding pattern," rather than the time-limited extension of an

educational experience, a short step on the way to a tenure track position. The policy idea has been that there should be mentoring and professional development, opportunities for career advancement and a time limit to postdocs, basic benefits, and salaries commensurate with the educational level of these academic employees. Postdocs should be "bridges to independence" (NRC, 2005), not semi-permanent, contingent academics in postdoc limbo (Nerad & Cerny, 1999). Another set of policy concerns have surrounded postdocs, the fact that such a large proportion are foreign-born scientists.

In the union organizing surrounding postdocs, there is ample evidence of the significance of the above issues. The level of organizing and its successes have been dramatic. In the mid-2000s, postdocs of the University of California, representing about 10 % of all academic postdocs nationally, unionized. They obtained their first contract in 2010. Subsequently, postdocs at Rutgers University and the University of Massachusetts Amherst have also voted for union representation and have settled their first contract.

In each of these campaigns, the issue of international postdocs and the types of temporary visas they held were a major issue that union organizers addressed; one strategy for gaining the interest and support of postdocs was for the union to provide talks and support surrounding visa issues, support that was too often lacking from the institution. Postdocs are an international labor force, and their labor market realities are shaped by national immigration law, the local institution's adaptation to and support in navigating that law, as well as the international context of flows of and competition for these scientists, including from home countries that are expanding their higher education system and seeking to attract postdocs back home.

It is also clear that one of the key issues in the organizing campaign has been the reality that postdocs are employees, with partners and often with families. They clearly see that they are contingent employees more than educational apprentices on the way to tenure track positions. For that reason, health care and retirement benefits, family leaves, and building steps and ladders into the postdoc experience have been important parts of the organizing campaigns. If we are to fully understand academic labor markets, it is important for us to better understand the lived realities of the employees in those markets. Just as scholars are beginning to reframe their understanding and models of undergraduate students and their college attendance, it is time for them to start adjusting their framing of postdocs and graduate students in terms of age, life stage, and nation of origin, each of which play out in important ways in labor market dynamics.

Given how recent much of the organizing discussed above has been, it is in some ways understandable that there is little academic literature on the subject. But another factor is a traditional view of academic labor markets as nationally competitive markets of individual academics and employing institutions. Such a framework essentially blinds scholars to the sorts of issues and phenomena identified above. It is time to adopt new conceptual lenses to understand these new academic realities in labor markets.

Mapping a New Research Agenda

We know very little about the vast majority of the academic workforce, which works in secondary labor markets. We also know relatively little about the workings of the primary academic labor market of tenure stream faculty, which has been and is being reconfigured. To more fully understand any of these markets, we would do well to attend to various forms of social organization and organizing that move us beyond perfectly operating market conceptions of individuals/professionals/applicants/candidates working and playing in an open, national academic marketplace of employing institutions competing for their talent.

Analytically, one step is to consider the agencies and agency of various entities that made possible the rise of a national academic profession. In Rhoades (2009) framing that development can be understood in terms of the intersection of higher education institutions and associations with the world of business (foundations). So, today, it would be useful to have studies of faculty and of academic labor markets consider the influence on the organization of those markets by foundations such as Gates and Lumina, by the Department of Education, and by various academic and non-academic (e.g., SEIU) labor unions and other sorts of advocacy organizations (such as disciplinary associations, the New Faculty Majority, the National Postdoctoral Association, and more).

Another step is to not lose sight of the connection between those patterns of social organization and social stratification. It is not just that one must pay attention to patterns of race, class, and gender as variables in studying academic labor markets, in studying mobility, careers, and salaries, for example. It is that there is a privileging of some social strata over others in the values we attach to social mobility, cosmopolitanism, and separation from community (see Baez, 2000; Rhoades et al., 2007), and in the structures we establish and the practices we engage in to reproduce these in the course of career mobility (indeed, even the notion of a continuous, uninterrupted career). As we emphasized in the study of academic capitalism and faculty, it is important to focus not simply on current faculty and their accommodation to the career and labor market conditions of the existing knowledge/learning regime, but also to consider how the prevailing pattern of social organization disproportionately devalues and/or disadvantages particular types of candidates and work.

A further analytical step is to devote attention to place, to the changing geographic dimensions of academic labor markets for different segments of academe. Whether it is the local dynamics of metro campaigns, in the various forms they take depending on the particulars of the metropolitan areas they cover, or in the dynamics of the intersection between national and international labor markets (e.g., see Musselin, 2004), there are agencies and dynamics that shape and are shaped by the actions and flows of academics. For example, because of the discrepancy between training expectations and hiring practices from one country to another, the leading analyst of European academic labor markets has written that "very specific (and rare) conditions have to be met for academic mobility to become an opportunity

for a permanent or quasi permanent recruitment" (Musselin, p. 72). As a result, negotiating the legal, cultural, and contractual minefield of international academic appointments and distinctive national rules and conventions in the academic labor market is a complex and often frustrating task, especially for young graduate students, postdocs, and scholars facing precarious labor conditions in *both* the sending and receiving countries, as is the case of many postdocs (Huisman, de Weert, & Bartelse, 2002; Rossi, 2008). Studies that consider the complex interaction of these factors would go a long way in filling the gaps in our understanding of academic mobility.

Similarly, a recent report from the OECD suggests that nonstandard, contingent employment has grown significantly over the past two decades in most OECD countries (Stone, 2012). How might the international STEM contingent trend be manifest in other countries, and, importantly, how may it affect the mobility of members of the STEM academic workforce, such as postdocs, contingent faculty, and tenure stream faculty? These are topics that sit at the intersection of national concerns (e.g., predicted labor shortages, the employment conditions of contingent scholars) and international phenomena, such as student and academic mobility.

Substantively, we have devoted considerable attention to the emergence of secondary academic labor markets. We have mapped this development in the broader economy in STEM fields, in the rising and now majority secondary labor markets in academe, and in the core fields (i.e., STEM) and institutions (research universities, and private universities and colleges) of higher education.

Drawing on the basic themes of the classic studies of academic labor and markets, we need a better understanding of segmentation within these secondary labor markets. For example, it would be valuable to have Clark-like studies of small worlds and different worlds of adjunct faculty, of postdocs, and of FTNTT faculty in terms of how their lives and labor markets vary by organizational sector and field of study.

Additionally, we need demographic analyses of geographically distinct labor markets. It is not just a matter of mapping metropolitan, regional, and international labor market flows (e.g., what proportions of part and full-time contingent faculty are available and recruited locally, statewide, regionally, and (inter)nationally). It is also a matter of differentiating among urban areas in terms of the geography of the available higher education institutions: The secondary labor market for contingent faculty is different in a metro area of dozens of universities and colleges versus one that, like that of Tucson, has one university and one community college.

Substantively, with the rise of academic capitalism and the closer intersection between higher education and the private sector economy, how permeable are the labor market boundaries between these realms? Our assumptions are strong about the relationship between demand for certain fields in the larger economy and the market position of those fields within the academy, but our knowledge about these interactions is actually quite limited. Secondary labor markets in the broader economy and the relationship of those to primary and secondary labor markets in academe are cases in point. Along similar lines, we know almost nothing about the permeability of boundaries between positions in the professoriate and

those in managerial professions. Before we assume that the boundaries between these professions are clear and strong, we would do well to explore the crossover career paths that can be observed in fields higher education scholars work in, from student affairs to institutional research to teaching centers and the like. With the rise of academic capitalism, we might expect to find the same sort of crossover patterns in the worlds of intersection between academic positions in the academy, positions in interstitial organizational units in the academy, and positions in the private sector. The new circuitry of producing and disseminating knowledge, as well as the enhanced and expanded managerial capacity of colleges and universities likely is translating into changes in the structure of multiple academic labor markets.

With regard to increasingly managed and unionized professionals, the field is wide open in terms of what remains to be explored. Within the ascendant secondary labor markets, how permanent or permeable are the boundaries among them, and between then and the primary academic labor market? We know next to nothing empirically about the movement of faculty from part-time to full-time contingent positions, and back. We also know next to nothing about sectoral segmentation of these labor markets. Are they as segmented by institutional type as are primary academic labor markets? There is much reason to believe they are not. For instance, it is evident that a significant proportion of part-time faculty work at more than institution, and from personal knowledge it is clear that such faculty may in any one semester or certainly in the course of their career work at a community college and a comprehensive university and a research university.

Moreover, given the union density of college faculty, it is remarkable how little we know of the labor markets of these managed professionals. Again, what patterns of movement are there between unionized and non-unionized settings? To what extent if at all does the presence of a union factor in to individuals' decisions about where they work? And to what extent are there patterns of mobility and stability that vary between unionized and non-unionized settings? We even know relatively little about the salary issues studied at the inception of faculty unionization, about the extent to which there is a positive impact of unionization on salaries and benefits, and about whether there are spillover effects of union wages and benefits to non-unionized settings.

Further, as was emphasized in the narratives about organizing professionals, there are far more questions than answers in this as yet unexplored realm. The organizing strategies of adjunct faculty should point scholars to the value of studying metropolitan labor markets in academe. So, too, the issues that are of utmost significant to organizing postdocs should point scholars to the value of studying international labor markets and patterns of professional privilege and stratification. And the new energy for organizing of tenure stream faculty in some of the most resourced settings in the academy, research universities, should point scholars to the value of reconsidering how these labor markets are constructed and are changing. For example, much of this organizing, as with much of organized faculty, takes place in inclusive configurations of tenure stream faculty, full-time, non-tenure-track faculty, and part-time faculty, as well as academic professionals. It may be that these highly segmented labor markets' boundaries are being overcome and even breached by union organizing.

In sum, faculty work and careers are played out in a restructured institutional world of academic capitalism. In that context, faculty are at one and the same time managed and re-organized professionals, as well as organizing professionals seeking to negotiate a new academy with restructured terms and conditions of work (and of the labor market). And that restructuring and (union) organizing is taking place at intersecting multiple levels—the local, statewide, national, and international. It is also taking place in primary academic labor markets as well as ascendant and prominent secondary labor markets. If we are to understand these academic labor markets, we must attend to the varied ways in which they are socially organized in negotiating a new academy.

Closing, and Moving Forward Based on What We Know In moving forward, it is useful to revisit and summarize what we know from the existing literature. For in mapping an agenda for future research it makes sense to provide a map of known territory.

What we know of academic labor markets is about national labor markets. As important as any other observation is that the cosmopolitan values of that market place exhibit patterns and are connected to practices that have been found since the late 1950s. Beyond the importance of merit, which national pools of applicants and hires are believed to enhance, there is an ongoing dimension of "attractiveness" to other institutions that defines candidates' value in the marketplace. The defining values of this national marketplace are "cosmopolitan," valorizing mobility. The strength of these values is such that what is rewarded is not commitment to and constancy in the employing university, but movement among universities, a sort of free agency of academics in a national, and sometimes international market. In that free agency, the doctoral origins of the candidates are important markers of both prestige and merit, enhancing their value in the marketplace.

At the core of the values in the academic national market is a "universalistic" notion of "meritocracy." And at the core of that definition is research productivity. That aspect of publications and grants is central to Jencks and Riesman's explanation of the "*academic revolution*." It is evident in the enduring value of research versus teaching in the reward systems of faculty in every institutional sector, including those in which few faculty do much research (Fairweather, 1994). Over time, the balance of weight on grants versus publications is increasingly on grants, particularly in STEM fields in which there is much federal grant funding and in medicine, where those grants are a source of faculty members' salaries. And there is some evidence that with the growing emphasis on technology transfer that patenting may come to be a measure of merit in the national labor market of research universities. What is far less clear and basically unstudied is the value of teaching, service, and other factors in the non-national academic labor market for tenure stream faculty, though it is clear that in the case of part-time faculty it appears no "merit" factors such as successful teaching experience pay off in the academic labor market.

Yet the national labor markets continue to be shaped, or distorted by patterns of class, race, and gender privilege. That reveals that our conceptions of merit, and

of the value of mobility are institutional factors that sociologists have found to characterize the social geography of academe. Academic labor markets are socially stratified.

We know that these national labor markets are segmented, along various lines, revealing the importance of several other so-called "institutional" factors, studied by structural sociologists and institutional economists. Thus, we know that field of study and work is a source of segmentation, as is institutional sector. We know that unionization matters. In short, the literature clarifies various ways in which academic labor markets are socially organized—they do not simply operate by virtue of an invisible hand.

It is important to consider the intersection between academic labor markets and other labor markets. For we know the two are interconnected. Indeed at the heart of some of the steepest stratification in national academic labor markets is the idea that in some fields (e.g., Law) faculty can command high salaries in the non-academic marketplace and that this attractiveness is the source of their high salaries in academe. In many realms this connection to a non-academic marketplace is more asserted and assumed than it is empirically explored. But in the case of STEM labor markets there is important current and historical research that calls for a considerable measure of skepticism about the close link between academic and nonacademic labor markets. Indeed, the empirical data points to the repeated ways in which public policy is out of touch and even in direct contradiction to the evident empirical patterns of supply and demand in academe.

The large scale demographic and economic studies of supply and demand in the academic labor market have revealed an ebb and flow over time that maps onto distinctive profiles of the social organization of academe. That is particularly true in terms of its age profile. It has moved from a period of extensive hiring in the 1960s to a slowdown of hiring in the tenure track ranks and in the last several decades a shift to hiring faculty off the tenure track that has yielded a small, secure, graying academic profession of tenure track academics, alongside vast sectors of insecure academic employees.

The rise of academic capitalism and of more managed professionals is also evident in terms of what it means for academic labor markets. Research has revealed the growing intersection of science and industry, with an attendant impact on labor markets, the growing tenuousness of tenure, with a further segmentation of labor markets, and of the effects of unionization and status of employment on academic labor markets.

Developments in secondary labor markets in STEM are in some interesting ways analogous to developments that are evident among patterns of employment for contingent, and especially for part-time faculty. The location of employment has become increasingly complicated, and is moving beyond a simple pattern of employees having one employer. Now we see significant proportions of STEM employees working for more than one employer. And in the case of faculty labor markets, we see a new faculty majority for whom employment is often with multiple employers, and often in a metro region, not just in one institution. In short, the physical location of faculty work makes it clear that local and regional academic labor markets are at play.

Importantly, secondary labor markets themselves are segmented. In the case of faculty, one segment of contingent faculty (full-time non-tenure track) is more like the primary labor market, whereas the other segment (faculty in part-time positions) is essentially a secondary labor market segment of a larger secondary labor market.

It is clear that the logic and values of academic capitalism contribute to a reorienting of the primary academic labor market in academe. What is valued in academic work is related to what is valued on the open academic labor market. Moreover, academic capitalism contributes to the accelerated growth of another secondary labor market in the core research sector of the academy, postdocs. There is considerable evidence in policy reports and empirical analyses of the secondary character of this work and labor market. Equally important in terms of social geography is the international character of this academic labor market. A high proportion of postdocs are foreign-born, lending a more intensive international dimension to understanding the dynamics of this segment of academic labor markets. Some studies are suggestive that this labor market, like the national one, is socially stratified by various institutional factors, from the social characteristics of the candidates in the marketplace to structural characteristics such as unionization.

In tracing the increasingly managed nature of academics, it is also clear that there is another labor market segmentation among rising secondary segments of the academic workforce. On the one hand, there are secondary labor markets in the realm of instruction (part-time faculty). On the other hand, there are secondary labor markets in the realm of research (soft-money, contingent, full-time researchers, and postdocs). Whereas the labor markets of the former tend to be local, those of postdocs are international. That represents another layer of complexity in the social geography of the academy.

So there is much to build on in the study of academic labor markets. There is a strong foundation for study in terms of analytical frameworks and methods, dating back to the classic studies of academic labor markets. There is also a strong foundation in empirical studies and conceptualizations of changes in academe in the last few decades, an opportunity to build on initial findings of how those changes (e.g., academic capitalism, managed professionals) are playing out in reshaping the social geography of academic labor markets, creating and complexifying secondary academic labor markets with segments of their own. We close, then, as we opened, focusing on the social organization of (secondary) academic labor markets in the U.S., reviewing a literature that provides us with important findings and guidance for studying those markets in the future.

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Chapter 10
Men of Color in Community Colleges: A Synthesis of Empirical Findings

J. Luke Wood, Robert T. Palmer, and Frank Harris III

Challenges facing boys and men of color in education have been well documented by scholars (Allen, 1986; Cuyjet, 1994, 1997, 2006; Davis, 2003; Davis & Jordan, 1994; Davis & Polite, 1999; Harper, Carini, Bridges, & Hayek, 2004; Harvey, 2002; Kunjufu, 2005; Palmer, Davis, & Hilton, 2009; Perrakis, 2008). Over time, the growth of this literature base has produced a community of inquirers dedicated to applied research that seeks to connect theory and research with practice in the field (Palmer, Wood, Dancy, & Strayhorn, 2014).

To date, hundreds of studies have been conducted to examine factors that influence success for males of color in education. The vast majority of the postsecondary literature on these males has focused on the 4-year college and university context (Wood, 2013), with an emphasis on predominantly White institutions (PWIs) and, to some extent, historically Black colleges and universities (HBCUs). In more recent years, the focus on men of color in education has expanded to the community college sector. Rightly so, this is an important expansion given that community colleges serve as the primary pathway for men of color (particularly Black and Latino men) into postsecondary education. For instance, of those men who attend a public institution; upwards of 72 % will begin their postsecondary careers at a community college (BPS, 2009a).

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Spanning three decades, from the 1990s to the 2010s, scholars have explored the experiences and outcomes of men of color in community colleges. To our knowledge, the first peer-reviewed study on men of color in community colleges was published in the *Community College Journal of Research and Practice* in 1998. This article by Harold P. Mason and entitled, "A persistence model for African American male urban community college students," extended an empirical model of persistence derived from Black men attending an urban community college in Chicago, Illinois.

Since then, the research on men of color in community colleges has grown modestly, with a large focus on factors that are predictive and indicative of student success. The purpose of this chapter is to report on this scholarship, synthesizing findings from the burgeoning (yet underdeveloped) body of empirical research on men of color in community colleges. In particular, we highlight findings relevant to factors influencing student success outcomes for these men. In doing so, we hope to illuminate key lines of inquiry in need of further exploration and development. We begin by providing background context on the need for research on these community college men.

Two Rationales for Researching Men of Color in Community Colleges

There are numerous rationales for exploring the experiences of men of color in community colleges. Here we overview two primary points in this regard. First, while research illustrates that men of color consider the community college as a primary pathway for improving their lives, disparate student outcomes for these men is quite concerning. Second, men of color have distinctive experiential realities in community colleges compared to other students. Notwithstanding, they are typified by heterogeneity, not homogeneity. Therefore an understanding of their distinctive, yet nuanced, characteristics and lives are needed. Theories, models, and practices are needed to address the salient realities of these men in community colleges.

Disparate Student Outcomes

While men of color enroll disproportionately in community colleges and perceive these institutions as avenues for upward mobility, student success data for these men bears a contrasting picture. By nearly every imaginable marker of student success (e.g., persistence, achievement, attainment, transfer), men of color (particularly Black and Latino men) experience disparate outcomes. For example, data from the Beginning Postsecondary Students Longitudinal Study (BPS, 2009b) indicated that only 17.1 % of Black and 15.4 % of Latino men graduated (e.g., earned a certificate

or degree) or transferred from a community college to a 4-year institution within 3 years of enrollment. Juxtaposed to these data are graduation outcomes for White and Asian men at 27.0 % and 23.3 %, respectively (BPS). Even after 6 years of enrollment, between group disparities permeate the community college mythos of upward mobility. Less than a third of Black (32.1 %) and Latino (30.2 %) men will have graduated (e.g., earned a certificate or degree) or transferred within 6 years. In contrast, 39.8 % of White and 43.4 % of Asian men will have done so in the same time frame (BPS, 2009c).

However, even more concerning are the differential outcomes for those students who achieved 'success' (i.e., those who earned a certificate, degree, or transferred). For instance, nuances among certificate and degree earners bear a striking trend where Black men who achieved 'success' were significantly more likely to have earned certificates (at 18.8 %) in comparison to only 0.7 % of Asian men. Moreover, while only 26.3 % of 'successful' Black men earned an associate degree, 34.6 % of White men who achieved 'success' did so in the same time frame. Perhaps more deleterious are outcomes for transfer. For instance, 73.1 % of successful Asian men transferred to a 4-year university while only 50.7 % of Latino men did so in the same time frame (BPS, 2009d).

These data points allude to the occurrence of social stratification manifested in community college sites (Ireland, 2012), raising questions about the institutional factors that foster differential outcomes for men by racial/ethnic affiliation. This is a concerning predicament, given the overwhelming enrollment of men of color in community colleges. According to Bush and Bush (2010), community colleges are perceived by men of color as a concrete mechanism to advance their social and economic mobility. Specifically, research from Wood and Palmer (2013a) indicated that the primary goals of Black men attending community colleges included achieving steady work, being financially stable, and serving their communities. Similarly, qualitative findings from Wood, Hilton, and Hick (2014) found that the primary motivation for Black men to attend community college was to create a better life for themselves and for their families. Men in their study believed that the community college was a pathway to actualize this goal. Unfortunately, given the student success outcomes experienced by men of color in community colleges, the utility of the institutional type in fostering these goals is questionable, at best.

Distinctive Experiential Reality

A core notion guiding much of the research and theory for Black men (and other men of color) in the community college is that they occupy a distinct socio-cultural positioning. Specifically, Bush and Bush (2013) assert that one of the primary tenets of African American Male Theory (AAMT) is that Black men represent a unique group with distinctive histories, experiences, perceptions, and realities. Thus, what may set research on men of color in the community college apart from other areas of student success inquiry is that the factors influencing success for these men

differ inherently from other students. This is to suggest that the way men of color navigate, interpret, encounter, and experience community colleges is qualitatively distinct. Following this logic, outcome data for men of color illuminate the need for research on this population that explores their experiences, perceptions, and outcomes in community colleges. Altogether, these lines of inquiry can provide clarity to successful strategies for enhancing outcomes for these men.

Scholars have argued that while these men are unique (Bush & Bush, 2013), they are not a homogenous population with the same issues, concerns, and barriers. Collectively, this suggests that Black men are distinct, yet different (Harper & Nichols, 2008; Palmer & Wood, 2012; Wood, 2013). Furthering this notion of distinction and heterogeneity, some scholars have begun to illustrate key differences between men of color (particularly Black men) by institutional type. For instance, Flowers (2006) examined differences in academic and social integration between Black male students in 2- and 4-year institutions. Using data from the 1995 collection of the Beginning Postsecondary Students Longitudinal Study (BPS), he found that Black men at 2-year institutions had lower levels of academic and social integration than their 4-year counterparts. With respect to academic integration, 2-year collegians were less likely to attend study groups, talk with faculty about academic matters out of class, and to meet with their advisors regarding academic concerns. Moreover, these men were also less likely to participate in school clubs, attend campus events (e.g., music, choir, drama, fine arts), participate in intramural or non-varsity athletics, and to go places (e.g., concerts, movies, events) with friends from college.

Given predominant theories in higher education, which espouse that greater levels of academic and social integration are key to persistence and completion for students (e.g., Tinto, 1975, 1993), Flowers suggested that these differences could explain disparate outcomes for Black men in community colleges in comparison to those at 4-year institutions. In addition to examining academic and social integration, Flowers also compared select background characteristics between these men, finding only one difference, that Black men in 4-year institutions had higher degree goals (e.g., master's, doctoral) than their 2-year peers. Given that few background variables were examined, Wood (2013) set out to extend upon Flowers (2006) work by articulating other key differences between Black men in 2- and 4-year colleges. Using data from the 2006 collection of BPS, Wood examined a litany of background characteristics. He found a number of key differences, specifically, that Black men in community colleges had greater odds of being older, having dependents, being married, being independent, and having delayed their enrollment into postsecondary education.

Moreover, these men had lower degree expectations, were more likely to attend public high schools, and had fewer years of preparation in foreign language, mathematics, and science. Wood concluded that while there are many commonalities between Black men in 2- and 4-year colleges, they are in effect "the same . . . but different" (p. 58). In general, scholars of the community college experience may find the differences explicated by Flowers (2006) and Wood (2013) to be particularly insightful or salient. But in fact, these studies are situated within a literature basethat

has long described student demographic, faculty, and institutional differences between institutional types (Davies & Casey, 1999; Pascarella, 1999; Piland, 1995; Rhine, Milligan, & Nelson, 2000; Wang, Gibson, Salinas, Solis, & Slate, 2007).

In yet a different articulation of within-group differences, Wood and Vasquez Urias (2012) examined differential outcomes for men of color (e.g., Black, Latino, Native American) attending community colleges and proprietary schools. In particular, they sought to determine whether after 6 years of enrollment, there were differences in satisfaction across institutional type. Wood and Vasquez Urias examined three primary types of satisfaction, including: students' satisfaction with their choice of major or course of study; satisfaction with the quality of their undergraduate education; and satisfaction with the worth of their degree. Even when controlling for relevant confounding variables, they found that men of color attending community colleges were significantly more satisfied than those attending proprietary schools. In detail, men of color attending community colleges had greater odds of being satisfied with their choice of major or area of study by 365 % in comparison to their proprietary school peers. Moreover, these men had greater odds, by 292 % and 293 %, of being satisfied with the quality and worth of their degrees, respectively. Given the increasing percentage of men of color enrolling in proprietary schools, the authors suggested that their results raised caution about utility of proprietary schools in fostering positive outcomes for historically underrepresented and underserved men in education.

Taken together, findings from Flowers (2006), Wood (2013), and Wood and Vasquez Urias (2012) propagate a seamless argument: while Black men are a unique socio-cultural group (Bush & Bush, 2013), they have differing characteristics, experiences, and perceptions across institutional types (e.g., 4-year colleges, for-profits). This notion is the crux of research on Black men (and other men of color) in the community college, as it serves as one justification for scholarly inquiry. However, these points are even more salient when considering that a common practice in the field of education is for community colleges to draw their strategies, policies, and practices from the literature on programs serving Black men in other institutional contexts, particularly 4-year institutions (Wood). Moreover, Wood noted that such approach is often taken without recognizing the differences between Black men by institutional type. As such, results from these studies illustrate that research, theory, and practices specific to the academic realities of Black men in community colleges are greatly needed. With this in mind, the next section articulates the methodology employed in this synthesis of empirical research.

Synthesis of Empirical Findings

In this chapter, we highlight research on men of color in community colleges, with a focus on studies that are empirical in nature. This chapter employed the analytical lens of literature metasynthesis, a process in which research from a given topical area is synthesized to uncover extant themes (Lewis & Middleton, 2003; Turner,

Table 10.1 Review of literature related to community college men of color by type of publication and in 3-year increments

5-year increment	Journal articles	Book chapters	Reports	Total
2013	8	1		9
2010–2012	12	1	1	14
2007–2009	–	5		5
2004–2006	1	1		2
2001–2003	2	–		2
1998–2000	1	–		1
Total	24	7	1	33

Gonzalez, & Wood, 2008). As noted by Bland, Meurer, and Maldonado (1995), literature synthesis is an important scholarly undertaking as findings can serve to apprise scholars and practitioners on the status of a field of study, allowing for the illumination of topical areas in need of further exploration.

Scholarly works published between 1998 and 2013 were identified through an exhaustive search of the scholarly literature. Table 10.1 presents these works by publication type in 3-year increments. In all, 33 works were included in this analysis of literature. As made evident in Table 10.1, the preponderance of these works are peer-reviewed journal articles (24 of 33). Most of these articles were written from 2010 to present, illustrating the significant growth of scholarship in the field. In line with the increasing focus on men of color, eight peer-reviewed journal articles were published on men of color in community colleges in 2013 alone. Thus, the 3-year period from 2013 to 2015 is on track to surpass the scholarly productivity of prior years.

Of the 33 published works on men of color, 27 were empirical in nature. Most of the empirical studies focused on factors influencing student success, broadly defined (e.g., persistence, achievement, attainment, transfer). Most of the published works were quantitative in nature (17 in all) and employed some form of regression (e.g., ordinary, logistic, multinomial) to examine the outcome of interest. Eight studies employed qualitative research designs, relying primarily on interviews and focus groups, and to a lesser degree, on concept mapping. The remaining two studies employed mixed methods designs. Moreover, of the identified studies, nearly all focused on Black men in community colleges. For instance, 20 of the 27 scholarly works focused exclusively on Black men, while four publications examined Black men in conjunction with other racial/ethnic populations (e.g., Latino, Native American, Asian). Only three studies focused solely on Latino men, including an institutional level analysis of graduation rates (Vasquez Urias, 2012), a qualitative study on masculine identity (Sáenz et al., 2013), and a qualitative study of engagement (Ingram & Gonzalez-Matthews, 2013). The dearth of research on Latino men in community colleges represents a particularly concerning oversight among scholars, given that Latinos represent the fastest growing demographic group in the nation, expected to account for 30 % of the total U.S. population by 2040 (Vasquez Urias).

Possibly, even more perplexing is the total absence of research on Asian and Native American men as a set alone population, considering that many community colleges struggle to foster positive outcomes for these male groups. Specifically, much research is still needed on Southeast Asian and Pacific Islander men, who experience deleterious student success outcomes on par with those of their Black, Latino, and Native American peers (Wood & Harris, 2014). Moreover, federal and state data need to be better disaggregated to account for ethnic population differences within race (Harris & Wood, 2014a). For example, research from the National Commission on Asian American and Pacific Islander Research in Education (CARE, 2011) found that within the Asian American Pacific Islander (AAPI) community, Southeast Asian Americans and Pacific Islanders are more likely to attend community colleges. These students are more likely to be single parents, work 35 h or more while enrolled in school, and to have dependents other than a spouse, which are "risk factors" that necessitate attrition. Specifically, while not indicating whether this data is reflective of student enrolled in 4-year or 2-year institutions or disaggregating the data by gender, research show among Southeast Asian Americans, 33.7 % of Vietnamese, 42.9 % of Cambodians, 46.5 % of Laotians, and 47.5 % of Hmong adults (25 years or older) reported having attended college, but having not earned a degree. Similarly, among Pacific Islanders, 47.0 % of Guamanians, 50.0 % of Native Hawaiians, 54.0 % of Tongans, and 58.1 % of Samoans entered college, but left prior to earning a degree. Despite the fact that Southeast Asian Americans and Pacific Islanders are more likely to enroll in community colleges and other less selective institutions (CARE), to our knowledge, empirical research on these students at 4-year institution is limited (Palmer & Maramba, 2014) and is nonexistent for community colleges.

Limitations

Given that the majority of studies conducted on men of color in the community college focus on Black men, one limitation of this chapter is that the synthesis presented is a byproduct of extant scholarship. Thus, findings specific to Black men should not be assumed generalizable or transferrable to other men of color. Similarly, findings from the limited research on Latino men should not be assumed to account for the lived experiences of Black men. Moreover, in line with the numerous avenues for assessing student success, scholars of the male of color experience in the community college have explored determinants of persistence, achievement, attainment, graduation, and transfer among this population. Some scholars have focused more generally on Black male success, employing several measures of success for a more comprehensive portrayal (Bush & Bush, 2010). Undoubtedly, the lion's share of empirical research on Black men in community colleges has focused on persistence (e.g., Hagedorn, Maxwell, & Hampton, 2001; Mason, 1998). Thus, while the authors have sought to synthesize findings on student success, these findings are predominantly persistence focused in nature (Freeman &

Huggans, 2009). This is a limitation in that persistence does not always equate to achievement. For example, recent findings from Wood and Harris (2014) indicated that community college men had higher rates of persistence, but did not complete college (by earning a certificate, degree, or transferring) at comparable rates. This suggests that although men of color are being retained at community colleges, they are not graduating. With these limitations in mind, the next section overviews the theoretical framework employed to organize this synthesis of empirical findings on male student of color success in the community college.

A Synthesis of Findings on Student Success

The Socio-Ecological Outcomes (SEO) model, as espoused by Harris and Wood (2014b), served as the guiding framework for this synthesis. The SEO model articulates the primary factors that serve to influence outcomes for historically underrepresented and underserved men in education. The model is chiefly informed by prior research on men of color in community colleges and secondarily by scholarship on men of color in postsecondary education, community college student success, Black masculinity, and ethnic identity development. The model adheres to the structure of Astin's (1993) Inputs-Environment-Outcomes (IEO) model. In Astin's model, it is suggested that programs serving student needs should account for "inputs" relevant to students' prior educational experiences, their characteristics, and other pre-college contextual factors. These inputs are filtered through the environment of an educational program, which relates to students' experiences in the program. By emphasizing the environment, Astin suggests that student success must focus on what occurs in the environment that eventually leads to outcomes for students. Guided by this basic structure, Harris and Wood articulated inputs, environments (referred to as socio-ecological domains), and outcomes relevant to shaping outcomes for underserved men (Fig. 10.1).

With respect to inputs, Harris and Wood (2014b) noted that male of color success is influenced by both student background/defining factors and societal factors. Background/defining variables refer to student characteristics (e.g., age, disability status), family characteristics (e.g., mother's education, father's education), and other pre-college considerations (e.g., high school preparation, time status) that may influence how a student encounters and navigates college. Societal factors are meta-level socio-cultural forces that center on socializing messages that men of color receive regarding their identities. These factors include (but are not limited to) stereotypes, prejudice, economic conditions, and capital identity projection (the internalization of capitalistic values).

Harris and Wood (2014b) note that these inputs influence how students interpret and negotiate their experiences during college. In particular, they highlight four socio-ecological domains that are key determinants of student success in college. These include the non-cognitive, academic, environmental, and campus ethos domains. The non-cognitive domain is inclusive of two construct areas, including
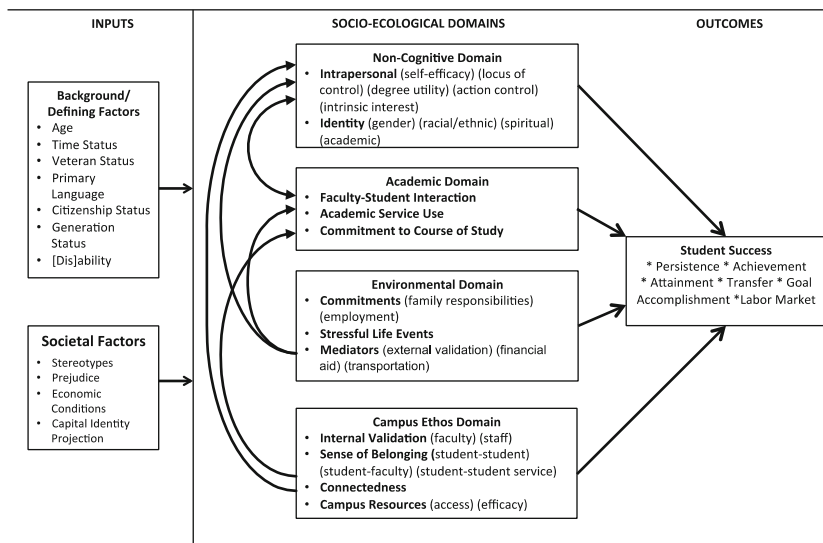
Fig. 10.1 The socio-ecological outcomes model (Used with permission from the Minority Male Community College Collaborative, San Diego State University, ©2012)

intrapersonal factors and identity factors. Intrapersonal factors refer to psychosocial dispositions of students that are directly influenced by both the campus climate and students' external lives. Intrapersonal factors include: self-efficacy (students' confidence in their ability to perform in academic matters), degree utility (the perceived usefulness of a college degree), locus of control (students' feelings of control over their academic futures), action control (students' directed attention or focus on academic matters), and intrinsic interest (the authentic interest a student has in academic material). These psychosocial dispositions are hypothesized to interact with identity factors. Identity factors are primarily focused on the nexus of individuals' racial/ethnic and gender identities; it is also inclusive of students' spiritual and academic selves.

Like the non-cognitive domain, the campus climate and external environmental domains also influence the academic domain. The academic domain is inclusive of students' academic experiences, with a focus on how they interact with faculty, use campus services that are critical to their success, spend time studying, and their commitment to their course of study. Harris and Wood (2014b) suggest that there is an interrelationship between factors occurring in the non-cognitive and academic domains, where the exchange between these domains (as affected by the environmental and campus ethos domains) influences student success.

The environmental domain includes factors that occur in students' external lives that affect their outcomes in college. These include their responsibilities (or commitments) to family members and employment, stressful life events, and external mediators. Stressful life events refer to the intensity and number of events

that occur in students' life that may introduce stress. These factors could include: a divorce in family, incarceration, death of a close family member or friend, major change at work, loss of job, illness in family, or eviction. External mediators are inclusive of messages students receive from others about their college pursuit, financial aid, and transportation. These factors serve to mediate the effect of the environmental domain on other socio-ecological domains. Finally, the campus ethos domain includes factors relevant to the general campus climate. This encompasses validation that students receive from faculty members and staff and whether students feel a sense of belonging with faculty, staff, and students on campus. These factors also relate to campus racial climate, and whether such climate is rife with stereotypes and microaggressions. Moreover, students' access to and perceived efficacy of campus resources also serve to shape their experiences in the college environment. Taken together, the four socio-ecological domains (non-cognitive, academic, environment, and campus ethos) impact student success, broadly defined (e.g., persistence, achievement, attainment, transfer). These four domains along with the two pre-college factors (background/defining and societal) serve as organizing categories for this synthesis of empirical findings on student success for men of color in community colleges.

Social Factors

Before proceeding to the synthesis, there is one important domain not present in the model that should be acknowledged. Noticeably absent from the SEO model, is a domain specific to campus social life. The genesis of this omission begins with Mason's (1998) work that employed Bean and Metzner's (1985) model of nontraditional student attrition as a theoretical framework. Diverging from Tinto's (1975) integrationist lens, Bean and Metzner postulated that nontraditional student success (e.g., students of color, low-income students, commuter students), were more directly influenced by academic and environmental concerns than social integration. As such, Mason avoided an analysis of any social integration variables. However, avoiding an analysis of social integration due to commonalities between men of color and nontraditional students is not a sufficient justification for negating the social integrationist paradigm.

Rather than ignoring the role of social factors in student success for men of color, other scholars have tested this assumption. A compelling finding from the research on Black men is the intricate effect of social integration on student success. First, Wood (2012a) used data from the Beginning Postsecondary Students Longitudinal Study (BPS) and the Educational Longitudinal Study (ELS) to demonstrate that Black men, in comparison to their non-Black peers, are significantly more likely to participate in intramural or non-varsity sports, participate in varsity and intercollegiate athletics, and attend fine arts activities (Wood). While Black men had higher levels of social integration than their peers, Wood found that when social variables were combined into a composite measure of social integration, they served as a

negative predictor of persistence for these men, accounting for 51 % of the variance in persistence (including relevant controls). However, one challenge in creating a composite measure of social integration markers is that the distinctive effects of different types of social integration are ignored. Research from Wood and Williams (2013) also provides some added insight to this issue. They found that participation in non-varsity and intramural sports was in fact a positive predictor of first-year persistence for Black men in community college (though it should be acknowledged that few community colleges have such activities). However, Wood and Williams found that frequency of participation in extracurricular activities on campus (broadly defined) served as a strong negative predictor of first-year persistence, especially in their full model, which took into account background, social, academic, and environmental characteristics.

Peer interactions have been shown to be integral contributors to Black male achievement. However, the influence on these types of interactions on student success outcomes has been discordant, at best. For example, in a mixed methods study of Black men at a California community college, Bush and Bush (2010) found that Black men who reported higher levels of peer interaction benefitted from these interactions through significantly greater GPAs and certificate/degree attainment rates. However, qualitative findings from this same study illustrated a different relationship. During focus groups, Black men reported that interactions with peers, particularly those with other Black men, had a negative influence on their academic success. Specifically, these men cited interactions with other Black men as a challenge that they "had to overcome to be successful as opposed to a tool for success" (p. 55). Participants characterized their peers as being completely 'disinterested' in campus academic or social matters. Bush and Bush suggested that these portrayals of their same racial/gender peers were emblematic of Black male disconnection from community college culture.

These findings raise a particularly salient conundrum, as they illustrate the nuanced effect of social connections with peers. In essence, social connectedness can be deleterious to Black male success when their affiliations are with other Black men who are on the 'margins' of campus academic and social life. Thus, simply having peer interactions should not be envisioned as a positive factor for student success, unless connections are made with Black men who themselves are engaged and focused on academic matters. Sutherland's (2011) research on the post-transfer experiences of Black immigrant men may shed further light on this topic. Sutherland reported that participants attributed their success to peer relationships, noting that they were drawn to peer interactions with men who shared "similar interests, characteristics, or social attributes" (p. 274). Extrapolating from this notion, it may be that Black men who are on the academic and social margins of the institution may develop relationships with those who are also on the margins; while those who are supported by and engaged in the institution may acclimate to those with similar experiences and outcomes.

Similar findings on social integration have emerged from other research as well. Strayhorn (2012b) found that social integration was a significant negative predictor of Black male satisfaction in the community college. In particular, he noted that

among varying types of social integration, social relationships with other students accounted for reduced satisfaction. Similarly, Bush and Bush (2010) conducted focus groups with Black men and concluded that, "peer interaction with African American men is perceived as something that African American male students had to overcome to be successful as opposed to a tool for success" (p. 55). Informed by this research, the SEO model does not account for social variables. However, it should be noted that at least one study has found divergent findings. For instance, Wood and Palmer (2013b) found that greater levels of extra-curricular involvement were a positive predictor of students having a high intent (or likelihood) of transfer. Thus, while social integration as a whole may serve as a negative predictor of Black male success in the community college, the same may not necessarily be true for transfer students.

Synthesis Results

In the following sections, the results of the synthesis of research on men of color in the community college are presented. As previously noted, the synthesis focused on empirical findings for research that focused explicitly on student success.

Background/Defining Factors

An important background/defining factor identified across numerous studies is *time status*. Time status refers to the enrollment intensity of a student. This variable has been measured in two primary ways, including the total number of credits taken in a given semester or whether a student is enrolled full-time or part-time. Largely, men of color enrolled in community colleges are part-time students. For instance, 46.7 % and 50.9 % of Black and Latino men are enrolled in community colleges exclusively part-time. Moreover, another, 17.0 % and 18.3 % of these men attend college with mixed full-time and part-time enrollment (NPSAS, 2012a). Further, part-time status has been regularly identified as a barrier to student success. Generally, scholars have posited that part-time enrollment can prevent students from being fully incorporated in the academic and social milieu of campus life. In addition, part-time students often have external obligations in their lives (e.g., family responsibilities, employment) that can detract from their ability to focus on their academic pursuits (this point is discussed later) (Wood & Williams, 2013). For example, Hagedorn et al. (2001) examined predictors of first, second, and third-semester persistence for Black men at a large west coast community college. Using logistic regression, they found that the greater the total credit hours students enrolled in each semester, the greater their odds of persistence.

In contrast, Wood and Williams (2013) found that time status had no effect on first-year persistence for Black men. However, a key difference between Hagedorn

et al. (2001) and Wood and Williams (2013) was that the latter employed a dichotomous measure of time (e.g., full time, part-time) while the prior examined the total number of credit hours in a semester. Thus, it seems that a finer level of data is warranted in further studies, which can elicit the nuanced effect of time status on student success. Vasquez Urias (2012) extended scholars' understanding of time status in that she focused on how time status at the institutional-level influenced graduation rate outcomes for Latino men. Using data from the Integrated Postsecondary Education Data System (IPEDS), Vasquez Urias compared graduation rates for Latino men by institutional characteristics. A key finding from her study was that Latino men who attended community college part-time graduated at higher rates than those colleges with higher mixed part-time and full-time enrollment. Thus, fluctuations in enrollment were more deleterious than part-time enrollment. However, as expected, the highest graduation rates for Latino men were at colleges with greater levels of full-time enrollment.

Student age has also been examined as a predictor of success outcomes for men of color (Perrakis, 2008). This is a particularly important consideration, given that students in community college are usually of nontraditional age. For example, the average age of a Native American, Black, and Latino male in the community college is 27.1, 28.0, and 24.8 years old, respectively (NPSAS, 2012b). Typically, literature on student success has shown that older students face different challenges than younger students, namely, difficulties in becoming incorporated into the campus setting and external obligations. Like other background characteristics, the effect of age on student success has produced incongruous findings. Using a national sample of men from the Beginning Postsecondary Students Longitudinal Study (BPS), Wood (2012c) examined predictors of 6-year persistence and attainment. In his research, age was not found to be significantly predictive of success for Black men. Moreover, Mason (1998) did not find age to have a significant effect on first year persistence. Similarly, Hagedorn et al. (2001) also did not find age to have a significant effect on first semester persistence for Black men; however, age was a significant predictor of persistence for subsequent semesters. Specifically, for their second and third semesters in college, older students had lower odds of persistence than their younger peers.

Hagedorn and colleagues' study likely lends more insight than those by Mason (1998) and Wood (2012c) as their research teased out model differences across semesters as opposed to employing single (stationary) models of success. Yet a different perspective on the role of age on student success is seen in research by Wood and Palmer (2013b). Wood and Palmer conducted one of the few studies on Black men focused on transfer, save Sutherland (2011) and a conceptual article by Harper (2009). Using data from the Community College Survey of Student Engagement (CCSSE), Wood and Palmer examined factors that were predictive of students' likelihood (or intent) to transfer. They found that those who reported being very likely to transfer were younger than those who did not indicate transfer as a goal. Given the inconsistency in findings about age and its relationship to success among men of color in community colleges, more research is warranted in this area.

Aside from age, another defining characteristic among men of color in community college is income. Overwhelmingly, men of color in community colleges are *low-income*. In fact, 58.5 % of Black men and 59.2 % of Native American men are identified as being low-income students, based on federal TRIO definitions of an income of $25,000 or below (NPSAS, 2012c). Moreover, the average adjusted gross income (AGI) of Native American and Black men in community colleges is below $30,000 per year. For Latino men, their average AGI is slightly higher, at approximately $35,500 per year (NPSAS, 2012d). Given this, scholars have explored whether income has any relationship with student success.

Curiously, Mason (1998) found that Black men who are from higher income families persist at lower rates; this relationship was typified by a strong negative effect. Moreover, he found that increased costs for college were associated with greater levels of persistence among these men. Wood and Williams' (2013) analysis of factors predicting first-year persistence for Black men illustrated somewhat conflicting findings. They found that while increased finances illustrated a negative effect of persistence, that the relationship itself was not statistically significant. In like manner, Wood (2012c) found that income percentile rank illustrated a negative, but non-significant effect on 6-year persistence and attainment. Thus, evidence in this area, while relatively inconsistent, seems to indicate that income may not be a particularly salient consideration in male of color success in the community college.

However, being confident about one's area of study has been identified in several studies as a predictor of student success. For example, Hagedorn et al. (2001) found that higher levels of *major certainty* were positively predictive of second and third semester persistence for Black men. While Hagedorn and colleagues did not find a relationship between major certainty and first semester persistence, research from Mason (1998) indicated that major certainty had a positive effect on first semester persistence. Mason developed the first empirical model of Black male persistence in the community college. He used a sample of Black male students attending an urban community college to test the validity of Bean and Metzner's (1985) model of nontraditional student attrition on this population. Mason found that there were differential levels of persistence based on student goals (e.g., job skills, transfer, personal interest). Unfortunately, neither his peer-reviewed journal article nor the dissertation from which the article is based delineates specific goals associated with greater levels of persistence. Moreover, the pursuit of a certificate or degree was not available as response categories for participants. As such, further research is needed to shed more light on findings in this area.

Notwithstanding, research has shown that students' goals must be internalized in order to serve as motivation to succeed in college. Specifically, students who reported that completing their collegiate studies was important to them personally had greater odds of second and third semester persistence (Hagedorn et al., 2001). In like manner, Mason (1998) found that students who had goals (goal commitment) and had a high level of commitment to those goals (goal internalization) were significantly more likely to persist. Of course, there are other types of goals for students in community college. While students may have goals at the institution itself (e.g., job skills, transfer, associate's degree), they often have goals beyond the

institution. For example, when asked about their campus goals, the vast majority of men of color in the community college reported that their primary goal was to transfer. However, when provided post-community college degree options, Wood and Williams (2013) found that the highest percentage of Black men desired to earn a bachelor's degree (45.8 %). However, men also expressed interest in more advanced studies to eventually earn master's/professional degrees (20.1 %) or doctoral degrees (8.3 %). While the percentage of these men who will eventually complete higher levels of education is markedly low, higher degree expectations (when isolated from environmental variables), were found to be significant predictors of first-year persistence. However, the effect of higher degree expectations on persistence was reduced when environmental factors (e.g., hours worked per week, supporting others) were removed.

Parent's highest level of education has also demonstrated utility, across several studies, as a significant predictor of Black male persistence, degree aspirations, GPA, and intent to transfer (Bush & Bush, 2010; Wood & Palmer, 2013b). For example, research has shown that first generation, college-going Black men reported a lower likelihood (or intent) to be very likely to transfer. Interestingly, results from Hagedorn et al.'s, (2001) work indicated that greater levels of parental education were a negative predictor of first and second semester persistence. In addition, though the coefficients remained negative (yet non-significant), no effect was found between parental education and persistence beyond the second semester. Too little research has been conducted in this area to draw conclusions on the effect of parental education on student success. Possibly, this is due to the overwhelming majority of men of color in community colleges who are first-generation collegians. For instance, 63.9 %, 71.8 %, and 79.1 % of Native American, Black, and Latino men enrolled in community colleges are first generation college goers (NPSAS, 2012d).

Finally, *prior academic performance* has shown a marginal influence on persistence for Black men. For instance, Hagedorn et al. (2001) identified a minimal effect of high school GPA on second and third semester persistence for Black men. Apart from this finding, high school GPA was not a determinant of first-semester persistence for this population. Moreover, in a reduced model, high school GPA was not identified as a significant predictor of persistence for Black men. It should be noted that the effect of high school GPA on first-year persistence has been found to be mitigated by the influence of external variables. Specifically, Wood and Williams (2013) used data from the Educational Longitudinal Study (ELS) to create a comprehensive model of Black male persistence in the community college. Using a hierarchical regression approach, they found that high school GPA was a positive predictor of first year persistence in models where only background, social, and academic factors were considered. However, when environmental variables were introduced, the effect of high school GPA on first-year persistence was eliminated. This is similar to their findings previously articulated for major certainty.

Perrakis (2008) extended the importance of high school GPA beyond measuring persistence to include achievement as well. Using data from the Los Angeles Transfer and Retention of Urban Community College Students (TRUCCS) project, Perrakis identified several predictors for Black male achievement. She found

that high school GPA was a significant predictor of achievement for Black men in her sample, as well as other students in her sample (including women and White men). While high school GPA is certainly one valid measure of prior academic performance, research has also shown the importance of course-taking considerations. For instance, in addition to findings regarding the importance of high school GPA, (Perrakis) also found that completion of a calculus course in high school was a strong predictor of achievement for Black male students.

Altogether, empirical results reported in this section delineate the role that background and defining variables have on student success for men of color. In many cases, the findings themselves presented nuanced and incongruous effects. These findings illustrate the importance of future inquiry that continues to delineate the influence of these factors on male of color success. Another aspect of 'inputs' in Harris and Wood's (2014b) socio-ecological model are explored in the next section. These factors focus on the way societal messages shape outcomes for men of color in community colleges.

Societal Factors

Much of the research on men of color in community colleges has acknowledged the influence of societal factors (e.g., economic conditions, prejudice, racism, stereotypes) on the lives of Black men as a motivating factor for their research. Primarily, societal factors are used as a lens to help frame problem statements, provide background context, and extol the significance of a given line of inquiry. However, while widely acknowledged as integral in guiding research on men of color, little research has focused explicitly on the role of these factors in influencing their success in community colleges. In fact, the influence of societal factors on male of color success was an inherent assumption evident within nearly every study examined. For example, Wood and Hilton (2012c) examined problem statements articulated by researchers to justify conducting studies on Black men in community colleges. They identified a number of societal concerns that socialize and shape social perceptions of Black men, including: economic barriers, racism, improper guidance, health related issues/risk, violence, high levels of incarceration, criminal justice policies, and media portrayals. Wood and Hilton noted that scholars had made connections between these factors and academic barriers (i.e., outcome rates for remediation, retention, graduation, transfer) facing Black men.

As noted by Harris and Wood (2013), one integral component of societal factors facing Black males is capital identity projection. It is also one of the few empirical-based factors explicated in research that connects societal factors to student success. This concept emerges from a qualitative, grounded theory study focused on factors that influence academic success for Black men in community colleges by Wood and Essien-Wood (2012). They extended this concept as a rationale to explain circumstances where men pursued an image of capital attainment, even to the point of their personal and academic detriment. One example of capital identity

projection would include a student spending financial aid monies on goods (e.g., clothing, jewelry, cars) instead of securing course books or paying rent. As such, capital identity projection is a psychosocial disposition emanating from a capitalistic value system where individuals are socialized to pursue an image of economic success, even to the point of their own detriment. According to Wood and Essien-Wood, when an image of success is portrayed, "this projection is a byproduct of a capitalistic value system where mores of individualism, glory-seeking, and economic success are fostered and idealized as a proxy for happiness, self-worth, and life achievement" (p. 987). In particular, they asserted that the conflation of these ideals (e.g., happiness, self-worth, achievement) is promoted, framed, and promulgated through the media as a means to spur spending and sustain the economic base (capitalism).

Wood and Essien-Wood (2012) argued that capital identity projection was typified by four interrelated premises. First, individuals pursue an image of success, often irrationally. This could include purchasing items (e.g., expensive clothing, car rims) to display an image of success, instead of tending to more basic needs (i.e., paying the light bill or rent). Second, individuals erroneously conflate the concepts of capital attainment, happiness, and self-worth. In this light, some Black men reported that individual worth and happiness was directly tied to ownership and display of goods. Third, given this conflation, the notions of glory seeking, materialism, and consumerism become interiorized, being integrated into one's inner values. Fourth, and most importantly, capital identity projection is an individual's socialized response to a capitalistic value system that is propagated through the capitalistic marketing enterprise (e.g., television, radio, magazine, videos). This enterprise is said to "access and shape archetypes and stereotypes around identity in order to foster materialism and facilitate consumerism" (p. 992). In particular, for men of color, Wood and Essien-Wood noted that the archetypes of stereotypes surround their racial and masculine identity. In essence, capital identity projection explains the societal forces that contribute to the racial and masculine identities (e.g., achievement orientation, competitive ethos) of Black men that influence their success in college.

Clearly, more research is needed to better understand how societal factors shape how men of color encounter community colleges. Socialization around the meanings of school for men of color are wrought prior to their entry into a community college; however, the ways in which these internalized societal messages influence student outcomes remains unexplored. In the next section, the first of the four socio-ecological domains is examined, beginning with the non-cognitive domain.

Non-cognitive Domain

As noted by Harris and Wood (2014b), a core component of the non-cognitive domain is intrapersonal factors. Intrapersonal factors refer to psychosocial dispositions that are manifested within students as a result of the campus climate

and their external lives. These non-cognitive factors interplay with the academic domain, collectively affecting student success outcomes (Palmer & Strayhorn, 2008). Among the myriad of potential intrapersonal factors, the research on men of color has focused on action control, degree utility, locus of control, and satisfaction.

Intrapersonal Factors

Scholars have identified *action control* as in integral factor affecting student success in college. This concept, referred to synonymously as 'focus' or 'effort', refers to the degree of attention students direct toward their academic goals (Wood & Palmer, 2014). In several studies, Black men cited this concept as a chief factor influencing their success in the community college (Glenn, 2003; Wood, 2010; Wood & Hilton, 2012a). Participants in Wood and Hilton remarked that being focused in college required several factors including the creation of environments favorable to studying, isolating themselves from in- and out-of-school distractions from peers, making a mental decision to commit to college, being resilient to collegiate barriers, and having an increased perception of the usefulness of college.

Another recurrent theme in the literature on men of color in community colleges is the critical role that *degree utility* has on student success (Mason, 1998; Wood & Hilton, 2012a). Degree utility refers to students' perceptions of the worthwhileness of their collegiate endeavors. Essentially, scholars have suggested that greater perceived utility of college is associated with greater success in school. Specifically, Wood and Hilton commented that degree utility increases students' focus (action control), thereby enabling their success. In their study, men explained that the negative messages they received from campus peers and faculty communicated that college was not a worthwhile endeavor for them. As such, students provided an extensive array of recommendations to improve outcomes for Black men (e.g., creating awareness of campus resources, bringing role models to campus, establishing a Black male success program), all with the intended outcome of increasing men's degree utility. These recommendations are particularly important given findings from Mason who found degree utility had a strong positive effect on first year persistence for Black men.

Moreover, Mason (1998) identified helplessness/hopelessness as a critical consideration in student success. Specifically, he found that Black men in urban community colleges persisted at lower rates when they exhibited higher levels of helplessness. He suggested that perceptions of helplessness "summarized the belief of many students that no matter what they did or achieved they would not get a job or be successful" (p. 758). This notion, expressed by Mason is directly associated with *locus of control*, students' perceived control over their academic futures. Research on locus of control discusses the difference between internal and external locus. Wood, Hilton, and Hick (2014) noted that internal locus suggests that students feel a greater sense of control over their academic pursuits, while an external locus communicates a sense that factors outside of their control have a greater effect

on their success. Interestingly, a perceived need to control one's academic future can also have a negative influence on success. For instance, Sáenz et al.'s, (2013) qualitative study of Latino men in Texas found that men, in an effort to maintain control over their lives, refused help from others. They noted that this occurred, even to the point of their own detriment, in an effort to maintain a sense of control.

One of the more explored areas of research on men of color in the community colleges deals with their degree of *satisfaction*. To date, three studies have explicitly focused on satisfaction among these men (Mason, 1998; Strayhorn, 2012b; Wood & Vasquez Urias, 2012). Mason (1998) found that satisfaction among urban Black men was a significant positive predictor of persistence. Though not informed by Mason's work, Strayhorn (2012a, b) drew from the research of Tinto (1975, 1993) and Astin (1993) to suggest that satisfaction was a predictor of retention for Black men in the community college. Using a small sample of Black men (N = 127) who completed the College Student Experiences Questionnaire (CSEQ), Strayhorn (2012b) examined variables that were predictive of their satisfaction in college. He found that being younger and having a greater commitment to one's family were negative predictors of satisfaction. However, the most salient finding from Strayhorn was that increased levels of social integration with students were negatively predictive of their satisfaction with the college. As described earlier, this finding corroborates findings from Bush and Bush (2010) and Wood (2012a), suggesting that social integration is a negative predictor of persistence and achievement among Black men.

Much more research is needed on the influence on non-cognitive intrapersonal variables on male of color success in the community college. One rationale for the lack of research in this area is that most national surveys (e.g., BPS, NPSAS, CCSSE) collect little, if any information on non-cognitive outcomes. One glaring consideration missing from this synthesis is self-efficacy. While many studies mentioned self-efficacy as being important to male of color success, empirical works connecting self-efficacy to student success for men of color in the community college are noticeably absent.

Identity Factors

Another core element of Harris and Wood's (2014b) non-cognitive domain is identity. While only a few studies explicate the importance of identity on student outcomes, those that do indicate that identity is an integral factor to success (Sáenz et al., 2013; Wood & Essien-Wood, 2012; Wood & Hilton, 2012b). Specifically, explorations of the role of identity on student outcomes have been situated in several key areas, masculinity and spirituality.

Masculinity has been shown to be an integral consideration in male student success and development (Harper & Harris, 2010). While not focused explicitly on men of color, a qualitative article by Harris and Harper (2008) explicated the

importance of four primary masculine domains influencing student success: (a) men's perceptions of school as a feminine domain; (b) men's desire to engage in competition with one another; (c) serving as breadwinners for their families; and (d) avoidance of help seeking. More specifically, they noted that men are socially constructed throughout their upbringing to perceive school as a domain for women, not men. Thus, when a male student becomes fully engaged in school, they are countering dominant perceptions of school as a feminine domain. Moreover, they noted that men are competition oriented. As such, when male students do not perform at the level of their other male peers in school, they may feel inclined to withdraw their interest in school and place it in other areas (typically outside of school) where they can be competitive. Further, their research noted that men are often expected to serve as breadwinners for their families. Given this, engaging is school may not necessarily be seen as the most effective and immediate way to earn a living. Finally, they noted that men often avoid seeking out help from others, as doing so may make them appear weak. Thus, engagement with faculty members and critical support staff (e.g., academic advising, tutoring, library) may be complicated by the desire to avoid help-seeking behaviors. They argued that healthy conceptions of manhood in these areas are critical to male student success.

Similarly, one core study examining the relationship between *masculinity* and student success was conducted by Sáenz et al. (2013). This study is unique as it represents one of only a few studies focused on the Latino male experience in community colleges. Sáenz et al. conducted an extensive qualitative study of Latino men in seven Texas community colleges. Speaking with 130 Latino men via 23 focus groups across a 2-year period, the researchers investigated how identity influenced the college experiences and outcomes of these men. Several key themes emerged from this study, including competitive ethos (referred to as a focus on control, power, and competition), help-seeking avoidance, and achievement orientation. With regard to competitive ethos, Sáenz et al. noted that men focused on maintaining a sense of control over their life circumstances (referred to earlier as locus of control) and power over others. These portrayals of masculinity were viewed as being connected to a competition orientation.

A competitive ethos suggested that the men in their study sought to compete to be the best they could. However, this drive also heightened fears that they would fail. Sáenz et al. (2013) noted that while men displayed a sense of pride and confidence, they also had increased levels of anxiety towards failure. Thus, when faced with a likelihood of not succeeding, some men demonstrated "a fight or flight response" where they would turn away from school and focus on their families or work, to evade their fears (p. 12). Moreover, the researchers found that men often avoided help-seeking behaviors, even when they recognized that they were in need of additional support. Their participants attributed avoidance of seeking help to masculine pride (machismo), which dominated their portrayals of masculine identity. However, machismo was recognized as being both a contributor and inhibitor of success, as men noted that their machismo provided them with an internal drive to succeed, work harder, and reach theirgoals. Thus, machismo

was perceived as a connection to both, avoidance of help seeking and as a source of resiliency. In a somewhat similar way, Sutherland (2011) noted that Black immigrant men were socialized by their communities to "fight for" their educational goals (p. 274).

Scholars have noted that Black men in community colleges are preoccupied with a desire to achieve (Sáenz et al., 2013) to be "somebody big", "of importance", or "well-respected by others". According to Sáenz et al., achievement was organized around notions of status and money. Specifically, men sought opportunities "to make quick and easy money" (p. 13), particularly those men who had families. This finding is directly related to Wood and Essien-Wood's (2012) notion of capital identity projection. Connected to their desire to achieve, participants in this study sought out employment opportunities. The pressure to be a financial provider decreased their perceived usefulness of a college degree (described earlier as degree utility). Instead, men made decisions based on immediacy of attaining achievement status, as they did not equate education and financial success as being interconnected.

One often-overlooked aspect of identity in the context of education is *spirituality*. Research from Wood and Hilton (2012b) demonstrated that spirituality is not an important driver of academic success for all Black men. However, they noted that for those who did attribute spirituality to their success, such was reported as being a critical facilitator of their achievement. Findings from interviews with Black men (most of whom described themselves as Christian), revealed five primary ways in which the participants believed spirituality supported their academic success. First, they noted that God served as a confidant for challenges they faced, providing them with an outlet to dialogue with regarding challenges they encountered in academic settings and alleviating feelings of isolation and alienation in community college environments. Second, they believed that the pursuit of excellence was an important Christian value, which drove them to perform at their highest level of ability and to focus on school. They noted that these notions of excellence were reinforced by family members, clergy, and church members who constantly encourage them to succeed. Third, students noted that spirituality provided them with a purpose for their lives. Students noted that they believe that God had a purpose for their life and that their enrollment in school and selection of majors was guided by this purpose. They also noted that God helped to clarify their goals, which provided them with enhanced certainty and an internalized commitment to their academic pursuits. Fourth, students stated that spirituality served as a source of resiliency that allowed them to overcome barriers encountered in college. In particular, the men in their study mentioned that praying to God when faced with challenges and believing in prayer enabled them to endure and excel in college. Finally, participants also commented that their spiritual commitments provided them with the necessary motivation to minimize relational distractions from peers, which could encourage them to engage in behaviors that would distract from their studies (e.g., partying, substance abuse, womanizing).

Interestingly, while two empirical studies were identified as relevant to identity (as reported in this section), no research has been conducted on men of color in the community college to relate their racial/ethnic identities with student outcomes. Moreover, there is also a need for research that explores the intersection of racial/ethnic identity and other identities (e.g., masculine, spiritual, academic) in relationship to student success. As with the intrapersonal factors described in the prior section, little empirical research has connected identity to student outcomes. More work in this area is necessary to better understand how male of color identities shape their success in college. While more limited research is evident in the noncognitive domain, scholars have been more diligent in exploring academic factors in the context of men of color success. The next section explores work in this area.

Academic Domain

Studies employing both qualitative and quantitative methodologies have extolled the importance of *faculty-student interaction* on student success for Black men in community colleges (Bush & Bush, 2010; Wood & Williams, 2013). For instance, in a qualitative study employing interviews with 28 Black men, Wood and Turner (2011) asked participants to describe factors that they believed influenced their academic success, particularly regarding their academic achievement and persistence. Overwhelmingly, students reflected on the importance of faculty-student interaction, with the vast majority of participants noting that these interactions had a positive effect on their success. Participants suggested that if/when interactions with faculty took place, it was typically beneficial to their success. This is an essential point given that Wood (2010) found that Black men reported being avoided by faculty and were more likely to interact with campus service staff, groundskeepers, and maintenance workers than they were with their professors. Wood and Turner's (2011) participants commented on the benefits of formal and informal interactions taking place inside and outside of class time. Specifically, they articulated relational characteristics of faculty-student ties that were beneficial to their success. They noted that faculty members who were friendly from the onset, regularly inquired about their academic progress, listened to their concerns, were attentive in addressing performance concerns, and provided encouragement, were integral to their success. However, while participants described these characteristics as important to their academic success, they were not necessarily indicative of the typical faculty-student interactions experienced by Black men in community colleges. For example, Bush and Bush (2010) reported that Black men were less likely to have contact with faculty members, inside and outside of class, than their peers. However, they noted that when Black men did interact with faculty, the benefits are manifold. Specifically, greater levels of faculty-student interaction were identified as positive predictors of persistence and achievement rates among Black men.

Research from Wood ([2012c](#)) provided quantitative insight into the effects of faculty-student interaction on Black male success. Specifically, using data from BPS, Wood found that students who had informal or social contact with faculty members had 283 % greater odds of persisting or attaining a certificate or degree. In contrast, while Black men who discussed academic matters with faculty members outside of class had slightly greater odds of persistence or attainment, this type of interaction was not a significant predictor of their success. However, using a different data set (ELS) and employing a more comprehensive set of predictors, Wood and Williams ([2013](#)) found that the time students spent talking with faculty about academic related matters (outside of class) had a positive effect of first-year persistence. As evident across the studies identified here, it is apparent that faculty-student interaction is a key ingredient to student success. Given this, Wood and Ireland ([2014](#)) used data from CCSSE to examine determinants of faculty-student engagement. In general, they found that students who engaged in critical support resources (e.g., reading remediation, learning communities, study skills courses, orientation) had significantly higher levels of faculty-student interaction. This research reinforces the importance of information and targeted learning experiences in fostering positive linkages between faculty and students.

Another important consideration in male of color success in the community college is *service usage*. Wood and Williams ([2013](#)) found a positive effect of using *academic advising* on first year persistence for Black men. Specifically, they found that Black men who used academic advising had 69.1 % greater odds of persistence than those who did not. That being said, the effect of academic advising on persistence was eliminated when environmental variables were introduced in subsequent models. A somewhat more perplexing finding was identified by Wood and Palmer ([2013b](#)) who found that greater levels of academic service use by Black men in the community college was associated with a lower intent (or likelihood) to transfer. They postulated that students who are more engaged in using academic services (particularly academic advising) might have a higher level of understanding of transfer expectations, and thus, may not perceive transfer as a realistic and attainable goal.

In addition to using academic services on campus, student success is also influenced by the time students spend engaged in their academic coursework, particularly via *studying*. Mason ([1998](#)) examined time on task using three variables; students' self-reported adequacy of study habits, absenteeism, and hour spent studying. He found that study habits had a positive relationship with persistence while absenteeism illustrated a strong negative effect. Moreover, hours spent studying had a strong positive effect on persistence. These findings were corroborated by Wood and Williams ([2013](#)), who found that time spent studying in the school library was a significant positive predictor of first-year persistence.

Taken together, empirical findings in the academic domain indicate that men are more successful when they engage with faculty, use advising services, and study. The next section focuses on the environmental domain. This domain includes a set of considerations that influence the factors described in the academic domain.

Environmental Domain

The environmental domain encompasses factors that occur outside of college that affect student success in college. Research by Wood and Williams (2013) illustrated the essential role this domain had in predicting student success for Black men in community colleges. Specifically, they found that four variables (e.g., finances, hours worked per week, life stress, supporting others) accounted for 54 % of the variance in first-year persistence. As such, this domain represented a salient consideration in understanding factors that influenced success for men of color in the community college.

One primary form of external commitments is *familial obligations*. Using data from BPS, Wood (2012c) examined predictors of first- and third-year persistence for Black men. This study was unique in that Wood compared predictors of persistence for Black men to their non-Black peers. For first-year persistence, Black men who reported having family responsibilities had significantly greater odds of leaving college early (by 453 %). However, in context of 3-year persistence, these men had lower odds, by 68 %, of leaving college for familial responsibilities. Wood concluded that family obligations were a key inhibitor to persistence for Black men, but that those who left college due to family responsibilities did so early on. One aspect of family obligations is responsibility of providing support (particularly financial support). Following in line with research from Wood (2012c), Wood and Williams (2013) used ELS data to demonstrate that Black men who had a responsibility to support others (e.g., children, parents, grandparents) had significantly lower odds (by 74.4 %) of first-year persistence than those without the responsibility to do so.

Another primary external commitment that many men of color have is *employment*. As with other community college students, a large percentage of men of color work while attending community college. Accordingly, research from Wood and Palmer (2013a) indicated that primary personal goals among Black male community college students included steady work and being financially well off. In fact, these men were found to illustrate greater odds than their White and Asian male peers of placing a high importance of being financially well off. In their research, Wood and Williams (2013) found that within a sample cohort of first-time Black male community college students, nearly 56 % worked. Moreover, 21.6 % of these men worked between 31 and 40 h per week. Wood and Williams also found an interesting relationship between hours worked per week and persistence; that the more hours students worked per week, the greater their odds of persistence. However, they noted that the positive linear trend was only stable for students working up to 21–30 h per week, with standard errors becoming unstable after this point. Wood and Williams argued that although college professionals should encourage Black men to work, they should limit the number of hours worked per week to part-time employment. This recommendation is in line with research on other college student populations (Pascarella & Terenzini, 2005).

Findings from Wood, Hilton, and Lewis (2011) provided additional insight into optimal employment circumstances for Black men. Using data from the National Postsecondary Student Aid Study (NPSAS), Wood et al. examined Black male perceptions of employment on academic success. Specifically, they were interested in determining characteristics of employment that Black men attributed as having a positive effect on their academics. Results from their analysis revealed that employment was viewed as having a positive effect on academic success when their work experience helped them in their coursework, provided relevant work experience in their field of interest, and did not limit the total number of courses they could take. Furthermore, they found that work was attributed as having a negative effect on success when men worked to pay their educational expenses. Collectively, these findings suggest that work can be beneficial for Black men when aligned with their coursework and career objectives. It should be noted that while employment *can* have a positive effect on persistence, the same might not be said for transfer or faculty-student engagement. Specifically, Wood and Palmer (2013b) found that employment had a negative effect on transfer intent, where Black men who reported being very likely to transfer, worked fewer hours per week.

Several scholars have identified stress *and stressful life events* as significant determinants of persistence. Specifically, Black men with greater levels of stress (Mason, 1998) and greater numbers of stressful life events (Wood, 2012c) are significantly more likely to dropout from community college. For example, Wood found that Black men who left college prematurely had greater odds (than their non-Black peers) of citing personal and other reasons as rationales for their departure. Though the dataset employed in his research (BPS) did not clearly delineate what was meant by 'other reasons', we postulate that personal and other reasons were directly related to stressful life events. More clear evidence on this concept is revealed by Mason (1998) and Wood and Williams (2013), who focused on stress occurring in one's personal life, unrelated to their college experience. Wood and Williams, employing data from ELS, also inquired about the relationship between life stress and persistence. Their results indicated that respondents who reported a higher total number of stressful life events in the past 2 years had significantly lower odds of first-year persistence. Similarly, Mason found that stress in one's life was a strong negative predictor of persistence, which was (at least based on his theoretical model) a direct outgrowth of environmental challenges (e.g., employment, family responsibilities, finances) faced by Black men.

In all, research in the environmental domain has shed much light on factors that affect success for men of color in college. However, one challenge of research on environmental factors is that colleges often struggle to address environmental challenges as they occur external to the institution. Thus, scholars have begun to focus their efforts on explicating the role of the institution in supporting male of color success. The next section explains this literature as collated under the campus ethos domain.

Campus Ethos Domain

Engrossed by outcome disparaties for men of color, historically, the portrayals of Black and Latino men in the scholarly literature have presented them via a deficit lens. This lens blames them, their families, and their communities for disparate outcomes (i.e., overrepresentation in prison, high educational attrition rates, overemphasis on athletics), without taking into account the large economic and social conditions that fostered these outcomes. Moreover, much of the presentations of these men are informed by stereotypical portrayals of Black men (and other men of color) as ignorant, lazy, and brutish (Wood & Hilton, 2013). Yet, as noted by Bush, Bush, and Wilcoxson (2009) and as explicated rigorously by Bensimon (2007), institutions must take responsibility for student outcomes, realizing that their programs, policies, and practices foster environments that directly influence the success of students (Harris, Bensimon, & Bishop, 2010). A metaphoric analogy employed by Bush (2004) compares the community college to a fig tree and Black males to the fruit borne by the tree. He suggests that good institutions will bear good fruit (positive student outcomes), while ineffective institutions will reap bad fruit (abysmal student outcomes). Given this, when men of color experience disparate outcomes in community colleges, the institutions that fostered these outcomes should be examined as the primary locus of causality, not the students who are served by these institutions. With this context in mind, a focus on institutional responsibility has become increasingly evident in the scholarship on men of color in community colleges.

One critical example of this scholarship is research focused on the concept of *sense of belonging*. According to Strayhorn (2012a), sense of belonging refers to "students' perceived social support on campus, a feeling or sensation of connectedness, the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the group (e.g., campus community) or others on campus (e.g., faculty, peers)" (p. 3). In essence, belonging encapsulates students' feelings of mattering in the college environment.

Glenn (2003) articulated the importance of belonging for Black men via case studies at Texas Community Colleges. In this research, Glenn selected one institution representative of high (top quartile) Black male graduation rates and another with low (bottom quartile) rates. For the community college in the top quartile, students attributed Black male success to a campus climate that was 'friendly' almost 'church'-like, where college professionals (e.g., faculty, staff) were helpful to students, spent individual time with students, and made them feel welcomed. All told, these notions created a culture of belonging. Similarly, Perrakis (2008) found that a general sense of belonging in the community college was predictive of academic achievement (GPA) for both White and Black men. However, key to her findings was that sense of belonging was more integral to male achievement than female achievement. Interestingly, she noted that men were more likely to need a sense of belonging to succeed than women.

Scholars have also explored the notion of campus ethos through the notion of *campus racial/gender climate*. Research has shown that Black men, in comparison to their male peers of differing racial/ethnic backgrounds, have lower levels of perceived institutional support (Bush & Bush, 2010). Often, scholars have attributed this lack of support to stereotypes and misperceptions centered on male of colors' racial/ethnic and gender identities. Wood and Hilton (2012a) noted that Black men are perceived negatively by their peers and faculty who often view them as intellectually inferior. They noted the importance of having successful Black male role models in place that could serve to disrupt these perceptions of inferiority and demonstrate that they can succeed. A healthy campus racial climate is often typified by diverse student interactions. Given this, Wood and Palmer (2013b) examined whether having *exposure to diversity* (e.g., interacting with diverse peers) had an effect on student outcomes. Using multilevel modeling with CCSSE data, they found that Black men who had greater levels of exposure to diversity had significantly greater odds of reporting that they were very likely to transfer.

Campus services and resources have been extolled as an essential component in the student success puzzle for men of color. One key example of this is derived from Wood and Hilton (2012a). They conducted interviews with 28 Black males attending community colleges and inquired about recommendations students had for improving outcomes for Black men. A central theme derived from the interviews was *awareness of campus resources*. Specifically, students noted that Black men were often unaware of campus resources (e.g., advising, mentoring, tutoring, counseling). They noted that this was a considerable issue as such resources were essential to their success in college. However, while awareness of campus resources is important, institutional commitment to student use of campus services is a necessary outgrowth. Glenn's (2003) study of high and low performing Texas community colleges identified a number of institutional services and resources that were key to Black male success. Specifically, in the qualitative portion of his study, students identified services such as tutoring, freshmen-only advising programs, orientation for credit, individual counseling, attendance monitoring, intrusive advising, and minority-based retention programming as factors affecting their success. Of these activities, institutions in the top quartile for Black male graduation rates scored the latter two strategies (e.g., advising, minority-based programming) as the top contributors to retention. Glenn remarked that intrusive actions were necessary to ensure student success. For example, with respect to academic advising, one respondent in the study noted that students were encouraged to file for graduation. This was important as many individuals may not have been fully aware of their academic progress. In essence, they could be closer to their academic goals than they realize. Given this, all students at the institution who completed at least 45 credits received a letter from the registrar requesting them to file for graduation. Moreover, students who had completed this number of units but were no longer enrolled at the institution were contacted, and encouraged to complete their studies. Glenn also noted the important role that an enrollment committee had in facilitating success. Among other duties, the committee required individual meetings with students

who had GPAs below C-level at the college, and interviewed the students before permitting them to continue their studies at the institution.

As evidenced within this section, institutions also bear the responsibility for student success. While more research is needed in this area, inquiry relevant to campus ethos is essential, as the findings have the added benefit of being useful for practice. This section has discussed extant research men of color in community colleges. This context is critical because it provides a foundation for this subsequent section of this chapter, which focuses on future direction for scholarship on men of color in community colleges.

Directions for Future Scholarship

Given that research on men of color is a growing, yet underdeveloped area of inquiry, there are a myriad of recommendations for future research that would be beneficial (Ray, Carly, & Brown, 2009). First and foremost, given that the vast majority of research on men of color in the community college has focused on Black men, there is a dire need to expand the literature base to focus on other historically underrepresented and underserved men. In particular, given that Latino men are among the fastest rising populations in the nation, research on these men is critical (Vasquez Urias, 2012). Moreover, one of the challenges of the current research on Latino men in community colleges is that these students are examined as a single homogenous group. However, Latino men emanate from numerous ethnic and cultural groups (e.g., Mexican/Mexican-American, Guatemalan, Salvadorian, Costa Rican, Cuban, Puerto Rican, Dominican, Haitian, Colombian, Ecuadorian, Bolivian, Peruvian, Chilean, Argentinean, Uruguayan). Thus, while scholarship on Latino men is needed, this scholarship should be attuned to within group differences. In addition, research on Native American and Asian American men is also needed. The need for research is heightened by the near complete absence of research on these men in community colleges. Further, as with Latino men, research on these men should also recognize within group differences. For instance, scholars should be particularly concerned with outcomes for Pacific Islander and Southeast Asian American (e.g., Hmong, Cambodian, Laotian, Vietnamese) men who experience more deleterious outcomes in comparison to their peers (Wood & Harris, 2014).

Scholarship on male of color success in the community college must also expand beyond the myopic focus on persistence. As noted previously, the majority of empirical studies identified for this synthesis investigated student persistence. While persistence is an important outcome to examine, scholars should be attuned to alternate academic outcomes warranting exploration. In particular, scholars should hone in on factors influencing transfer among men of color. Very few studies focused on transfer. Moreover, among the studies that did, one was conceptual (Harper, 2009), another focused on transfer intent (Wood & Palmer, 2013b), and another focused on post-transfer outcomes (Sutherland, 2011). As such, none of the aforementioned studies investigated predictors of transfer among men of color.

Given that transfer remains a core function of community colleges (Nevarez & Wood, 2010), it is essential that scholars better understand what leads to and detracts from transferring to a 4-year college or university among men of color. Another outcome in need of research is completion. While it is important for students to persist in college and to achieve at some respectable level, these outcomes are merely means to the penultimate end, college completion (e.g., attainment of a certificate, degree, or transferring). Unfortunately, most of the research synthesized herein did not take into account completion, except for Wood's (2013) examination of attainment among Black men.

As evidence by the brevity of research reported on non-cognitive outcomes, future research should focus on the role of intrapersonal and identity factors on student success. Much of the quantitative literature on men of color in the community college is inhibited by the lack of focus on non-cognitive variables within national instruments, particularly federal datasets. For example, while scholarship on student success has highlighted the significance of self-efficacy on student success, research on men of color in the community college has failed to explicate similar connections. Missing linkages can also be identified for locus of control, action control, and intrinsic interest as well. In addition to intrapersonal factors, inquiry on identity is also sordidly lacking. While some insights can be found in current literature on the effects of masculinity and spirituality on student success, what exists in these areas is thin. Moreover, no research to date has made explicit connections between academic identity and racial/ethnic identity and success for men of color in community colleges. Aside from focusing on the aforementioned areas of research, given that research on age and academic success among men of color is inconsistent, more research on this topic in needed.

One research tool that may prove more beneficial than other instruments for investigating male of color success in the community college is the *Community College Survey of Men (CCSM)* (Wood & Harris, 2013). The CCSM is an institutional-level needs assessment instrument used at community colleges to investigate factors influencing the success for historically underrepresented and underserved men. The instrument has shown strong validity and reliability in psychometric tests (Roesch, n.d.; Wood & Harris, 2013). The CCSM is theoretically grounded in the Socio-Ecological Outcomes (SEO) model articulated previously in this chapter. A key attribute of this instrument is that it contains items and scales focused on non-cognitive factors (e.g., self-efficacy, degree utility, racial identity, masculine identity) as well the campus-ethos (e.g., sense of belonging, validation, access to services, efficacy of services).

In addition, researchers interested in examining the experiences of men of color in community colleges might consider using qualitative research to better understand the lived realities of these men. Table 10.1 outlines the studies that have been conducted on men of color in community colleges from 1998 to 2013 and Table 10.2 discusses the methodology employed in those studies. As a result of these tables, we discerned that researchers have used more quantitative methods when studying men of color in community colleges than qualitative. While each

Table 10.2 Methods employed in studies of men of color in community colleges

Author	Research type	Methods		Scope	Focus population
		Qualitative	Quantitative		
Bush and Bush (2010)	Mixed methods	Focus groups	Correlation Multiple regression	Single college	Black men
Flowers (2006)	Quantitative	–	Independent T-tests Ordinary least squares regression	National (BPS)	Black men
Glenn (2003–2004)	Mixed methods (Case study)	Interviews Observations Document analysis	Descriptive statistics	State	Black men
Hagedorn, Maxwell, and Hampton (2001)	Quantitative	–	Logistic regression (Backwards elimination)	Single college	Black men
Mason (1998)	Quantitative	–	One-way analysis of variance Kruskal-Wallis analysis of variance	State	Black men
Gardenhire-Crooks et al. (2010)	Qualitative	Interviews Focus groups Observations	–	Four colleges in two states	Black, Latino, & Native American Men
Perrakis (2008)	Quantitative	–	Independent T-tests Factor analysis Multiple regression	District (TRUCCS)	Black men
Pope (2006)	Quantitative	–	Descriptive statistics	National	Black men

Sáenz, Bukoski, Lu, and Rodriguez (2013)	Qualitative	Interviews, Focus group			Latino men
Strayhorn (2012a, 2012b)	Quantitative	–	Correlation, Hierarchical multiple regression	Single college (CCSEQ)	Black men
Sutherland (2011)	Qualitative	Interviews (personal histories)		Single college	Black immigrant men
Vasquez Urias (2012)	Quantitative	–	Kruskal Wallis analysis of variance, Mann-Whitney U test	National (IPEDS)	Latino men
Wood (2012a)	Quantitative	–	Logistic regression	National (BPS)	Black men
Wood (2012b)	Quantitative	–	Ordinary least squares regression, Logistic regression	National (BPS & ELS)	Black men
Wood (2012c)	Quantitative	–	Logistic regression	National (BPS)	Black men
Wood (2013)	Quantitative		Logistic regression	National (BPS)	Black men
Wood and Essien-Wood (2012)	Qualitative	Interviews, Concept mapping, Observations, Focus group	–	Single college	Black men
Wood and Harris (2013)	Quantitative		Factor analysis, Cronbach alpha	Six states (CCSM)	Black, Latino, & Asian men

Table 10.2 (continued)

Author	Research type	Methods		Scope	Focus population
		Qualitative	Quantitative		
Wood and Hilton (2012a)	Qualitative	Journaling	–	Single college	Black men
		Concept mapping			
		Observations			
		Interviews			
Wood and Hilton (2012b)	Qualitative	Concept mapping	–	Single college	Black men
		Interviews			
		Focus group			
Wood and Palmer (2013a)	Quantitative		Logistic regression	National (BPS)	Black, Latino, & Asian men
Wood and Palmer (2013b)	Quantitative		Multilevel multinomial logistic regression	National (CCSSE)	Black men
Wood & Turner (2010)	Qualitative	Concept mapping	–	Single college	Black men
		Interviews			
		Focus group			
Wood, Hilton, and Lewis (2011)	Quantitative	–	Hierarchical logistic regression	National (NPSAS)	Black men
Wood and Vasquez Urias (2012)	Quantitative		Logistic regression	National (BPS)	Black, Latino & Native American men
Wood and Williams (2013)	Quantitative		Independent T-tests	National (ELS)	Black men
			Hierarchical logistic regression		

Note: *BPS* Beginning Postsecondary Students Longitudinal Study, *NPSAS* National Postsecondary Student Aid Study, *ELS* Educational Longitudinal Study, *CCSM* Community College Survey of Men, *CCSSE* Community College Survey of Student Engagement, *CCSEQ* Community College Student Experiences Questionnaire, *TRUCCS* Transfer and Retention of Urban Community College Students, *IPEDS* Integrated Postsecondary Education Data System

methodological approach has value and is appropriate given the research question, Harper and Museus (2007) argue that qualitative research has the propensity of unlocking the door to "treasures long … available but infrequently accessed by professionals engaged in assessment work" (p. 1). Given this, future researchers should be more intentional about using qualitative research when studying men of color in community colleges in order to gain a more holistic understanding of these students' experiences in these institutional contexts.

Moreover, the extant literature on men of color in community colleges does not recognize the diversity among these institutions. For example, while some community colleges are located in suburban areas, other community colleges fall within the institutional context of minority serving institutions, such as historically Black colleges, Hispanic serving institutions, Tribal colleges, and Asian American and Pacific Islander serving institutions. Despite the institutional diversity among community colleges, few research publications recognize this diversity (e.g., Palmer & Wood, 2013; Wood & Palmer, 2014), and research investigating whether men of color have different experiences within diverse institutions of community colleges is non-existent. To this end, future research on men of color in community colleges should be more intentional about examining whether diverse types of community colleges shapes the experiences and outcomes of men of color in these institutions.

While community colleges play a critical role in the educational process and experience of men of color, few researchers have been attentive to the experiences of these men in these institutions. In order to help community college administrators, faculty, and staff have a better understanding of the experience of these students and to implement strategies to increase their success, this chapter has provided a synthesis and analysis of extant studies on men of color in community colleges. This process has resulted in the identification of critical areas of research that need greater attention and clarification as well as providing direction for future scholarship on students in community colleges.

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Chapter 11
Industry-Academia Linkages: Lessons from Empirical Studies and Recommendations for Future Inquiry

Pilar Mendoza

Since the 1990s, stimulated by global competition, American higher education has developed into a complex academic market in which individuals and organizational units increasingly compete for material, human and symbolic resources. As a result, universities have embraced business practices and public policy has shifted towards introducing quasi-markets to incentivize competition among academic institutions (Bleiklie, 2005). As a result, higher education struggles to balance its public mission with market pressures to remain competitive, because "while competition spurs institutions toward production efficiencies, too much drives mission out of their decision making" (Massy, 2004, p. 25). Moreover, there is growing concern that higher education is failing to achieve that balance, and scholars are urging the higher education community to take swift action to protect the public role of higher education (Kezar, Chambers, & Burkhardt, 2005; Newman, Couturier, & Scurry, 2004; Tierney, 2006). Industry-academia linkages are at the center of this debate.

The literature presents mixed views on the benefits and consequences of industry-academia linkages. Proponents argue that these linkages are useful to transfer academic research to society and aid academia by having social-relevant research (De Fuentes & Dutrénit, 2012; Roessner, Bond, Okubo, & Planting, 2013; Sampat, 2003). Also, these linkages develop human capital by incorporating applications in academic programs responsible for training the workforce (Geiger, 2004). Opponents worry that these linkages diminish basic academic science, knowledge for the sake of knowledge, and free dissemination of discoveries (Slaughter,

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Archerd, & Campbell, 2004). More recently, the literature has adopted intermediate positions around notions of complementarity and differentiated boundaries (Link & Scott, 2005; Mars & Lounsbury, 2009; Mendoza, 2007a, 2012; Owen-Smith, 2005; Szelényi & Bresonis, 2014).

First, this chapter presents a comprehensive review of the literature on industry-academia linkages in the U.S. Second, it provides evidence about how these trends generate disparate influences across disciplines and departmental units within disciplines. Using theoretical frameworks such as Stokes' classification of disciplines (Stokes, 1997), academic capitalism (Slaughter & Rhoades, 2004), and Bourdieu's academic field (1986), the third and last portion of this chapter delves critically into the literature. In particular, it examines methodological and conceptual approaches used in past research with particular attention to the nature of structural inequities that permeate higher education. This analysis focuses on academic departments' stratification within disciplines, which represents resource-based hierarchies across national systems, academic fields, university campuses and bourgeoning intellectual markets. It concludes with specific recommendations and directions for future scholarship needed to further understand the nature and implications of industry-academia linkages in STEM fields.

The literature on industry-academia linkages in other nations is rich; however, I limited this chapter to studies on the American higher education system because as I discuss in this chapter, context significantly shapes these linkages, even more when considering different economies, histories, cultures, and governance structures of higher education and national research and development (Dill & Van Vught, 2010). However, many theoretical constructs presented here are useful for applications in other national contexts (Chan & Fisher, 2008; Fisher & Atkinson-Grosjean, 2002; Rhoads & Torres, 2006; Teixeira, Jongbloed, Dill, & Amaral, 2004).

Historical Precedents

In the 1970s, Japan's manufacturing strengthened, which generated growing concerns about U.S. competitiveness in the global market (Coriat & Orsi, 2002; Florida & Kenney, 1990). Also, in this decade, a series of significant technological advances started to emerge at a time when funding for university research began to decline due to large budget cuts for federal research during the Reagan administration after the end of the Cold War. At this time, many started to believe in industry-academia linkages as an alternative to regain competitive advantage in international markets in times of federal research decline and the success of Silicon Valley and Boston's Route 128 as leading centers of electronics innovation. By the 1980s, these two tech regions were composed of a mix of large and small firms, top research universities, venture capital and military funding. Other developments included a host of commercial applications in fields like molecular biology made possible in part thanks to changes in government patent polices, loosening restrictions for public universities to patent. Income from patenting was certainly attractive to

university administrators, who then, started to modify university patent policies in hopes of attracting royalties (Sampat, 2006). In this climate, policymakers came to believe that universities could play a vital role in technological innovation if working closely with the private sector (Stevens, 2004). Therefore, a series of initiatives were undertaken on the part of universities to increase commercially relevant basic research by encouraging technology transfer to industry (Bozeman, 2000).

Many assume that university patenting began with the inception of the Bayh-Dole act; however, university patenting grew modestly a decade before the Bayh-Dole Act and by the mid-1970s, most major academic institutions were already considering setting up technology transfer offices (Mowery & Sampat, 2001). This was possible because before the Bayh-Dole Act, universities were able to patent the results of federally funded research via Institutional Patent Agreements allowing non-profit organizations, including universities, with approved patent policies to retain ownership of inventions resulting from federal funding. Intellectual Property Policies varied greatly among institutions and these agreements involved lengthy bureaucratic procedures on a case-by-case basis by the federal government (Sampat, 2006). Many believed at that time that patents resulting from federally funded research were unexploited due to insecurity regarding their ownership and the lengthy process involved in these (Berman, 2008; Eisenberg, 1996; Mowery, Nelson, Sampat, & Ziedonis, 2004).

The Bayh-Dole Patent and Trade-mark Amendments Act of 1980 streamlined the university patenting of federally funded research by unifying patenting policies across all federal agencies and allowing patenting by academic institutions without specific waivers (Dai, Popp, & Bretschneider, 2005). In the same vein, the Stevenson-Wydler Technology Innovation Act of 1980 provided a similar and more specific infrastructure for technology to flow from national laboratories to industry (Link, Siegel, & Van Fleet, 2011). These acts were the result of lobbying efforts by corporations and university officials who saw an opportunity to profit from the commercialization of inventions sponsored by federal funds (Sandelin, 2007). This was magnified by the lucrative emergence of the biotechnology industry, which even incited the normally uninterested faculty in monetary gains to profit in these fields (Link et al., 2011).

Politically, the Bayh-Dole Act meant the endorsement by the Congress of the ideological position that university patenting and licensing serves the public interest. In many ways, this act formalized, streamlined and proliferated a practice of patenting already in place by a few faculty in certain fields (Berman, 2008). But at the same time, opened the ethos of modern science to new possibilities as commercialization of research by academics became socially acceptable and even desirable in certain circles (Dai et al., 2005). It also represented new sources of revenues for university leaders, who quickly opened Technology Transfer Offices (TTOs) and redirected their Intellectual Property Policies towards monetary gains (Link et al., 2011).

The effect of the Bayh-Dole Act on the commercialization of technology by universities is controversial. In fact, the influence of the Bayh-Dole Act on academic research is difficult to determine because the same year it was enacted, 1980, the

Supreme Court decision in *Diamond vs. Chakrabarty* reaffirmed the patentability of life forms and in 1983 Congress altered the appeals process for patent cases by creating the Court of Appeals for the Federal Circuit. Also, industry research funding increased significantly at universities in the 1970s, adding to the difficulty of estimating the effects of the Bayh-Dole Act. Rafferty (2008) and others (Mowery & Ziedonis, 2001; Sampat, Mowery, & Ziedonis, 2003) found that these changes in the research environment, especially in biomedical and pharmaceutical research in the 1970s, influenced faculty research behavior more than the Act itself.

More recently, and adding to the controversy, Rafferty (2008) found no effect of the Bayh-Dole Act on level and composition of academic research and on the relative importance of industry funding for academic research. The most plausible explanation for this finding according to Rafferty is that federal funding is still the main source of support in academic research, which generally does not align with patentability. Along similar lines, others have argued that the increase in academic commercialization since the 1980s can be attributed to shifts in intellectual property laws and regimes of research funding as opposed to the Bayh-Dole Act (Henderson, Jaffe, & Trajtenberg, 1998; Mowery & Sampat, 2001; Mowery & Ziedonis, 2002). Shane (2004b) further argues that the Bayh-Dole Act shifted university patenting towards fields in which licensing is effective and is likely to bring monetary returns. Nonetheless, others argue that the Bayh-Dole Act increased the likelihood of patenting federally funded applied research (Dai et al., 2005). For example, based on data from biomedical research investments from the U.S. National Institutes of Health (NIH), Toole (2012) found that both market size and NIH funded basic research have economically and statistically significant effects on the introduction of new drugs. Toole also showed that the contribution of public basic research is meaningful during the earliest stage of pharmaceutical drug discovery and found a positive return of 43 % to public investment in basic biomedical research.

Whether the Bayh-Dole Act directly influenced technology transfer or not, the fact is that the statistics show an upward trend towards commercialization of academic research. Since 1991, the Association of University Technology Managers (AUTM) has been surveying technology transfer among member Canadian and American universities. These reports show increases in technology transfer, particularly in the last decade. According to AUTM data, in 1980 there were 517 patents awarded to universities in North America. In 2000, 190 institutions responded to the AUTM survey indicating 626 licenses, of which 454 went to start-up companies. The latest AUTM report presents activity in 2012 regarding university technology transfer separated by Canadian and American institutions. Highlights of this report for American academic institutions show sharp increases including: 14,224 new patent applications filed (+7.2 %), 5,145 issued U.S. patents (+9.5 %), 5,130 licenses executed (+4.7 %), \$2.6 billion (+6.8 %) total license income, 705 startup companies formed (+5.1 %), and 4,002 startups still operating as of the end of FY2012 (+1.9 %).

In sum, the government envisioned that the Bayh-Dole Act would enhance industry-academia linkages, the transfer of university-developed inventions through patenting, and increase awareness of opportunities for commercialization (Grimaldi,

Kenney, Siegel, & Wright, 2011). The passing of the Bayh-Dole Act can been seen as a critical mechanism defining the role of universities in the emergent knowledge economy, although history has shown that universities have a long tradition of technology transfer even before the Bayh-Dole Act. Statistics show that universities continue to be increasingly engaged in technology transfer through patenting and related activities. The following section overviews the role of industry-academia linkages in the knowledge economy.

The Knowledge Economy

According to Bleiklie (2005), traditionally, science has been self-contained and guided by the inquiry itself; today, inquiry is integrated into society and is socially contextualized. Thus, fewer researchers in academia autonomously pursue research questions within disciplinary traditions as more researchers are engaged in applied research defined by stakeholders who are not necessarily in academia but are consumers of knowledge. Bleiklie also argues that today, in many fields, knowledge is validated through its purpose and outcomes, including commercialization, and not so much anymore for the sake of inquiry and procedure. The proliferation of research parks, business incubators, technology transfer offices, and industry-academia linkages exemplifies this shift. Dissemination of knowledge in some instances is changing as well by being controlled by stakeholders outside academia. At the end, this socially-embedded science strengthens the ties between academic inquiry and society. In some instances, as time goes by, more have advocated for the development of unbroken links between scientific research, technology development, product development and profitable economic enterprise. The new ties between science and society mean more public scrutiny and accountability in academia (Gibbons, 1999; Ziman, 2000). Science for knowledge's sake is then compromised and questioned. Instead, science is increasingly validated through use and by society. At the same time, society plays an increasing role in directing research agendas and goals as it is reflected by the research agendas put forward by funding agencies such as the National Science Foundation and the Institute of National Health. At the institutional level, the literature on economics of innovation and management focuses on the role of institutional actors in economic development, such as firms obtaining technologies and expertise from academia, while universities increase their relevance and reputation related to economic development (Welsh, Glenna, Lacy, & Biscotti, 2008).

Here is a concrete example of the interconnectedness of science with society today. In the U.S., trustees or regents are considered the marker signifying university autonomy by buffering the role of the state governing over higher education. However, many boards of trustees are also executives of large corporations with research interests. In this context, Mathies and Slaughter (2013) hypothesized and confirmed that board members are important channels connecting universities to industry and product innovation. Based on network analysis of trustees at 26

private U.S. institutions from the Association of American Universities (AAU) from 1997 to 2005, Mathies and Slaughter found increased convergence between the research fields of a given university and the science fields of the corporations to which trustees were connected. Also, they found evidence of a direct and positive correlation between university trustees connected to science-based corporations and the amount of R&D funding a university receives. Another fact pointing at the interconnection between science and society is the upward tendency among academic institutions to engage in technology transfer, despite the fact that R&D funding from industry has remained flat over two decades (National Science Board, 2014). Now, to provide some perspective, Agrawal and Henderson (2002) show that a very small fraction of academic research is patented. Similarly, Thursby and Thursby (2004) provide evidence on the limited involvement of faculty in inventions. Perhaps then, as some argue, academic citations in patents might be a better indicator of the impact of academic research on technological innovation than patenting activity by academics (Branstetter, 2005).

There have been several theoretical developments to conceptualize the interconnection of science with society. For example, Stokes (1997) proposed a division of science beyond the traditional dichotomy used until then between basic and applied research. He proposed another classification of science along two dimensions by which fields can be located depending on the level of quest for understanding versus quest for use and applications. The four resulting quadrants are the Bohr's quadrant (high understanding/low use), Pasteur's' quadrant (high understanding/high use), Edison's quadrant (low understanding/high use) and a non-scientific quadrant (low understanding/low use). The literature on research policy has documented the fact that knowledge is increasingly produced for use and inspired by use as Stokes characterized it in the Pasteur's Quadrant. Isabelle (2008) developed a framework expanding Stokes's plane into a three-dimensional typology including an axis to capture profit-making science in the knowledge economy. In this model, Isabelle situated Stokes's quadrants within a third dimension of proprietary versus open-access research. Research in the proprietary domain refers to patents and licenses whereas research in the open-access refers to published research. Thus, research in the Pasteur's quadrant can be open-access-use-inspired in one extreme or proprietary-use-inspired in the other extreme.

Gibbons et al. (1994) coined the terms *Mode 1* and *Mode 2* of knowledge production as two distinct ways in which science is conducted. In Mode 1, scientists are motivated and driven by the science itself without considering application. In Mode 2, multidisciplinary teams of researchers work for relatively short periods of time on specific problems with direct applications. The triple helix introduced by Etzkowitz (1998) goes a step further and has been used to represent the close integration and blurring of boundaries among academia, government, and industry in the production and transfer of knowledge. The implication of the triple-helix metaphor is that universities need to transition to a compatible notion of knowledge production with commercialization. This evolved into the notion of the entrepreneurial university, as a hybrid organization embracing the third mission of economic development in addition to scientific research and higher education through patenting, spin-off

companies, business incubators, and research parks (Etzkowitz, 2003). Kim, Kim, and Yang (2012) tested empirically the effect of industry-academia-government linkages on regional entrepreneurial activities measured by birth and death rates of U.S. firms at the state level. They found a positive relationship between industrial R&D expenditure and regional firm birth. In this study, university and government R&D also generate a synergistic effect that indirectly influences regional firm birth rates. In addition, they found that university R&D plays an important role as an entrepreneurial mediator among the three stakeholders in the triple helix in regions with high entrepreneurship.

Rothaermel, Agung, and Jiang (2007) conducted an analysis of 173 articles on university entrepreneurship published between 1985 and 2005 in 28 academic journals outside the field of higher education. They found four main streams of research in this body of literature (entrepreneurial research university, productivity of technology transfer offices, new firm creation, and environmental context including networks of innovation) and developed a framework illustrating the interconnection among these themes. In this model, the entrepreneurial university resides at the center as the generator and diffusion of technological advances through cross-boundaries organizations and activities such as technology transfer offices, incubators, and business parks as well as patenting and licensing. All this flurry of activity occurs within broader networks of innovation influenced by the general economic and political climate, including government regulations and incentives. As universities participate in the knowledge economy, they transform themselves by shifting mission, internal cultures and structures more favorable towards entrepreneurship. This shifting process involves renewing roles and negotiating work at the boundaries with significant implications related to the role of universities in society.

Networks of Knowledge

Youtie and Shapira (2008) argue that since the inception of the Bayh-Dole Act, universities have evolved from a model of "knowledge factory" to a model of "knowledge hub" seeking to foster home-grown development, new capabilities, and innovation in research with applications and commercialization potential. In the same vein, Powell and colleagues observed that as universities, hospitals, firms, and funding agents become linked in a common network via mobility, collaboration, and formal joint ventures, the network itself has emerged as the primary locus of innovation (Powell, 1996; Powell, Koput, & Smith-Doerr, 1996; Whittington, Owen-Smith, & Powell, 2009). Ponomariov and Boardman (2008) found that informal interactions between faculty and industrial representatives are conducive to collaborations in research. These results agree with the notion that networking and informal interactions are also a mechanism by which technology transfer takes place (Cohen, Florida, Randazzese, & Walsh, 1998). Based on this finding, Ponomariov and Boardman call for the need to implement policies and programs targeting

individuals and these informal collaborations to balance the predominance of formal efforts directed to institutional policies around technology transfer.

According to Youtie and Shapira (2008), universities become engrained in innovation networks linking various stakeholders such as firms and governmental agencies around common research interests with applications close to the marketplace through strategic alliances involving a variety of activities including research publications, conferences, research contracts, research staff acting as consultants, sharing of equipment, and students doing internships or on-the-job training. Youtie and Shapira further argue that universities contribute to economic development through boundary-spanning roles involving communication of knowledge across organizational boundaries internally and externally. Internal boundaries include those found within departments, centers, extension programs, and administrative units. External boundaries include sectors and actors operating in economic, governmental, educational and community spheres. Similarly, Hemlin and Rasmussen (2006) use the term "hybrid flora" to illustrate the environment in which research is conducted. This "hybrid flora" includes researchers from universities, corporations, and public administration—the triple helix. The boundaries of these institutions are increasingly blurring as their researchers continuously cross their borders (Etzkowitz & Leydesdorff, 1997). In this context, we find research centers, for example, that operate at the intersection of state, academia and private sector, embracing hybrid cultures, management, and tasks. This is common in certain fields where research in industry and academia develops in tandem and scientists in both sectors have much in common. These fields include molecular biology, biochemistry, genetics, and the human biotechnology industries; between material science and the emerging nanotechnology industry; and between chemistry and the most innovative quarters of the chemical industry (Evans, 2010).

Evans (2010) sought to answer the question of how linkages between academic research and industry shape science using the case of the development of *Arabidopsis thaliana,* the first higher plant with a complete genome sequence identified and the primary genetic model in plant biology. Evans main conclusion is that linkages with industry draw high status academics away from theoretical knowledge and towards speculation whereas government-sponsored research encourages theory building through incremental and confirmatory research. In this way, industry and government sponsored research complement each other in networks of knowledge. In his words, this is how government funding encourages replication and industrial funding innovation:

> Government-sponsored work approaches the unknown from the known—from the base of existing theory. Industry-sponsored work approaches the known from the unknown—from data generated with interests oblique to theoretical development (p. 443).

Networks are flexible, innovative, and open. This contrasts with more traditional notions of coordination mechanisms such as markets and hierarchies, which is more in line with the traditional roles of universities as knowledge producers (Jones, Hesterly, & Borgatti, 1997). For example, networks of knowledge include both producers and consumers interchangeably, influencing each other, and also

include different types of organizations across sectors with different types of goals and changing structures (Hellström & Jacob, 2001; Hemlin & Widenberg, 2001; Ziman, 2000). Similarly, in the "triple helix" model, innovation-fostering hybrid organizations are at the interface of university, industry, and governmental segments (Etzkowitz & Leydesdorff, 2000). Boardman (2009) links these two approaches by arguing that the scientific and technical human capital of faculty for research and related activities depends on their network linkages. Boardman contends that research centers, especially those sponsored by the government—the "triple helix" model—are fundamental to enhancing the capacity of faculty to partner with industry. These research centers act as hubs in a network of actors from different sectors involved in R&D.

Many argue that science for societal use is better produced in interdisciplinary networks of stakeholders across sectors (Hemlin & Rasmussen, 2006). In particular, Mendoza (2007b) suggests that government investments and policies to foster industry-academia linkages should focus on networks of knowledge as is the case in Canada with the government-sponsored Networks of Centers of Excellence (Fisher, Atkinson-Grosjean, & House, 2001), rather than centers such as the ones sponsored by the National Science Foundation (NSF). Mendoza builds her argument by saying that networks of knowledge foster linkages across various sectors, not only between firms and universities but also with organizations such as hospitals, foundations, and other non-profit organizations. In these networks, problems are likely to be addressed by a variety of not only academic disciplines but also by other societal stakeholders who might have a better sense of and interest in public needs. Also, networks of knowledge provide more opportunities for faculty and students for research ideas, collaborations, and jobs after graduation.

Social capital is useful to understand the benefits of networks in the production of science. Social capital refers to the social networks of individuals enabling certain outcomes (Tierney, 2006). Likewise, faculty belong to social networks on their campuses and in their academic communities. Mendoza (2012) argues that for faculty conducting research inspired by use in the Pasteur's Quadrant, peers in industry become important actors in their networks. In other words, industrial linkages become a source of social capital for research ideas, insights, feedback, and scientific collaboration. This idea agrees with the theory of academic capitalism, in which faculty are seen as actors using state resources to create networks of knowledge that link higher education to the global economy through linkages with the private sector (Slaughter & Rhoades, 2004).

From Blurred to Differentiated Boundaries

As the integration between academic and industrial research becomes stronger, it becomes necessary to spell out the specific roles of stakeholders including faculty, students, and industry representatives. Etzkowitz (2003) argues that with time, boundaries between industry and academia begin to blur to even form new

formulations of hybrid missions and roles. Examples are research centers or spin-off incubators at universities heavily involved with technology transfer, which involve faculty working with business men and women in the commercialization of academic research, that is, blurring boundaries and blending cultures and missions between universities and industries. Technology transfer offices in universities help faculty dealing with the risks and uncertainty of product development by providing valuable information of markets for specific products.

As boundaries blur, the literature in research policy has reflected on the implications when institutional logics overlap, in this case, the business and academic logics. Murray (2010) summarizes the positions in the literature by saying that when institutional logics overlap, the production of hybrids signifies collapse, blending, or easy coexistence. Going back to the first view according to Murray, scholars have theorized that hybrids are produced when one logic invades the other one; in this case, the business logic invading academia. Then they assume a collapse of the invaded logic; In other words, this position views the commercial logic as deeply encroaching on academia, undermining the norms and values of academia such as free dissemination of knowledge and academic freedom, to the point of imminent collapse (Campbell et al., 2000; Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Haveman & Rao, 2006; Krimsky, 2003). For example, Krimsky argues that these trends overemphasize productive knowledge at the expense of the knowledge that serves the public interest. Similarly, Etzkowitz (2003) argues that research groups in science and engineering operate like companies except for one important distinction, they are not interested in profit making. When faculty end up leading a group of more than eight members, they are forced to fully engage in project management and administration away from the actual research at the bench, resembling CEOs of small firms compelled to secure funding to stay "in business" (Etzkowitz & Kemelgor, 1998).

In this line of thought, Slaughter and Rhoades (2004) offer a thorough critique of the new ways of knowledge production for economic advancement. Slaughter, earlier with Leslie (1997), coined the term *academic capitalism* to embody the market and the market-like behaviors of academic institutions. Under academic capitalism, research universities become engines of global competition as incubators of innovation. In this scenario, the value of knowledge generated by universities becomes regulated by intellectual property policies and managed by technology transfer offices. Now, universities have a stake in the competitive global market and in the overall economic development of nations. Individual faculty have the opportunity to expand their work toward profit domains and entrepreneurialism (Welsh et al., 2008). The main criticism of this position is that science has never existed in isolation and in one way or another, has always been influenced by the market.

Organizational ecology on the other hand, offers a more moderate view, in which overlapping logics blend to create a third hybrid logic where institutional boundaries are lost leading to seamless networks of scientists from academia and industry (Hannan & Freeman, 1989). With time, these networks mature to form formal ties and shape entire fields through a new hybrid logic (Owen-Smith & Powell, 2003;

Owen-Smith, Riccaboni, Pammolli, & Powell, 2002; Powell & Snellman, 2004). For example, hybrid logics make universities become dependent on both commercial and academic rewards to maintain their status (Owen-Smith, 2003). Therefore, in a hybrid world, the academic logic prevails while patents and applied research are simply integrated within publication and basic science. In other words, the production of knowledge for the public or private good takes place in a continuum of knowledge regimes that "coexist, intersect, and overlap" (Slaughter & Rhoades, 2004, p. 29). Several authors have written about the values embedded and the nature of academic work at the boundaries where business values and academic values meet (Mendoza, 2007a; Mendoza & Berger, 2008; Santos, 2006; Szelényi, 2013; Szelényi & Bresonis, 2014). Szelényi and Bresonis (2014) provide two hypothetical examples illustrating the complexities of knowledge production that a single individual might experience at these boundaries:

> For example, an undergraduate student may support a university's profit-taking efforts by purchasing products displaying university logos. The same student might be deeply engaged in a university-maintained civic engagement program to assist the elderly in the community surrounding the university. Or a faculty member in medicine may devote much of her work to fighting disease in Africa while, at the same time, enthusiastically capitalizing on discoveries arising from the same project via patenting and licensing (p. 127).

Likewise, Santos (2006) distinguishes pluriversity (commercial) versus universal (non-commercial) academic knowledge and discusses how both types of knowledge are present within academic institutions and in partnerships and collaborations with external agencies. In so doing, Santos' perspective favors the blurring of commercial and non-commercial values and norms and the creation of hybrid institutions.

The work of Mars and Lounsbury (2009) presents the case of student eco-entrepreneurs as another example of blurred boundaries between the private and the public goods, in which students use entrepreneurship skills and market-based strategies to promote social goods. Mars and Lounsbury argue that the literature has overlooked social-oriented entrepreneurialism, which are joining market-based strategies with public implications. However, even in light of the hybrid view that apparently reconciles the two logics, many continue to express concerns over the notion that financial incentives and profits corrupt academia.

Murray (2010) offers an alternative by arguing that these perspectives fail to acknowledge instances when boundaries remain clearly defined and resilient in hybrid institutions (Lamont & Molnar, 2002). For example, Galison (1997) describes the coexistence of different subcultures in experimental physics and how these subcultures trade goods. Murray, however, sees these views as unproblematic coexistence that neglects the tensions that exist in these trading zones and the strategies that each trader—academia and industry—employs. Murray based his analysis on the controversial patenting by Harvard of the "Oncomouse," a genetically engineered mouse for use in cancer studies, with an exclusive license to DuPont. In his analysis, he shows the outrage by scientists and the series of events and strategies that scientists used to protect their academic interests. As a way to protect the collegiality that existed before the Oncomouse was patented, some decided to patent themselves versions of genetically modified mice to keep them

away from corporate interests and continue sharing it for scientific purposes. In this case, scientists were patenting not to secure commercial advantage but to spoil the commercial value of the Oncomouse and preserve their academic goals and maintain and even strengthen academic boundaries (as opposed to the blurring of boundaries as the traditional hybrid logic predicts). Therefore, as patents invaded the academic world, in this case, scientists' boundary changed patents producing hybrids that maintained the two worlds in productive tension. In this case, academic scientists prevented industry encroachment and used patenting, part of the business logic, to reinforce the academic logic. Murray describes how participants in his study decided to use patents to exclude the excluders (those with commercial interests) and prevent themselves from being excluded. The possibility of restricting publications through patents brought by the industrial logic, instead of corrupting the academic logic, actually reinforced it, because scientists, almost as a revolutionary act, ended up giving a new meaning to publishing, as a way to not only disseminate results, but to protect knowledge as a public good and away from the excluders. This is an example of clearly establishing boundaries within hybrid logics.

These contradictions can only be understood by examining the conflict that actually is likely to happen in hybrid logics and the meaning that stakeholders give to actions within hybrid logics. Murray (2010) generalizes her analysis by saying that hybrids and their process of production occur through differentiation of boundaries rather than blending, and coexist in productive tension as opposed to easy coexistence. In this context, actors trade material and symbolic resources strategically, transform their meaning and establish well-demarcated boundaries around logics. Likewise, Tuunainen (2005a) offers a case of the seriousness of the conflict generated when an academic group tried to blend its research with potential business activity at a regular academic department. As Murray pointed out, this case magnified the boundaries between the academic and the business worlds, boundaries that were not clearly visible before conflict arose. In particular, conflict manifested around four areas: (1) the authority of the department chair; (2) the allocation of teaching loads; (3) the ownership of research tools and materials; and (4) the intellectual property rights of faculty involved. The differences were irreconcilable to the point of rupture, in which the hybrid firm became a separate entity.

Based on a case study, Tuunainen (2005a) argues that unlike some of the rhetoric found in the literature, public universities are not being transformed into entrepreneurial institutions and universities are still interested in preserving their core mission. Instead, universities are likely to clearly separate roles and engage in entrepreneurship through business incubators from the traditional academic mission. Therefore, academic structures, functions and polices might be more stable than thought in light of academic capitalism. Also, academic life in hybrid organizations (an academic department starting a start-up company, for example) is characterized by conflict as faculty are exposed to conflicting messages from different stakeholders around issues of intellectual property as well as resentment from academic colleagues who do not embrace entrepreneurship (Etzkowitz, 1996; Mendoza & Berger, 2008; Rappert & Webster, 1997). This conflict results in productive strategies to differentiate boundaries.

Whether boundaries are blurring or differentiating, there are still plenty of challenges around industry-academia linkages. In the next section I present a deeper discussion of these issues. To deal with those difficulties, Alves, Marques, and Saur-Amaral (2007) as well as Johnson (2007) propose the utilization of a fourth non-profit organization managed by representatives of all sectors involved. These two studies provide specific examples of what they call the 4th Pillar Organization, created to manage and mediate triple helix linkages (industry-academia-government) or a network at a distance. This type of organization can be very helpful in dealing with controversial topics such as intellectual property, shortening the distance between the worlds of industry and academia, and allowing more fruitful linkages.

The Nuts and Bolts of Industry-Academia Linkages

There are several types of industry-research linkages: collaborative research through grants, joint R&D projects, consulting, seating in advisory boards, patenting, and starting companies. These linkages can turn into partnerships when the academic institution of the faculty member signs contractual agreements usually around research grants, patents, and starting spin-off companies. It is also possible that collaborations emerge from existing partnerships. However, there are also collaborations that do not involve the academic institutions formally in the case of consulting and seating in advisory boards. Joint R&D projects can take place within both partnerships and collaborations (Eddy, 2010). Ding and Choi (2011) investigated the career paths of 6,138 university scientists who have founded firms or become advisors to companies and found that founding a company tends to happen earlier in the career of these faculty than becoming an advisor, suggesting that these two are not necessary divergent career paths.

According to Boardman (2009), industry-academia linkages have been studied through two main lenses: (1) the resource-based perspective (Powers, 2003; 2004; Santoro & Chakrabarti, 2002; Van Rijnsoever, Hessels, & Vandeberg, 2008); and (2) the institutional perspective emphasizing the interactions of government, universities, and industry for economic development. Resource-based views assume that in order for organizations to position themselves in the market, they must have unique assets and capabilities—resources (Barney, 1991). There are several types of resources: financial, physical, human capital and organizational (Daft, 2000). Work centering the attention on the role of universities emphasizes potential changes in institutional norms and society's expectations of academic institutions (Etzkowitz & Leydesdorff, 2000).

Both approaches, the resource-based and the institutional, are complementary and even necessary in studying research centers. The institutional view provides insights related to universities' establishment of organizational structures to intentionally partner with industry and the resource-based view is helpful to understand the motivation, roles and behaviors of individual faculty and firms.

More specifically, in recent decades, the US has seen the proliferation of university research centers around specific scientific and technological areas, incorporating academics from various disciplines as well as industrial participation (Bozeman & Boardman, 2004). This is the classical example of the triple-helix model (Etzkowitz, 1993). The main structural and cultural characteristics of these centers depend on how the interactions with industry and/or government are coordinated (Block & Miller, 2008). For example, while some centers are sponsored by the government and require industrial involvement (I/UCRCs), other centers do not depend on one specific grant program and yet have strong ties with industry (Boardman & Corley, 2008; Lal, Boardman, Deshmukh, Link, & Shipp, 2007).

In addition, a number of studies have used the human-capital approach to study collaborations of academics with industry and frame the institutional- and resource-based approaches (Boardman & Corley, 2008; Corley & Gaughan, 2005; Gaughan & Robin, 2004; Youtie, Libaers, & Bozeman, 2006). The human-capital approach, in this case defined as scientific-and-technical human capital by Bozeman, Dietz, and Gaughan (2001), interprets the linkages to industry by faculty as indicative of their capabilities to conduct research of interest to firms. Therefore, research centers can become the mechanism by which academics can realize this potential of conducting research with commercial applications, and therefore, the scientific-and-technical human capital approach is compatible with the institutional perspective. Likewise, this human-capital approach is compatible with the resource-based view by accounting for the variations that exists in industry-academia linkages, including different forms of knowledge integration, research capacity development, and other resource-based motivations on the part of firms and other stakeholders such as government centers and programs to sponsor academic research (Boardman, 2009).

However, the scientific-and-technical human-capital approach and the institutional- and resource-based views predict different outcomes of industry involvement by academic researchers. The institutional approach assumes that the norms within universities will turn towards favoring entrepreneurial behavior expecting faculty to get involved with industry. In this perspective, then, the involvement of faculty with industry should increase over time. The resource-based approach emphasizes the motivation on the part of actors in industry-academia linkages for competitive advantages in securing resources. In this case, the prediction is also increased participation in these linkages because both universities and private firms have a number of resources valuable for each other. Boardman (2009) states that there is an exception to this prediction, when the type of knowledge and competitive advantage of both industry and academics do not differ significantly. In this case, industry-academia linkages are motivated by access to knowledge instead of collaborating for the development of knowledge (Santoro & Chakrabarti, 2002). Here, the resource-based view is then likely to predict a non-effect of industry-academia linkages because firms would not be demanding researchers to do something different from what they already do in house. Instead, the scientific-and-technical human-capital approach draws attention to how networks shape the research capacities and opportunities of individual academic researchers to understand institutional influences and resource-based incentives

affecting faculty involvement with industry. In this view, faculty involvement with industry depends on how institutional influences and resource-based incentives impact individual researchers' capacities and opportunities to perform research and related activities with private companies.

Using this variety of approaches, scholars have identified a range of benefits and challenges that arise when stakeholders collaborate due to different cultures and objectives among industry, academia, and government. Much has been written on potential conflicts of interest related to academic freedom, basic versus applied knowledge, and intellectual property secrecy of knowledge around industry-academia linkages, given that these are the obvious spaces where the Mertonian values are likely to be compromised. Another area that has captured the attention of researchers is the role of Technology Transfer Offices and University Intellectual Property Policies in industry-academia linkages. In the next sections I review the literature on these topics. In the remainder of this section, I will review previous studies organized around seven themes for discussion. The first theme refers to the benefits identified in previous work associated with industry-academia linkages. Then, the next six themes include: Mertonian versus Business Values; Academic Freedom in Industry-Academia Linkages; Basic versus Applied Research; Dissemination of Knowledge vs Patenting; Technology Transfer Offices and Intellectual Property Polices; and Impact on Students.

Benefits to Industry and Academia

There is a significant body of literature empirically documenting the benefits of industry-academia linkages for economic development, especially in Science, Technology, Engineering and Mathematics (STEM) fields (Roessner, Bond, Okubo, & Planting, 2013). In fact, Sampat (2003) asserts that the supremacy of the U.S. in technological advances is in large part due to the strength of its universities. Between 1996 and 2010, assuming a 2–10 % royalty fee and no product substitution effects, the total contribution of university licensing to gross industry output in the U.S. was at least $162.1 billion and as much as $686.9 billion in 2005 dollars with more than 277,000 jobs created (Roessner et al., 2013). According to Goldstein, Maier, and Luger (1995), there are seven tangible outputs with economic impact resulting from industry-academia linkages: (1) Creation and transfer of knowledge and know-how; (2) Human capital development; (3) Innovation including new concepts and prototypes; (4) Capital investment; (5) Regional leadership development; (6) Development of knowledge infrastructure including instruments and equipment; and (7) Influence on the regional milieu. Benefits to industry include access to students and faculty as well as to new ideas and research (Feller, Ailes, & Roessner, 2002; Roessner, 2000). The benefits brought by university licensing to academia are materialized through publications and conferences, academic consulting, collaborative research, and hiring of students after graduation (Roessner et al.). On the other hand, others argue that too much emphasis on economic development benefiting

private firms might compromise the public role of academic institutions (Gumport, 2005; Slaughter & Rhoades, 2004). However, recently, a number of authors have challenged this idea by showing the complexity around industry-academia linkages as I illustrate below.

Industry and academia come together in association seeking different objectives and so, developing those relationships requires considerable effort for both parties (Jongbloed, Enders, & Salerno, 2008). De Fuentes and Dutrénit (2012) characterize the linking process between academics and firms in three stages: drivers of interaction, channels of interaction, and the perceived benefits. In particular, in the first stage, public research organizations such as academic departments in public universities seek linkages with firms as new sources of funding and research topics. Firms are generally seeking expertise on a specific application, sources of knowledge related to their products, and students as potential employees. In the second stage, channels of interaction include with-and-without-contract R&D, consulting, participating in advisory boards and ad-hoc advice. Other exchanges are networking at conferences as well as dissemination of knowledge via journals, reports, and conference presentations. Also, there are other exchanges around activities such as teaching, hiring students upon graduation or as interns, other staff exchanges, and joint student supervision (Schartinger, Rammer, Fischer, & Fröhlich, 2002). In many of these exchanges, Technology Transfer Offices are irrelevant (Grimaldi et al., 2011); however, formal technology transfer is also an important channel of interaction through property rights, incubators, and spinoffs (D'Este & Patel, 2007; Perkmann & Walsh, 2008; Wright, Clarysse, Lockett, & Knockaert, 2008). Some argue that patenting brings industry and academia closer, which results in an exchange of resources useful for both such as inspiration and questions for academic research and material resources for academics (Fabrizio & Di Minin, 2008; Stephan, Gurmu, Sumell, & Black, 2007). On a different but related note, Santoro (2000) demonstrates that geographic proximity facilitates the development of industry-academia linkages.

There is plenty of research on the perceived benefits of industry-academia linkages. Industry seeks access to academia in order to gain access to basic and applied knowledge useful to understand their products, solve technical problems, develop new technologies and test prototypes (De Fuentes & Dutrénit, 2012). However, industry normally has a different approach to problems related to their products as well as to innovation more oriented towards product development, and so, these goals are difficult to meet. Moreover, many firms do not recognize the competitive advantage of technological innovation, even less when they involve high risk lengthy and costly investments. They tend to favor routine production approaches and are weary of investing in their own innovations. Also, firms have difficulties in identifying technological needs and perceive technology generated in academia as too advanced or incapable of solving practical problems (Alves et al., 2007). On the other hand, large firms are more likely to invest in R&D and, therefore, tend to find more uses for academic knowledge than smaller firms. Also, academics are more likely to find peers in large industries with similar views and habits. Smaller firms are primarily interested in marketing products and in direct applications and short-term results (Alves et al.). At the end of the day, both large

and small firms often meet secondary interests in these associations, which include simply staying current on scientific expertise and having available recruitment opportunities of students (Roessner et al., 2013). Access to faculty for consultancy is also a benefit and driver for industry to seek linkages in academia. Other reasons include seeking to enhance the company's image and access to university facilities.

Chakrabarti and Santoro (2004) argue about the benefits to industry using notions of explicit and implicit knowledge. Explicit knowledge is codified and easily expressible, whereas implicit knowledge is not visible, difficult to formalize, not easily expressible, and highly personal. Industry needs both types of knowledge. Patents, publications, research presentations are all forms of explicit knowledge. Implicit knowledge exchanges are related to learning processes and the building of social capital based on trust and socialization. All these foster intellectual capital, an essential component of knowledge creation. Moreover, industry-academia linkages can foster collegiality between faculty and industry representatives. Mendoza (2012) describes some of these relationships as close and positive, in which faculty and industry might "just pick up the phone" when needed. Sometimes, these relationships have a long history and favors are common such as a last-minute grant to support a student or a test of a prototype in a lab, for example, a new material or drug. In Mendoza's study (2012), some faculty see their industrial counterparts as peers in their intellectual community.

Through industry-academia linkages, academics gain ideas for publications and future research, the possibility of testing applications of a theory, gaining a new perspective useful for their research, networking for future collaborations, and funding for research and for supporting graduate students (De Fuentes & Dutrénit, 2012). Lee (2000) found that in most instances, university researchers meet their primary interests when partnering with industry, which is securing additional research funds. In addition, others have argued that these linkages bring other benefits to institutions and their faculty, including access to industry facilities and know-how (Grimaldi & Von Tunzelmann, 2002; Mendoza, 2012), income from commercialization, capital gains from selling shares in start-ups, donations from venture capitalists, and recruitment of entrepreneurial faculty and students (Grimaldi et al., 2011).

Likewise, the literature in economics of innovation and management examines the motivations and benefits to stakeholders (academics, academic institutions, industry and society) of industry-academia linkages. These studies emphasize the gains to industry in terms of new technologies, useful knowledge and expertise from academia as well as the gain to universities in terms of resources, relevance of their research, and reputation. In fact, some studies show that patenting positively correlates with academic productivity (Breschi, Lissoni, & Montobbio, 2005; Franzoni & Scellato, 2007; Meyer, 2006) and that industry is a notable consumer of academic research published in traditional journals (Cohen, Nelson, & Walsh, 2002). This line of research has demonstrated economic growth due to industry-academia linkages (Mueller, 2006; Zucker, Darby, & Armstrong, 2002). For example, Shane (2004a) argues that spin-off companies are good for national and local economies. These companies usually become profitable and hire university graduates (Welsh et al., 2008).

Mertonian Versus Business Values

Merton (1973) defined four core values in science as the ideals, goals, and methods of scientific inquiry. These include communalism– the common ownership of scientific discoveries away from intellectual property; universalism– claims to truth are objective; disinterestedness–scientists are rewarded for acting selfless; and organized skepticism– all ideas must be subject to rigorous and structured community scrutiny. One of the most cited critiques of Mertonian science is Blume's (1974) work recognizing that universities are embedded in and influenced by social and economic contexts and so, the idea of autonomy in science is unrealistic. Also, Mitroff (1974) presents a nuanced view of Merton's values of science based on the idea that for every academic norm, there is an opposite or counternorm (interestedness, particularism, organized dogmatism, and solitariness). In this view, faculty continuously negotiate norms and counternorms. For example, scientists find themselves negotiating altruism versus individualism in their work in terms of conducting research for the benefit of others but also strategizing choices to maximize personal benefits aligned with peer recognition and tenure and promotion. This balancing also occurs when faculty encounter entrepreneurial opportunities with potential for personal profit from their research but are also likely to have social implications. Mulkay (1976) argue that norms and counternorms are subject to interpretation, context, and structures of power, and so, they become vocabularies of justification of science for outsiders more than referents of behavior for scientists institutionalized by the scientific community. In other words, norms and counternorms serve as a social stereotype of what science should be and scientists should be doing. However, Anderson, Ronning, De Vries, and Martinson (2010) argue that a small set of normative principles does exist to which scientists subscribe. Thus, despite these critiques and complexities around academic norms and counternorms, there is still the recognition that there is a distinct academic culture aligned with the Mertonian vision of academic values so that academics tend to produce more public goods and industry tends to produce more private goods (Owen-Smith, 2006). For example, the academic profession is driven by intrinsic motivation based on the fascination of research and teaching, peer recognition and prestige whereas the business world values primarily extrinsic motivations around material gains (Mendoza & Berger, 2008). Academic scientists belong to closed communities in which the evaluation of research is conducted and rewarded by peers. As such, academic institutions establish their own goals with little or no industrial input. Overall, faculty favor long-term and loose outcomes as far as these fulfill their academic goals and scientific curiosity. On the other hand, firms are constantly adapting to the market, an unfamiliar territory for most academics. As a result, industry representatives tend to focus on the function of technologies rather than on the technologies themselves. Thus, industry perceive faculty as unreliable when it comes to delivering practical solutions in a timely manner in response to the market. But perhaps the thorniest point is around secrecy of knowledge, which is a fundamental survival strategy for firms but violates a fundamental value of the

academic profession, which is the universality of knowledge (Alves et al., 2007). These divergent views result in a general lack of interest in entrepreneurialism and market-driven factors on the part of faculty, leading them to disregard practical and commercial implications of technologies, which is the prime focus of industry.

Ultimately, these opposing values and purposes are the result of different cultures (Mendoza & Berger, 2008). For example, communication between faculty and industry representatives is difficult as academic language is perceived as eclectic and speculative. At the end of the day, each party has a different understanding and emphasizes different uses of research, one for knowledge's sake and the other one for economic advantage (Alves et al., 2007). However, these cultural barriers are dampened when faculty engage with scientists in large firms involved in R&D (Mendoza, 2012). Also, Aldridge and Audretsch (2011) show the importance of relationships and linkages with industry for faculty to become entrepreneurs. In fact they found that social capital based on networks including industry was the strongest predictor of entrepreneurship among faculty; therefore, through continuous interactions with industry, cultural differences are likely to diminish.

Many have raised concerns around cultural changes in the academy towards a business-like culture potentially impacting all of the four Mertonian values of the academic profession and so, its public good (Kleinman & Vallas, 2006). Likewise, in the higher education literature, scholars have raised concerns arguing that industry-academia linkages might be harming the traditional academic culture in the Mertonian sense, or perhaps shifting the balance favoring counternorms according to Mitroff at the expense of knowledge production for the public good (Gumport, 2002, 2005; Mars & Lounsbury, 2009; Newman, Couturier, & Scurry, 2004; Power & Campbell, 2011). Using data from contract documents from industry-academia linkages, Power and Campbell studied the implications for faculty research practice and productivity of commercialization of research. They found that licensing technologies exclusively to firms has a negative impact on publications by faculty involved in these licenses as well as on collaborations with other faculty. This work questions the practice of licensing exclusively on the part of universities because of the dampening effects on traditional scholarly outputs and the small financial returns or even losses for universities. They reflect on their finding using Mitroff's (1974) concept of counter-norms as follows:

> This study has shown that one effect of the emergent counter-norms of secrecy and self-interestedness stimulated by a culture of commercialization and revenue generation may be a decline in traditional forms of knowledge dissemination and collaboration on project with other researchers outside one's institution, a phenomenon that appears to threaten what is broadly viewed as a key engine of innovation. These norm changes appear to be hindering innovation via the traditional mechanisms (research publication and collaboration), questioning the success of policymaking to date for the purpose of speeding its movement off the lab bench to society. Yet, the full normative implication requires additional investigation into other innovation diffusion mechanisms that may offset this reality (Power & Campbell, 2011, p. 258).

Even industrial representatives have expressed concerns about changes in the academy arguing the need for academia to engage in basic science for their

technologies and future breakthrough discoveries (Welsh & Glenna, 2006). These concerns are fueled by studies documenting a rise in knowledge kept secret (Vogeli et al., 2006), a blurring of boundaries between the private sector and universities (Cummings & Kiesler, 2005), institutional conflicts of interest (Johns, Barnes, & Florencio, 2003), university research aligning with private sector research topics (Welsh & Glenna), and science fraud in connection to commercial ties and private gain (Martinson, Anderson, & De Vries, 2005; Martinson, Crain, Anderson, & De Vries, 2009). For example, Krimsky (2003) documented how findings on the safety of new drugs are tied to financial relationships with pharmaceutical companies. Likewise, Campbell, Powers, Blumenthal, and Biles (2004) document scientific bias favoring results of products from firms, especially drugs. Also, Powell and Owen-Smith (2002) offer the image of the new entrepreneur-faculty, as someone who replaces disinterested and dedicated science for research with commercial potential and even seeking profits through patents and spin-off companies.

Glenna, Welsh, Ervin, Lacy, and Biscotti (2011) and Mendoza (2007a) investigated whether differences in what is valued among scientists and research outputs is explained by types of funding received. The concern at stake was whether funding agents were influencing the ability of academia to fulfill public goals, in Glenna et al. words:

> Funding agents provide support to university scientists in exchange for research with certain goals and attributes. If research outputs vary according to funding source and scientist values, it can no longer be assumed that the university provides an institutional structure capable of preserving the full public-interest research agenda in an era of university-industry collaborations and the rise of commercial science (p. 958).

Glenna et al. (2011) argue that most past studies addressing these issues do not consider the role of behavioral norms and actual actions of faculty in the face of these macro influences with a few exceptions such as Mendoza and Berger (2008) and Mendoza (2007a, 2012). Likewise, Bercovitz and Feldman state:

> The mere presence of macro-level pressures does not guarantee that new initiatives will be embraced. The ability of organizations to change depends on the willingness of individuals to adopt supportive norms, routines, and behaviors (2008, p. 69).

Thus, Glenna et al. (2011) argue that studies on the commercialization of science tend to focus on structural and external factors, ignoring agency in great part due to the influence of the widespread structuralist theory of action put forward by Merton (1973), who argued that faculty behavior was the result of institutional norms and not so much of individual characteristics. In the words of Dasgupta:

> . . . don't blame the individual researcher, qua researcher; blame instead science for failing to enforce the norms of science (1999: p. 265).

This tendency to focus on institutional norms and structures does not capture the complex and even contradictory rationales and actions that have been documented among actors to cope with the pressing environment (Bercovitz & Feldman, 2008; Lam, 2010).

Therefore, neoclassical theories of action have emerged emphasizing the role of self-interested and rational actors in the face of external pressures. Most notable is

the work of Slaughter and Leslie (1997) and Slaughter and Rhoades (2004), who used resource-dependency theory to develop their theory of academic capitalism to explain the influence of external factors, such as an external climate conducive to industry-academia linkages in faculty behavior. Based on academic capitalism, new opportunities in the market become resources for faculty for research and prestige, and due to the dependency on resources to conduct research and the need for prestige, faculty are likely to engage with the market. However, engaging with the market does not necessarily mean losing the core academic values. Mendoza and Berger (2008) and Mendoza (2012) present evidence demonstrating that it is possible to establish linkages with industry seeking resources and still retain opportunities to continue operating under traditional academic values, which agrees with the notion of differentiation instead of blurring of boundaries presented by Murray (2010). Faculty in these studies explain that this is possible because even when research is sponsored by firms, it is most likely several steps away from direct application and development; therefore, it is basic enough to be of little value for patenting but yet publishable. However, one area of concern raised in these studies, relates to a generalized perception that funding for basic research is increasingly more difficult to obtain leaving important voids for the possibility of future breakthrough discoveries.

Academic Freedom in Industry-Academia Linkages

The ability of researchers to freely follow the science itself in their investigations independently of external pressures is one of the cornerstones of the academic profession. Therefore, questions have been raised about the ability of faculty to maintain their academic freedom when their research is sponsored by private firms or closely aligned with technologies with commercial potential. Dai et al. (2005) developed a stepwise research process model of knowledge exploration and dissemination for a research project. According to Dai et al., the research process starts with the generation of a research idea, followed by targeting and securing of financial support, normally through grant writing. However, I argue that this clear delimitation of research projects is artificial and simplistic because of spillovers from one research project to another, and in fact, there are plenty of research ideas that are executed without pursuing or securing research funds. This is possible because as faculty establish themselves, they tend to develop an infrastructure that allows them to pursue research projects without being directly attached to specific grants (Mendoza, 2012). Dai et al. also discuss how typically an original research idea determines funding sources; although sometimes, faculty screen funding sources first in order to generate ideas, specially given the increasing pressure on faculty to secure funding. Then, the model continues, after securing financial support, researchers execute the research and obtain results. However, again, this model does not acknowledge the fact that many times, faculty can afford to pursue research ideas before securing funding. In fact, to have better

chances to win grant competitions from the federal government, some faculty apply to grants when most of the research has already been done because this approach allows them to write stronger grant proposals that are better defined and with clearer impact. This is possible because in a typical research lab, funding from specific grants end up in a general fund account supporting a variety of research ideas in various stages of development while multiple grant proposals are being submitted. In this scenario, it becomes difficult to linearly and uniquely attach a research study to a specific grant (Mendoza).

The complexities noted here in the research process challenge the ability to uniquely determine the degree of academic freedom in projects with external funding, including from industry. Mendoza (2012) found that faculty are constantly seeking strategies to protect their academic freedom when entering into linkages with industry. Some of the strategies include extensive negotiations, keeping a diversified funding portfolio including block federal grants, and aggressively seeking funding in order to keep a healthy stream of revenue to allow room to explore their own scientific interests. However, there is evidence suggesting that those departments with sufficient on-going funding available are likely to enjoy considerable academic freedom in relation to other departments with less funding and more dependency on targeted grants. Nonetheless, across-the-board, the commonly short-term nature of industry funding can be an impediment for long-term free exploratory research. Another obstacle to academic freedom can be associated with the nature of some grants, which are overly specified, although these grants are not necessarily from industry. Sometimes funding from governmental agencies can be overly restrictive, specially from the Department of Defense.

Another aspect of the model by Dai et al. (2005) discusses environmental factors in the research process with implications for academic freedom. In particular, they argue that institutional factors such as university culture and technology transfer policies influence choice of projects and dissemination decisions. At the same time, these are influenced by the social environment where changing economic and political regimes shape research agendas and create "hot spots" in the science community. This agrees with the notion that the main impact of the Bayh-Dole Act was to redirect Technology Transfer Offices towards "hot" areas where licensing is likely to be successful (Shane, 2004b). There are also historical events such as the terrorist attacks of 9–11, which opened the door to the Patriot Act and a whole new era of security and surveillance with important implications for research agendas, academic freedom, and secrecy of knowledge.

Basic Versus Applied Research

Basic science prevails among faculty despite industrial funding. This is possible because both industry and government are interested in the fundamental science behind products, which is intellectually appealing for academics in the Pasteur's Quadrant (Mendoza, 2009). In the same vein, despite the rhetoric about the

potential eroding effects of industry-academia linkages, empirical studies have found little evidence of negative implications of increased university licensing such as the assertion that faculty are conducting less basic research and publishing less (Mendoza, 2012; Thursby & Thursby, 2007; Welsh et al., 2008). Earlier research studies on the effects of academic commercialization assumed a dichotomy by saying that these activities either did not affect or corrupted basic research. Recently, more moderate positions complicated this assumption (Thursby & Thursby, 2011b). For example, Thursby et al. (2007) show that licensing incentives do not diminish basic research but increase applied research efforts, resulting in an increase in overall research productivity among faculty. Boardman and Ponomariov (2007) found that junior faculty are more inclined towards basic research and do not value commercially relevant research as much as tenured faculty.

Another understudied issue revolves around the distinction between basic and applied research and how these two relate to academic and industrial research. For example, if a research project does not have direct application, it does not necessary mean lack of application relevance. Also, research with direct applications is always based on fundamental knowledge. To some extent, both industry and academia have an eye on understanding and use; both are complementary in the Pasteur's Quadrant (Stokes, 1997). Traditionally, basic science has been associated with government funding and applied science with industrial funding. However, Mendoza (2012) shows that this dichotomy is not accurate in her study. In particular, grants from the Department of Defense, for example, tend to be applied and secretive whereas some grants from industry are basically gifts for faculty to conduct research in an overall area of knowledge with no strings attached. Nonetheless, generally, grants from the National Science Foundation and the National Institute of Health tend to be more conducive of basic science, academic freedom, and free dissemination of knowledge. The question then becomes whether there is a shift in the academic versus commercial orientation of academia and faculty rather than a shift in basic versus applied research (Larsen, 2011; Mendoza, 2009). This question is more relevant because applied research does not necessarily mean that it is developed in industry and basic research is developed in academia. Instead, the distinction is whether faculty involvement in commercial research with close applications to the market or even engagement in profit-making through licensing and spin-off companies constitute a major departure from the ethos of the academic profession.

Dissemination of Knowledge vs Patenting

In Dai et al.'s (2005) model, dissemination of results takes different and even simultaneous paths including publications, lectures, conferences but also patents, commercial secrets, industrial reports, and demonstration projects. Effective dissemination is critical for the reputation and credibility of the faculty member and so is success in securing future funding (Owen-Smith & Powell, 2001). The type of research idea and funding mechanism determine in many ways the

diffusion strategy. Basic research is typically disseminated through publications and conferences whereas applied research is disseminated via patents and licenses. Sometimes, applied research reaches the public domain when faculty refuse to commercialize it for ideological reasons as illustrated by Murray (2010) in the case of the Oncomouse. Research projects might have both basic and applied results and so, dissemination happens through a variety of channels. For example, human genome research provided not only a theoretical milestone about the identification and sequencing of human DNA published in top scientific journals but also resulted in new medical applications transferred to the private sector. Similarly, research to design software, which normally has commercial applications, can be inspired by advances in pure mathematics, which are normally published in traditional scientific journals.

Potential tensions between publishing and patenting can take place at the University Research Centers started in the 1980s as one of the U.S. strategies to leverage academic research transferable to the market. Today, the National Science Foundation still sponsors these initiatives, most notably the Engineering Research Centers (ERC) program. The priorities of the ERC program is to assist industry with applied and commercially relevant research (Gray, Lindblad, & Rudolph, 2001) and access to upstream modes of knowledge as well as to students for hire upon graduation (Feller et al., 2002). Faculty affiliate with these centers in order to increase publishing productivity and boost their scientific-and-technical (S&T) human capital (Bozeman et al., 2001). However, many centers are focused on patenting and linkages with industrial partners that are not conducive to publishing (Ponomariov & Boardman, 2008). Ponomariov and Boardman (2010) conducted a case study of one of those centers and concluded that affiliation with this type of center has implications for the behavior of affiliated faculty according to the characteristics of these centers such as increased productivity, associations with industry and colleagues from other disciplines, and interdisciplinarity. The authors further argued that policies such as the ones promoting ERC centers are useful in influencing faculty behavior by providing S&T human capital and steering research toward applied goals. Examples of S&T human capital include access to funding, laboratories, instrumentation, collaborators, graduate students, networking with other institutions and with industry, and the ability to work on large and complex projects.

Recent studies have denied the initial concerns raised regarding potential decrease in publications in light of patenting by demonstrating that both publishing and patenting have increased in recent decades (Azoulay, Ding, & Stuart, 2009; Markiewicz & DiMinin, 2004). For example, Mendoza (2012) found that faculty are primarily interested in publishing rather than patenting and do not see a conflict between publishing and secrecy of knowledge. Patents are seen as incidental, if they happen, and very few receive royalties. Also, faculty in this study assert that patenting does not inhibit publications, except for withholding publications for 6 months while patents are filed. Also, the knowledge that goes into patents tends to be specific with little scientific value. Sometimes students cannot talk about certain results in job interviews due to secrecy of knowledge agreements with companies.

However, both faculty and students in Mendoza's study (2012) indicated that employers are sympathetic in these cases and even impressed with candidates with patenting experience. In some cases, the same company withholding information ends up hiring students.

University inventions tend to be embryonic and generic and so require extensive investments in development before commercialization. Evans (2010) contends that it is not publications that might be affected but theoretical knowledge instead, if academics, in their rush to commercialize, might compromise or slow theoretical verification and, ultimately, understanding (Krimsky, 2003). In this process, academic freedom can be also become compromised. Murray, Aghion, Dewatripont, Kolev, Stern (2009) build a similar argument based on the Oncomouse, which, in their view, limited the openness of research knowledge and negatively impacted diversity of lines of inquiry. Secrecy of knowledge behind commercialization also impacts collegiality, diffusion of knowledge about research methods, sharing of facilities, and academic freedom.

However, others have argued about the coexistence of academic entrepreneurism and the academic commons. For example, Breschi, Lissoni, and Montobbio (2007) talk about highly accomplished scientists who are productive both in publications and patenting activity, as a result of the same line of inquiry. Thursby and Thursby (2011a) looked at potential changes in the research profile of faculty in 11 institutions over a period of 17 years and found that recent disclosure activity normally has a positive effect on funding both from government and even more from industry. However, multiple disclosures end up negatively affecting external funding but positively affecting publication outputs. Recent disclosures increase citations.

Similarly, Stephan et al. (2007) showed that only a fraction of faculty in top US universities are involved in patenting and for those faculty, they found a positive relationship between publishing and patenting. Later Thursby and Thursby (2010, 2011) and Nelson (2012) showed that publications are far more common than patents and those who file disclosures have generally more research funding, publications and citations. Also, Nelson's study shows that publications are more cited than patents by firms. Likewise, Azoulay et al. (2007, 2009) provide evidence suggesting that a high publication rate is likely to follow after patent applications. Thursby, Thursby, and Gupta-Mukherjee (2007) explain these results in their models by saying that faculty are likely to direct their research agenda and related choices following their scientific curiosity and reputation rather than in response to license income. Therefore, if faculty do patent, it is more likely to happen if their traditional values as academic professionals related to publishing and basic inquiry are not compromised.

A few studies have documented differences in patenting behavior by disciplines and characteristics of individual faculty members. Franzoni and Scellato (2007) found striking differences in patenting and publishing behaviors within two subfields in material science, whereby faculty in materials engineering had a greater publishing activity after patenting than in materials chemistry. Lin and Bozeman (2006) examined whether having worked full time in industry influenced productivity among faculty affiliated with research centers. After controlling for

age, gender, rank, collaborations and resources, they found that those with industrial labor experience have fewer publications over the entire academic career but support more students. However, they found that for junior faculty, there seems to be more publication productivity.

In sum, research in the Pasteur's Quadrant is publishable, basic, but also patentable and applied (Thursby et al., 2007). Research in this quadrant is inspired by use and so, basic and applied research become complementary (Jensen & Murray, 2005; Murray, 2002). In all this, reputation matters. Fabrizio and Di Minin (2008) argue that most scientists end up publishing a generic slice of patents, in great part due to the pressures to publish in the academic profession. Publications are necessary for recognition and reputation of the scientist, even in the private sector (Stephan, 2008).

Technology Transfer Offices and Intellectual Property Polices

Nowadays, commercial activity is correlated with quality measures of the science being produced, R&D expenditures, and number of faculty (Powers, 2003, 2004; Shane, 2004b). These characteristics determine the status of universities and their respective departments (Di Gregorio & Shane, 2003; Mendoza, Kuntz, & Berger, 2012; O'Shea, Allen, Chevalier, & Roche, 2005; Stuart & Ding, 2006; Zucker, Darby, & Armstrong, 1998). Powers (2003) investigated the relationship between different institutional resources and technology transfer performance using AUTM data from 1991 to 1998 from 108 universities. He found that quality of science and engineering faculty was significant in all measures of technology transfer, suggesting the importance of human resources in commercialization of research. Also, Powers found that federal and industry R&D support are significant predictors of patenting activity but insignificant predictors of licensing income. This might suggest that industry benefits from academic research through other channels as discussed earlier in this chapter.

Similar studies have shown that universities with larger federal R&D funding outperform others with less funding from the federal government in technology transfer (DiGregorio & Shane, 2001; Powers, 2004). Powers confirms, as intended by the government, that universities are using federal R&D funding to commercialize research with firms of all sizes indicating that triple-helix policies have accomplished, at least to some degree, intended goals. Also, Powers found that institutional R&D resources are predictors of licensing to small companies. These studies show how institutions use resources to position themselves in the market through encouraging regional development. Later, Powers and McDougal (2005) investigated the impact of both external and internal resource factors on university technology transfer. They found that grants from industry have a positive effect in both start-ups formed and licenses, perhaps by encouraging an entrepreneurial culture in universities as well as linkages with firms conducive to technology transfer in addition to the mere financial incentive.

Since the 1980s, research universities have established Intellectual Property Policies (IP) and Technology Transfer Offices (TTOs) to capitalize on faculty inventions through mainly licenses to industry and spin-off companies. Thursby and Thursby (2007) found that the primary goal of TTOs is licencing income from patents. However, the rate of income generated varies significantly across institutions (Friedman & Silberman, 2003; Landry, Amara, & Rherrad, 2006; Lockett & Wright, 2005; O'Shea et al., 2005). In many cases, spin-off companies become the seeds of a business park nearby universities. Also, some of these local businesses are likely to provide research funds to universities (Blumenthal, Gluck, Louis, Stoto, & Wise, 1986; Dechenaux, Thursby, & Thursby, 2009). More recently, it has become clear to university administrators that TTOs are not revenue generators but catalysts for the creation of jobs and business and for the recruitment of star scientists (Campbell et al., 2004; Powers, 2004).

Typical intellectual property policies claim exclusive ownership of faculty inventions and pay a share of royalties (normally between 30 and 50 %) to faculty if available at any time. Nearly all intellectual property policies in American universities stipulate that faculty have the obligation to disclose any inventions, but the truth is that very few faculty actually follow through, which points to one more inefficiency of the current model of ownership and TTOs (Thursby, & Thursby, 2007). Mendoza and Berger (2008) and Mendoza (2012) show tensions between university policies on the one hand and faculty and industry collaborators on the other hand. Notably, faculty did not report IP conflicts with industry but with their own institution. Sometimes collaborations and partnerships get frustrated because lawyers in universities and companies cannot resolve differences. In fact, according to Mendoza and associates, there seems to be a sense of solidarity and unity against the IP policies at universities among individual faculty and their peers in industry, who want to collaborate if their institutions can get past IP hurdles. Also, in these studies, both faculty and administrators found IP policies unrealistic given the lack of expertise on the part of academia related to the development and commercialization side of research.

Critics of technology transfer through licensing with financial incentives argue that these practices might drive faculty away from curiosity-driven research (Washburn, 2008). However, Thursby and Thursby (2011b) provide empirical data to argue that the financial incentives of technology transfer might not be enough to significantly impact curiosity-driven research. On the contrary, others have indicated that financial incentives are necessary for faculty to disclose their inventions and ultimately transfer technology (Mowery et al., 2004; Rai, 1999). For example, Mendoza and Berger (2005) studied the relationship between nine IP policies of nine peer universities and faculty patenting activity. They found that those policies with strict disclosure requirements but with generous royalties' distributions to inventors and the department of inventors resulted in more patenting productivity. On the other extreme, one university with very relaxed disclosure requirements but with high royalties to inventors and their departments, also resulted in high patenting productivity. This opens the question of whether it is necessary to require faculty to disclose their inventions or instead, offering incentives in the form of

royalties is enough for patenting activity. A key component in these policies is to reward not only faculty monetarily but also their unit to further develop its research infrastructure. This combination of rewards is likely to satisfy both intrinsic and extrinsic faculty motivation.

Interestingly, for some faculty, financial incentives might actually direct their efforts outside the university to avoid sharing profits under IP policies and the bureaucracy of TTOs. Thursby, Fuller, and Thursby (2009), analyzing a sample of 5,811 US patents with faculty as inventors, found that only 62.4 % of these were assigned to universities, despite intellectual property policies stating that all faculty inventions should be assigned to universities. This result means that almost 40 % of patents from faculty inventions are filed through consulting. In their models, the authors also found that the higher the inventor's share of revenue, the higher the chances of university assignment in relation to company assignment of patents. In addition, they found significant differences in faculty patenting by field, quality of departments, urban versus rural, and public versus private universities. Similarly, Fini, Lacetera, and Shane (2010) conducted a survey of 11,572 faculty finding that about two thirds of start ups by academics are not based on disclosed patents to universities. Moreover, they show that faculty that disclose inventions to TTOs spend less time on teaching and research and more time interacting with industry than those who do it outside the IP system, raising questions about the efficiency of TTOs. Faculty in the biosciences are more likely to be involved in entrepreneurship through disclosing to the TTOs than faculty in other fields. This correlates with the argument that TTO offices tend to focus in some areas more than others depending on the degree of success in licensing (Shane, 2004a). These differences in patenting behaviors by fields can also explain why some fields tend to have more spin-offs than others (Kenney & Patton, 2011). Finally, in an earlier study, Thursby, Jensen, and Thursby (2001) found that less than half of faculty inventions are disclosed to TTOs for a variety of reasons, including lack of knowledge of the commercial potential of their inventions, unwillingness to become involved in the university patent process, difficulties working with the TTO office, not wanting to share revenue with the university, and simply lack of time.

Kenney and Patton (2009) challenge the current role of TTOs and IP policies, which has been portrayed as an agent of both inventors and universities (Jensen & Thursby, 2001). This image is useful in understanding the inherent tension of TTOs and their IPs due to the minimal or lack of control over behaviors of faculty, who are the ones with the essential knowledge necessary to patent and license. This creates a host of contradictions, misaligned incentives and inefficiencies. Therefore, Kenney and Patton offer two alternative models: inventor ownership or weak/non-ownership. They claim that by assigning the ownership to the inventor, technology will be transferred more efficiently because inventors are the experts in the technology. In this case, TTOs can provide support to faculty in commercializing their inventions and oversee the commercialization process to make sure they adhere to legal and ethical standards. TTOs can charge a fee or some sort of compensation for these services. The second model has two alternatives. In the first one, all university inventions would be made public by eliminating TTOs. In the second

variant, nonexclusive licensing is mandatory, by which universities will still hold ownership but licenses are non-exclusive. After a careful analysis of these three models Kenney and Patton concluded that the non-exclusive licensing model is the closest to the current model, while the public domain model, by removing all intellectual property protection from university research, also eliminates any direct incentive for commercialization. The inventor-ownership model offers decentralization and possibly increased innovation. The current model is likely to inhibit faculty entrepreneurship and retard technology transfer, although it is the one that is most likely to bring income to universities. Later, Kenney and Patton (2011) argue that if universities move towards an inventor ownership model and support students and staff commercializing their inventions, they might attract more disclosures and still charge a reasonable fee for the services. In the end, this might also encourage more entrepreneurship among faculty and students and the university would work as a facilitator for economic development as opposed to a profit-making agent in the market as it is with the current model.

Impact on Students

Technology transfer from academia to industry also happens through students, and yet, student entrepreneurs are largely understudied. There are many success stories of startups by students including Facebook, Microsoft and Netscape. Kenney and Patton (2011) argue that student's patenting has been overlooked in part because it has happened mainly in information technologies, an area in which TTOs are less likely to be involved, which again brings into question the effectiveness of these offices. Nelson (2012) illustrates through a comprehensive case study of a highly productive research center how graduate students are usually heavily involved in outputs such as patents, even independently from faculty. Åstebro, Bazzazian, and Braguinsky (2012) show that start-ups by recent graduates in science and engineering greatly outnumber that of their faculty and staff. They also show that students are also two times more likely to start new business than their faculty. In fact, 24 % of alumni of MIT and Stanford start new businesses (Hsu, Roberts, & Eesley, 2007; Lazear, 2005; Roberts & Eesley, 2011). However, only 5 % of Harvard alumni start new business, suggesting important disparities across universities. Some studies have looked at the effect of entrepreneurship instruction showing mixed effects on starting a business (Oosterbeek, Van Praag, & IJsselstein, 2008; Peterman & Kennedy, 2003; Souitaris, Zerbinati, & Al-Laham, 2007), which indicates the need for further research. Mars, Slaughter, and Rhoades (2008) published one of the few studies on the emergent role of what they called the state-sponsored student entrepreneur, in which students are also active actors in technology transfer, especially with the recent increase in entrepreneurship education.

The implications of industry-academia linkages for students have been studied by few scholars. Initially, Gluck (1987) studied students with graduate assistantships

from biotechnology companies and found a host of benefits including networking opportunities and valuable learning experiences through interactions with industry representatives. Later, within the discourse around academic capitalism, several authors voiced concerns about the adequacy of training graduate assistants working on projects sponsored by industry. In this view, graduate students are seen as cheap labor who have to respond to the demands of their sponsors, private firms, at the expense of learning basic science, socializing into the Mertonian values of academia, and focusing on solving social problems (Gumport, 2005; Lee & Rhoads, 2004; Slaughter, Campbell, Holleman, & Morgan, 2002; Slaughter & Leslie, 1997). Other concerns included overemphasis on applied research, potential exploitation and inability to publish their dissertations due to secrecy of knowledge and contractual agreements with sponsors or even talk about their results in job interviews. In extreme cases, there have been intellectual property disputes over royalties from patents involving graduate students (Grimshaw, 2001).

Empirical studies indicate that overall, these concerns are not accurate. Research with industry involving students generally has enough basic science to fulfill academic goals including publishing and scientific inquiry as well as timely progressions of students within their doctoral program (Mendoza, 2007a, 2012). Similarly, in a later study, Slaughter, Archerd, and Campbell (2004) found that faculty saw graduate students primarily as apprentices and future colleagues. This image goes back to the initial results in Gluck (1987) and agrees with more contemporary studies. For example, one of the most significant results of Mendoza and Berger (2008) and Mendoza (2007a) is the significance that faculty place on education in light of linkages with industry. In these studies, faculty express their intentionality in protecting students from conflict of interests that might emerge when working with industry and moreover, use opportunities in industry to enhance the educational experience of students. Some faculty go as far as rejecting grants that might put in danger the proper education of students in basic science. However, there are indications that faculty in some departments protect students more than in other departments within the same discipline (Mendoza, 2012).

Mendoza (2007a, 2012) indicates that both faculty and industry representatives believe that exposing students to projects sponsored by industry bring significant benefits far beyond assistantships such as learning about the culture and needs of industry including communication styles and ways to approach problems. This becomes even more meaningful in fields of study where most students end up working in industry or as faculty in applied fields where basic research is inspired by use. Through these partnerships, students have the opportunity to learn about the realities of work in industry. For students interested in academic careers, interactions with industry are still positive as sources of future research grants and collaborations as well as research insights. In fact, there is evidence indicating that students highly value interactions with industry for dissertation topics and also practical, down-to-earth insights (Mendoza, 2012). Finally, industry is interested in sponsoring academic research as a way to facilitate the training of their future employees with fundamental knowledge and skills related to their products. Thus, job placement is an important by-product of the involvement of students in industry-academia

linkages. However, the studies by Mendoza (2007a, 2012) found one consequence of these linkages detrimental to students, and that is the instability and short-term nature of industrial funding, especially when compared to government grants. These grants are normally less than a year long and sometimes they end abruptly, potentially affecting the academic progression of doctoral students.

Tierney and Rhoads (1993) highlight the role of doctoral education as the anticipatory socialization to faculty roles, and so, as doctoral students engage in projects sponsored by firms and interact with industry representatives who hold a different culture from the academic culture, it is natural to question if these linkages have the potential to impact the anticipatory socialization of future faculty towards a business-like culture. If the answer is yes, then, a gradual cultural shift in the academic profession can lead to significant changes in academia including what is valued and rewarded, in particular in relation to Mertonian values. Mendoza (2007a) studied the cultural knowledge that doctoral students in a department heavily involved in research sponsored by industry were acquiring as part of their anticipatory socialization for academic careers. Mendoza found that despite the heavy presence of industry in this particular department, the cultural knowledge acquired by students agreed with the core structure of the academic profession as idealized by Merton (1973). Moreover, in this case, linkages with private firms became a mechanism to achieve traditional outcomes of the academic profession by not only providing adequate funding to doctoral students and research infrastructure but as science-and-technology capital for ideas and connections for future research. This study is consistent with other findings indicating that faculty preferences are driven by academic values rather than opportunities in the market (Murray, 2010; Stephan et al., 2007; Thursby & Thursby, 2010, 2011a). Nonetheless, Mendoza (2007a) found hints of cultural changes among students with industrial sponsorship. For example, in the minds of these students, having industrial grants is as prestigious as traditional government grants.

Similarly, Szelényi (2013) investigated how doctoral students in science and engineering make meaning of money during their doctoral socialization. Szelényi found that students often had a utilitarian meaning of money as necessary in a competitive and resource-dependent environment creating competition for research funding and inequalities among departments, disciplines, and even research laboratories. Money also took a symbolic value among students in this study, by which those faculty members and research labs with sizable grants, especially from the federal government, were considered more prestigious and meant more freedom in research and peace of mind for students. Social relations were critical for students to construct their meaning of money. Szelényi discusses the ways in which doctoral students are socialized to become academic capitalists, understanding the importance of securing funding and engaging in entrepreneurial behaviors to succeed in academia. However, in this study, entrepreneurialism was questioned by some students who decided not to follow an academic career due to their dislike of aggressively pursue funding. More recently, Mars, Bresonis, and Szelényi (2014) studied how doctoral students are influenced and how they interpret the coexistence of multiple logics in science and engineering. The findings indicate

that peer behaviors are stronger influences on students than entrepreneurial forces, reinforcing the traditional scientific logic. Therefore, the national agenda in support of the triple helix model is likely to influence students through faculty as they engage in academic entrepreneurship. Students in Mars, Bresonis and Szelényi's study, similar to those in Mendoza's study (2007), embraced a blended logic in which entrepreneurialism is viewed as a mechanism to address social issues through technology transfer.

Contexts and Hierarchies: A Critical Look at Industry-Academia Linkages

Using AUTM data from 1991 to 2000, Turk-Bicakci and Brint (2005) analyzed industrial funding and patenting patterns, finding significant disparities across institutions. In particular, among 113 research universities, industry expenditures for university R&D in 2000 ranged from $63,000 to almost $110 million. Industry funding for the top 25 universities increased, on average from about $20.7 million in 1991 to about $44.1 million in 2000, whereas industry funding for the other 88 universities fluctuated and on average rose between $7 and $9 million during that same period. As expected, similar patterns can be observed related to licenses granted to industry. The number of licenses granted to the top 25 universities increased an average of 31 licenses per institution, in 10 years, while the number of licenses granted in the second group grew an average of 6.5 licenses. Finally, income from licensing grew for the top group an average of approximately $2.8 million to $9.7 million, while licensing income in the second group climbed from an average of approximately $1.4 million to $5.6 million.

A somewhat surprising result from Powers' (2004) study is that industrial R&D funding to universities was not a predictor of licensing. However, in previous work, industrial R&D funding has been a predictor of licensing but at top-tier institutions only, which points to disparities in commercialization mirroring ranking hierarchies in prestige and overall resources, including top faculty (DiGregorio & Shane, 2001; Powers, 2000). Along these lines, DiGregorio and Shane (2001) and Powers (2003, 2004) found that quality of faculty and science were predictors of licensing, which again favors top-tier universities who are likely to have better quality of faculty and science. The size of the technology transfer office is also positively correlated with licensing outcomes (Hauksson, 1998; Powers, 2003, 2004), favoring those institutions with the resources to invest is sizable TTOs.

Several scholars have shown the need to contextualize the reach and implications of academic capitalism (Evans, 2010; Mendoza, 2009, 2012; Welsh et al., 2008). In fact, these studies show that the notion of the entrepreneurial university successfully transferring technology is true for only a relatively small portion of top research universities, in a few fields, and in a few countries, most of them in the U.S. (Chakrabarti & Santoro, 2004; Johnson, 2007; Powell & Owen-Smith, 1998; Turk-Bicakci & Brint, 2005). These disparities in technology transfer also mirror

inequalities across institutions related to federal research support. In general, top-ranked universities enjoy greater federal research support than their lower-ranked peers. Also, top-ranked institutions are likely to attract industry because these institutions generally have more prestige, equipment, and expertise that is of value to industry. On the contrary, lower-ranked institutions enjoying less federal support look to industry as sources of much needed funding (Geiger, 2004; Mendoza et al., 2012). The following sections illustrate how these differences result in different strategies of actors involved as well as various departmental climates and cultures in the ways industry linkages are valued and approached (Turk-Bicakci & Brint, 2005). Thus, Tuunainenn (2005b) and Mendoza (2009) call for empirical research that challenges science as a unitary social institution and point to the need for studies at the departmental level in order to understand crossboundary processes, ecologies, and agency. This is necessary, according to Mendoza, because the literature overly simplifies the implications of industry-academia linkages, limiting the explanations accounting for variations that exist across disciplines as well as within disciplines.

Context, Culture and Agency

Culture guides behavior and is context-specific (Tierney, 1988). Therefore, faculty behavior in relation to industry linkages depends on their context and the associated culture surrounding each individual faculty member. Culture in higher education is the result of a dynamic overlap of various cultural layers or spaces. First there are the normative pressures coming from the external environment, for example, the influences in terms of norms, values, and expectations that come from academic capitalism (Mendoza & Berger, 2008). In the external layer we also find the overarching academic culture embodying Merton's view of the academic profession (1973) based on the concepts of academic freedom, individual autonomy, production and dissemination of knowledge, collegiality, collegial governance, service to society through the production of knowledge, and education of the youth. Then there is the institutional culture, which is comprised of many subcultures such as disciplinary, departmental, and administrators' and student subcultures. Even within a given department we find different subcultures among faculty related to subcultures in their disciplines or as a result of distinct research groups, in which some might be heavily involved with industry and others might have federal funding exclusively (Becher, 1989; Kuh & Whitt, 1988; Tierney, 1988).

Understanding the different cultural influences on faculty behavior is essential when studying industry-academia linkages. Although all faculty in the U.S. are immersed within the same external cultural layer, disciplinary, institutional and departmental cultures exert powerful influences on faculty behavior and even their identity. Mendoza (2009; 2012) explains this by illustrating the different basic assumptions and values that disciplines hold based on classifications such as the Kolb-Biglan two-dimensional plane with one axis being applied-pure and the other being soft-hard (Kolb, 1981) and Stokes' (1997) division of science and engineering

in the Edison's, Bohr's and Pasteur's quadrants. As explained earlier, science in the Pasteur's quadrant is inspired by use and so, industry-academia linkages come naturally in this quadrant as a source of inspiration for research as well as science-and-technology capital. By the same token, industry-academia linkages in the other two quadrants are clearly at odds or non-existent. On the one hand, academic research is not purely applied and so, the Edison's quadrant exists only in industry. On the other hand, science in the Bohr's quadrant is purely basic and non-inspired for use. Some discoveries in the Bohr's quadrant might eventually advance industry, such as the case of quantum physics in supercomputing, but distant enough in the future to make immediate linkages with industry irrelevant.

Mendoza (2009) argues that even within the Pasteur's quadrant, faculty respond differently to industry-academia linkages. For example, significant cases of misconduct in research have taken place in biotechnology due to corporate intervention in academic research (Krimsky, 2003). Then, Mendoza (2012) presents a case of a department in material science embracing core academic values in harmony with their linkages with industry. In addition, there is the case made by Ramaley (2005), who argues that faculty can best serve the public good if they tailor their scholarship towards the Pasteur's Quadrant. Mendoza (2009) makes the case that in the Pasteur's Quadrant profit making and personal gain resulting from commercialization of research through licensing and start-up businesses may be the element that brings corruption to academia.

Kuh and Whitt's framework of culture in higher education (1988) highlights the role of individuals in shaping culture; therefore, individual faculty bring a set of values and preferences that matter in the degree and the way they engage with industry, although a cohesive academic culture is still prominent. For example, Mendoza and Berger (2008) discuss individual differences among faculty in materials science, a field with close ties with industry where it is common to have scientists transition from academia to industry and vice versa. In this case, those faculty who have worked in industry tend to value more linkages with industry, have more projects with industry and so are more likely to patent. This hints at the notion that some faculty have more science-and-technology capital to engage with industry (Bozeman et al., 2001). Likewise, Chakrabarti and Santoro (2004) concluded that the effectiveness of industry-academia linkages depends heavily on different dimensions of social capital, which is also a characteristics of individual faculty members. For example, the presence of a dedicated champion, both at the university and firm, was critical for nurturing effective collaborations. Geographical proximity was also an important factor in facilitating these collaborations as well as the acquisition of social capital. Szelényi and Goldberg (2011) explored the correlation between faculty characteristics and their propensity to obtain industrial funding and found that political views also have an important implication for faculty in seeking industrial grants: "This is reflected in the gradual decrease in the estimated percentage of faculty involved in industry-funded work when moving from far right (14 %) to conservative (11 %) to middle-of-the-road (9 %) to liberal (7 %) to far left (6 %) ideological self-placement, after controlling for other factors (p. 793)". Materialistic-minded faculty tended to have greater funding

from industry exclusively. Prestige and recognition were not significantly correlated with faculty member's attainment of exclusively industrial funding, suggesting that governmental funding is associated with higher levels of prestige. Those faculty with a higher interest in conducting research and high levels of scholarly output, tended to have less industrial funding. Regardless of the sources of funding for their research, all faculty in Szelényi and Goldberg's study had strong civic-minded values and interest in working for social problems, pointing at the notion of hybridity in values discussed earlier.

Contemporary models of organizational culture emphasize the role of agency, which are the strategies of faculty to navigate the academic field. Sewell (1992) considers organizational structures unstable and continually created and recreated by individuals as social life takes place. These structures are mental schemas or frames of reference guiding behavior and resources, which in turn contribute to the formation, reinforcement, and modification of schemas. Some structures are more stable and deep than others. Also, structures overlap and intersect. Sewell discusses how these schemas are transported and adapted by individuals to other social settings and how they are interpreted differently by actors within the same context. Given the role of resources involved in the definition of structures, those with more resources enjoy of a competitive advantage to reproduce hierarchical social structures, empowering individuals, at the expense of disempowering others and limiting their social action. In this context, Sewell considers agency as the ability on the part of actors to apply schemas to new situations and reinterpret or mobilize corresponding resources. Szelényi and Bresonis (2014) applied Sewell's theory to the case of faculty and doctoral students working in projects with industry by saying:

> Faculty and doctoral student scientists and engineers who operate within intersecting knowledge production and application territories may both claim and mobilize resources differently within or across overlapping or new schemas. It is conceivable that individual faculty or doctoral students may use agency to claim resources from academic capitalism and reshuffle them to an alternative schema with a greater degree of public good orientation (p. 135).

An example of how actors reshuffle resources at the boundary of organizational structures are the cases reported by Mars and Rhoades (2012) and Mars and Lounsbury (2009) of student entrepreneurs who use resources from the academic capitalism domain to achieve social goals.

Szelényi and Bresonis (2014) studied the agency of faculty in science and engineering at the intersection of academic capitalism and the public good finding three ways in which faculty negotiate their work in this space, namely complementary, cautiously complementary, and oppositional. First, they defined an intersecting space between academic capitalism and the public good based on a dual nature of the public good: (1) serendipitous and (2) accelerated through technology transfer. This intersected space has been conceptualized by Mars and Rhoades (2012) as narrow; however, for Szelényi and Bresonis it is expansive and even within all functions of certain fields, especially in science and engineering. In Szelényi and Bresonis, the schemas of participating faculty associated with the public good space of knowledge

production are associated with social value whereas the schemas of the academic capitalism regime refer to the commodification of knowledge and profit making. These two schemas are present in microstructures mixing the public and the private regime permeating the entire university. Szelényi and Bresonis offer the example of start-up companies by faculty to transfer technologies created in part with federal funds that can serve many in medical applications while capturing financial resources. This is an example of complementary negotiation in the agency of faculty. Others cautiously engage in commercialization with the notion of clearly protecting core academic norms but allowing a portion of their work to belong in the capitalistic regime. Interestingly, Szelényi and Bresonis also found cases similar to the one reported by Murray (2010), in which faculty oppose the academic capitalistic regime by patenting their discoveries to keep them away from commercialization. All these examples underscore the role of faculty agency in how they position themselves and act at the intersection of the capitalistic and public good spheres. However, sometimes individuals find themselves with choices at odds with their personal values and with little resources to reshuffle schemas as desired creating a significant struggle in some cases. This is especially the case for doctoral students and junior faculty, or perhaps, most faculty in less prestigious departments as discussed in the next section (Mendoza et al., 2012).

More recently, Glenna et al. (2011) argued that most of the research on faculty involvement in technology transfer focuses on external factors, neglecting the individual motivations and agency by assuming, influenced by rational choice perspectives, that individual values and preferences are exogenous and unvarying. In quantitative studies, even when intrinsic motivations and values are acknowledged, these are treated as exogenous in their models as if they are not influenced by economic and structural influences. Therefore, both structural and neoclassical/rational choice theories of action oversimplify the complex interactions between the environment and the individual. In this sense, Powell and Owen-Smith (1998) argue that scientists have pre-committed norms and values, but Glenna et al. add that these are influenced by external forces and interactions with others in and outside the organization. In other words, scientists' research is influenced by both structural and individual-level factors. In this line of thought, Nee and Ingram (1998) put forward a theory of action that retains the neoclassical assumption that individuals are rational but also integrates the notion that individuals' perceptions and self-interest are influenced by cultural factors and endogenous preferences that, in combination, can generate normative structures. Therefore, values are both endogenous and exogenous and a more dynamic theory of action is needed. A way to understand this is to still assume that individuals come with exogenous values and preferences that are manifested or repressed differently as individuals interact with specific contexts and are subject to time-varying macro-level factors. For example, under this new theory of action, if a faculty member had a strong preference to commercialize research prior to the passage of the Bayh-Dole Act, she would have found a climate much less supportive of those initiatives and probably the strengthening of associated values would have been limited. Likewise, many

studies have supported the notion that values and norms are influenced through institutional structures, personal collaborations, and macro forces, reinforcing the endogeneity and heterogeneity of values positions. In sum:

> Scientists' values are exogenous, but at the same time recognize that the ability of scientists to express their values might be enabled or constrained by their institutional environment and funding sources (p. 965, Glenna et al., 2011).

Applying this view, Glenna et al. (2011), using a survey of plant and animal biotechnology scientists in the U.S. concluded that scientists have a diverse range of values regardless of the climate towards commercialization at their institutions. Also, they show that market-science values are related to applied research agendas and stronger when scientists receive funding from industry. Similarly, Owen-Smith and Powell (2001) show the different degrees of inclinations of faculty towards industry from rejection, hybridity, and actively engaging in commercialization. Among the hybrids, Welsh, Glenna, Lacy and Biscotti (2008) describe the "reluctant entrepreneur" and the "engaged traditionalist." In their words:

> The "reluctant entrepreneur" views the academic and industrial worlds as distinct but engages in proprietary activity, patenting, while assigning ownership to the university. To some extent the scientist considers patenting necessary to protect academic freedom and the university's commercial or intellectual interest from commercial encroachment. The "engaged traditionalists" view the academic and industry worlds as distinct, but use their academic credentials for commercial gain through patenting and consulting work, outside of their university duties (p. 1850).

In relation to individual attributes, Evans (2010) makes a distinction between central or highly recognized researchers and peripheral ones, using his own words, when making reference to networks of science. Evans found that central scientists are the most productive and are the ones who are more likely to be influenced by industry to speculate more than their lower-status counterparts. Evans further says that scientists at the periphery are already very applied and so less influenced by industry:

> If government funding eclipsed industry money, as it did in postwar America, we would know more about less. In its exploratory phase, industrial science travels further afield from theory. It more expansively searches through the range of scientific possibilities than academic science, which knits new experiments tightly around the edges of existing, theoretically informed hubs . . . In this way, industry science is no less intelligent, but it rests on less prior knowledge than academic research. Industry science pushes experiments down paths that an academic project of incremental confirmation and generalization would have no reason to travel. Industry science is, in a word, more speculative. And yet, by speculating, science-based industry injects innovations into the academy—anomalous, unexpected, and not entirely reconcilable findings that will more likely shape the next generation of academic science than the present one, if at all (Evans, 2010, p. 442).

In this section, I illustrated the role of culture and agency in industry-academia linkages by which the interaction of the environment—context—with the specific personal attributes of faculty result in different reactions and behaviors. Also, the concepts of environment and individual attributes are complex, interconnected and multifaceted. I argue that this complexity agrees with studies such as the one by

Owen-Smith and Powell (2001) finding very different rates of invention disclosure of two campuses with similar invention capacities. Also, Stephan et al. (2007) found strong differences in patenting activity among faculty by fields. Unfortunately, the vast majority of research uses samples of faculty from multiple institutions and disciplines, with almost no consideration to the interplay of context and individual (Mendoza, 2009; 2012). There is one more dimension generally underexplored in previous studies that also accounts for discrepancies within disciplines, and that is the role of hierarchies in academic fields.

Hierarchies in the Academic Field Also Matter

Bourdieu (1993) conceptualized the social world as spaces organized by structured hierarchies, and academia is no exception. These hierarchies are characterized by differential holdings of capital that translate into structures of power and subordination. Therefore, individuals (agents) and organizations occupy dominant and subordinate positions in social fields according to three dimensions of capital: amount, distribution of types of capital, and the evolution of the volume and distribution of capital acquired over time. Bourdieu (1986) discussed four types of capital: economic (material, financial), cultural (knowledge, education, skills, mannerisms), social (connections, networks) and symbolic (prestige, recognition). Those agents or institutions in close proximity in the social field experience similar conditions and therefore, are likely to embrace dispositions and interests that result in similar practices, representations, and worldviews—culture. In other words, those in close proximity share a common ecology or "habitus." These "habiti" become mechanisms perpetuating inequalities and marginalization in the social field through competition for the various forms of capital. Agents and institutions in social fields develop strategies to maintain or advance their status, their "habitus."

In the case of the social field of academia, each discipline can be seen as a social field with departments as the institutions and faculty as the agents. Departments and faculty continuously compete for capital. What is particularly unique about the academic field is the prominence of symbolic capital—prestige and recognition—as the most highly prized commodity, more than material and political wealth (Becher, 1989). Bourdieu (1996) identified three kinds of symbolic capital in the academic field: academic (power over academic resources), scientific (reputation and prestige due to scholarly publications) and intellectual (ability to influence public opinion). Later, Bozeman et al., (2001) introduced the idea of scientific-and-technical (S&T) human capital as the sum of scientists' professional network and their technical skills and resources for the conduction of science. These forms of capital can be accumulated and used to attract more capital emphasizing hierarchies in the field. Top departments with large amounts of capital are likely to attract top faculty, who continue to perpetuate the accumulation of capital.

Mendoza, Kuntz and Berger (2012) investigated industry-academia linkages in light of Bourdieu's academic field stratification according to differential holdings

of capital. They interviewed faculty with industrial funding in five materials science departments with different numbers of NSF grants as a measure of symbolic capital. The higher the number of NSF grants, the higher was the ranking of the department. This study found significant differences in faculty "habitus" between the top-ranked department and the lowest-ranked department. Overall, they found that the higher the ranking, the more choices faculty have and so, could afford to be selective in choosing their industrial partners and establish linkages with clear delimitations of their work in order to protect their academic freedom, scientific interests, ability to freely publish, and provide a proper educational experience to their graduate students. A good example is the case of the Oncomouse reported by Murray (2010) in which faculty ended up patenting their own version of mice to protect their scientific interests from companies. What is not acknowledged in Murray's study is the fact these faculty are likely to come from top departments that could afford to reject demands from industry and continue conducting science on their terms. This was likely enabled by the ability of faculty to secure unrestrictive grants, normally from the government, and enjoy a healthy stream of research funding. The lower the ranking in Mendoza et al.'s study, the more faculty struggled to find sources of funding for their research and the more willing they were to compromise, finding themselves with more restrictions on their research, facing more tensions around intellectual property, and struggling to engage students in projects with industry with sufficient basic science for dissertations, similar to what Krimsky reports (2003).

Hence, by revealing the hierarchical structure of the academic field, it becomes clear that position in terms of dominance-subordination in the academic field matters. Mendoza et al. (2012) describe how this scenario reveals a form of accumulative advantage whereby the rich get richer in terms of both symbolic and material capital. Those faculty members who have access to a greater stock of symbolic capital are able to attract more economic capital in the form of unrestrictive grants that leads to publications and other scholarly activity that brings prestige (symbolic capital). Departments that have established high levels of symbolic and material capital are much more able to buffer themselves from pressures that limit the core values of the academic profession. Chakrabarti and Santoro (2004) also found that the higher the reputation of the university, the less likely faculty were interested in working on applied problems in industry. High ranking was also positively correlated with networking, more than geographic proximity. This agrees with Mathies and Slaughter's (2013) work on network analysis showing the stronger connections (higher capital) of top research universities to Fortune 500 companies in comparison to public research universities. These studies also agree with Naidoo (2004) who asserts that market pressures are likely to influence higher education unequally due to the hierarchical nature of academia. Moreover, the competition for resources reinforced by academic capitalism fueled by rankings is likely to accentuate these differences.

Going back to the idea of faculty behavior in their "habitus," Mendoza et al. (2012) assert that industry-academia linkages result in a range of possibilities in how faculty strategize their approach in relation to opportunities in industry depending on their position in the academic field measured by the amount of capital in their

possession. Faculty in lower-ranked departments have to adapt to fewer resources available and develop strategies to secure funding even if it means compromising core academic values and sign contracts with industry with a number of strings attached. Consequently, faculty members in the less-highly-ranked departments are more likely to report the need to obtain smaller, less prestigious overly-directed sources of funding. This is clearly a strategic choice that relinquishes autonomy, symbolic capital and long-term development for more short-term material gains. Such trade-offs are perceived as necessary in order for these faculty members to develop financial backing for their work.

This section reflects on the importance of adopting a critical perspective when studying industry-academia linkages. Accounting for the differences that exist by fields, departments and individuals is essential to comprehensively understand the nature and implications of industry-academia linkages. Based on this premise, in the following and last section I offer suggestions for future research with particular attention to a list of frameworks that are likely to inform the contextual differences in industry-academia linkages as well as few areas in need of more research.

Insights for Future Inquiry

Eddy (2010) developed a framework to understand and study the formation of partnerships and collaborations in higher education, and it is useful for the study of industry-academia linkages. The first important distinction in the framework is to separate the notions of partnerships versus collaborations, as indicated previously in this chapter. Collaborations refer to linkages between individual faculty and peers, in this case, industry representatives or colleagues, whereas partnerships refer to institutional formalized linkages between universities or subunits within universities and other organizations such as companies. Partnerships respond to organizational goals whereas collaborations respond to individual goals and both differ in the level of formality.

According to Eddy (2010), the elements involved in the formation of partnerships include mainly the social capital of individuals involved and access to organizational resources useful for establishing partnerships. The role of a champion is critical for the development of partnerships in the early stages, which gets to the issues around collaborations involving individuals. In other words, partnerships normally start with a collaboration and the presence of a champion. These collaborations are guided by the normative pressures of disciplines and institutions but also, according to Eddy, by several elements such as trust, relationships, shared goals and communication between faculty and their partners. As these elements are defined with the progression of the collaboration, Eddy identifies a number of challenges that might emerge around issues of time constraints, reward systems (especially for promotion and tenure), rank or level of seniority, and normative pressures. These elements and challenges can be used to conceptualize the study of industry-academia collaborations comprehensively. In other words, instead of

focusing on one aspect of industry-academia collaborations, say differing goals or patenting in light of tenure and promotion, it would be more helpful to conduct studies addressing the interplay of all elements and challenges as presented in the framework by Eddy. By doing so, studies would be able to take into account contextual differences due to normative pressures and the hierarchical nature of the academic field and its associated reward structures as well as individual characteristics impacting those elements and challenges including demographic attributes such as social capital of individuals involved.

Eddy's framework (2010) also provides useful insights for the study of partnerships, which might become ventures involving multiple stakeholders and synergies that result in what Eddy coined as partnership capital. At this point, the partnership does not depend on the social capital of individuals and can survive despite rotation of personnel and their own social capital. The motivations to establish partnerships can be extrinsic (by mandate) or intrinsic (common goals and values). High levels of intrinsic motivation from all the parties involved is likely to result in the formation of partnership capital whereas the prominence of extrinsic motivation or mandate is likely to halt the success of the partnership. Times of fiscal constraints are ideal for the formation of partnerships to leverage resources. The process of forming a partnership is a succession of non-linear iterations. Gray (1989) discusses the importance of framing and conceptualizing the partnership at the beginning to set the tone that will likely guide the partnership. The role of the leadership or champion in setting the vision as well as common interests and language is critical. This is the beginning of trust-building. With time, the partnership develops its own norms and goals that might even shift as it progresses. Other elements that matter in partnerships are context, the history of the relationships as well as the resources and ability to leverage resources.

Eddy (2010) elaborates in detail on the two types of capital involved in the formation of partnership: social and organizational capital. These two forms of capital might lead to the formation of partnership capital. Social capital in the formation of partnerships comes from the champion or leadership, the so called boundary spanners (Granovetter, 2005). The role of the champion is to envision and communicate the benefits of the partnership to all involved. Those with greater connections and relationships (density) are better suited to champion a partnership. The more central the champion is located within networks, the higher the social capital that the champion can bring to the forming partnership. These connections and relationships are likely to grow and be productive if they are built on trust and have abundant exchanges of information. Individuals with the ability to connect networks have high levels of social capital. Social network analysis can be used to study the amount of social capital individuals possess to champion the establishment of partnerships (Dallmer, 2004; Fang & Hung, 2008; Mathies & Slaughter, 2013).

Organizational capital refers to tangible resources that champions can access such as space, technology, funding, and access to knowledge or human resources. Access to organizational capital is determined by the centrality of the champion in the organization; therefore, leadership is likely to have access to more organizational resources. Access to organizational capital also depends on organizational

characteristics such as structure, culture, and politics. If the partnership is success-
ful, with time, partnership capital begins to develop. At this point, the partnership
has moved from a collection of individual interests to an organizational goal
with shared values, meanings, language, objectives, and procedures. It is likely
that elements of the partnership become institutionalized. The sum of all this
becomes partnership capital. Future studies can investigate the formation of social,
organizational and partnership capital in linkages between academic units and firms
to determine how these forms of capital shape and are sustained for productive
collaborations. Finally, Eddy (2010) used Lewin's force field (1943) to illustrate
the tug-of-war that occurs in partnerships along six dimensions: conflict-trust;
individual motivations-relationships; institutional loyalty-shared values; changed
objectives-open communication; lack of resources-organizational resources; shift
of key players-strong champion; and individual focus-partnership focus. This force
field is useful to understand the challenges and tensions that might develop as
partnerships consolidate.

Similarly, at the collaboration level, Mendoza et al. (2012) found that faculty
involved in collaborations with industry find themselves balancing their work
around six dimensions: unrestrictive versus restrictive type of grants, applied versus
basic research, self-directed versus resource-directed research agenda, intellectual
property (controlled versus uncontrolled), and socialization of students towards
an academic versus industrial culture. Balancing these six dimensions depends
on the specific characteristics of faculty and the context of their departments and
disciplines. These patterns should be investigated in future studies in a variety
of disciplines and departments in a way that context (normative pressures and
hierarchies) is always part of the research design.

Another framework useful to understand industry-academia linkages is the one
on academic entrepreneurship presented by Mars and Metcalfe (2009). This work
outlines a clear conceptual understanding of entrepreneurship theory applied to
academic capitalism in a variety of contexts, including disciplines, activities, and
types of institutions beyond research universities. This framework includes the
concept of social entrepreneurship as well as entrepreneurship education as a means
to transfer knowledge and technology to society for the public good, highlighting
understudied ways in which academia interacts with the market. For example, Mars
and Metcalfe present the example of a music professor who sought assistance from
the entrepreneurship center of his university to develop a business model to promote
classical music.

One of the most intriguing areas of research is the issue of boundary differentia-
tion (clearly and intentionally defining academic boundaries) presented by Murray
(2010) instead of boundary blurring or integration (creating a culture blending
academic with business values) as it has been assumed in most of the literature
in the last decade. If in fact the norm is boundary differentiation, we can argue
that the corruption of academia due to industry infiltration is not happening as
initially thought, or at the very least, not across the entire academic field. Future
studies should investigate where in the academic field differentiation, integration or
invasion takes place in industry-academia linkages. To determine this, it is necessary

to conduct studies in various academic contexts—across "tribes" (Becher, 1989) and "habitus" (Bourdieu, 1993; Mendoza et al., 2012). To better understand disciplinary cultures and differences across fields and institutions, researchers might consider conducting joint research on industry-academia linkages with colleagues from other disciplines and institutions who are familiar with the specific characteristics of the contexts under study. Again, the tensions highlighted by Eddy (2010) in partnerships and collaborations and the six balancing dimensions in Mendoza et al. are helpful to understand the tug-of-war likely to occur at boundaries.

Mendoza and Berger (2005) applied the Blackburn and Lawrence (1995) framework of faculty productivity to faculty involvement in patenting. This application is helpful to understand the influences of the environment and context on faculty behavior with special attention to personal attributes and to explain the individual differences among faculty engaging with industry and technology transfer illustrated throughout this chapter. According to this model, faculty behavior is influenced by: (1) socio-demographic characteristics (gender, race, ethnicity, nationality); (2) self-knowledge (self-image, self-efficacy, personal attributes, skills, internal needs, values, dispositions); (3) career (socialization, science and technology capital, social capital, culture from the academic discipline and type of institution, positions held, experience, past accomplishments); and (4) social knowledge (how faculty perceive their work environment including understanding of others' expectations, views, values). In addition, faculty behavior responds to environmental conditions (geographical proximity, economic trends) and responses (academic capitalism, linkages with industry, availability of research funds, cultures, IP policies) and social contingencies. Bradley, Hayter, and Link (2013) criticize the traditional model of university technology transfer used in most previous work, which is based on the following linear steps: scientists discloses the invention to the TTO; the TTO determines if the invention is worth patenting and then proceeds with the patent application; if the patent is granted, the TTO markets the new patent among potential buyers and negotiates a contract if a buyer is found; and finally the buying company uses the technology and takes it to the marketplace. Bradley, Hayter and Link contend that this model oversimplifies the technology transfer process by using a one-size-fits-all model ignoring disciplinary differences, cultures, rewards systems, and informal interactions between industry representatives and academics. This model also places too much emphasis on patenting despite other forms of technology transfer. In fact, most past research has focused on patenting activity, although technology transfer occurs through a variety of other channels such as faculty involved in consulting and informal collaborations (Geuna & Mowery, 2007) and by student and alumni entrepreneurship (Åstebro et al., 2012; Mars et al., 2008). In particular, the role of students and the impact on students in industry-academia linkages is still an area in need of more research. The idea of social entrepreneurship is also intriguing and under-studied as a mechanism by which academia contributes to society. Therefore, in order to truly assess the role of universities in R&D through technology transfer, we need more studies looking at the range of possibilities by which knowledge and technology are used in society. Also, Campbell, Powers,

Blumenthal and Biles (2004) call for the need to create reliable and standardized datasets to systematically evaluate the performance of technology transfer.

More research is needed in understanding the cultural influences in technology transfer (Larsen, 2011) not only across fields and within fields but also within institutions. For example, Mendoza (2012) reports conflicts between university administrators and faculty within institutions around intellectual property policies and technology transfer offices. Normally, university officials aggressively seek monetary gains from faculty research clashing with faculty intrinsic incentives and motivations for research, and even frustrating collaborations and partnerships with industry. Recently, the University of Missouri announced a radical change in the University IP policy in response to these tensions, in which faculty in this institution can choose if the entire IP in a contract goes to the sponsoring company or to the University of Missouri (Jost, 2014). This presents a unique opportunity to investigate in the years to come if such a progressive change would result in more linkages with industry as well as the associated impact on technology transfer.

Finally, inquiry in the future should pay more attention to the roles and perspectives of funding agents including sponsor companies and government agencies and programs fostering linkages between industry and academia. For example, some of the questions include how are research agendas prioritized and awardees selected from the perspective of industry representatives and government officials. Understanding the logic and values used by those who fund research it is possible to better understand the context surrounding academia and the strategies of those affected by such an environment including faculty, students, and university administrators.

Conclusion

Based on values of equality, service, truth, justice, community, academic freedom, and autonomy, Kezar (2004) argues that the public expects universities to educate the public for democratic and diverse civic engagement; develop talent and leaders; support communities; preserve, develop and disseminate knowledge according to societal needs; work in concert with other organizations; and develop the arts and humanities. However, since the 1990s, there is growing concern that higher education is failing to fulfill its public mission (Kezar et al., 2005; Newman et al., 2004; Tierney, 2006). This chapter presented an overview of previous research in the last decade around industry-academia linkages and the nuances that could potentially influence the public good of higher education.

This chapter started with the historical developments leading to the knowledge economy as the basis of industry-academia linkages and the emergence of market-driven responses around knowledge production in academia. It overviewed various conceptualizations of knowledge production such as Stokes' classification of science (1997), Models 1 and 2 of knowledge production (Gibbons et al., 1994), the triple helix (Etzkowitz, 1998), network theory (Youtie & Shapira, 2008), boundary

theory (Etzkowitz, 2003; Murray, 2010), and academic capitalism (Slaughter & Rhoades, 2004). Then, this chapter reviewed in detail previous studies on industry-academia linkages with attention to seven broad areas of research: Benefits of industry-academia linkages; Mertonian versus Business Values; Academic Freedom; Basic versus Applied Research; Dissemination of Knowledge vs Patenting; Technology Transfer Offices and Intellectual Property Polices; and Impact on Students. Based on the knowledge gained from these studies, this chapter presented a critical discussion on the overgeneralized discourse in the literature that masks the significant influence of contextual differences within disciplinary hierarchies and across disciplines. Based on this critical look, this chapter ended by outlining theoretical concepts and areas of inquiry for future investigations.

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Chapter 12
Serving a Different Master: Assessing College Educational Quality for the Public

Corbin M. Campbell

Consider the following institutions: Columbia University, Vassar College, Rutgers University, and City University of New York (CUNY) Lehman College. *What do you know about the quality of the educational experience in these four institutions?* When considering this question, perhaps you might think about what you have heard about these institutions from friends or the media. Reputation/prestige is one of the most widely used criteria for judging the quality of colleges and universities. Then you might consider available data, easily accessed via the internet. For example, you might turn to corporate websites, like US News and World Report's "Best Colleges," ranking (henceforth, US News) or you could also look at the federal government's "College Scorecard," but neither of these includes data on teaching, learning, and educational practices. There are arguably no publicly available data to answer the question about the quality of the *education* in these four institutions—or the quality of a college degree, nationally.

By contrast, if you asked an administrator or a faculty member from the institution, they might describe many sources of data on educational quality driven by accreditation and accountability. They might tell you about the considerable resources and time devoted to collecting and reporting data. *What is the disconnect between the dearth of data on college educational quality in the eyes of the public and the considerable amount of data collected within institutions? What data do the public currently see and what data do they need? How are the institutional data being used, if not for the public?*

While the assessment and accountability movements have been front and center for higher education institutions since the 1980s, public understanding of higher

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education institutions has remained stagnant and ill-informed. Dubiously termed the "black box" of higher education—policy-makers and the public media have continued to asked questions about the quality of colleges and universities (at the national, system level): *what (and how much) are students actually learning at college?* They also ask this same question with regard to individual colleges and universities. In this chapter, I illustrate that the assessment movement has responded to calls for accountability in ways that do not meet the public(s)' needs. By attempting to serve multiple masters (institutions, policy-makers, and the public), using limited conceptualizations of quality in higher education, and using singular and limited methods of measurement, the assessment movement has not met the underlying needs of the public and instead has created a substantial amount of data that does not illuminate "the black box."

Assessment, broadly defined, is "the act of making a judgment about something" (Merriam-Webster dictionary). Applied to a higher education context, assessment of colleges and universities requires the use of data to make a judgment about a specific aspect of colleges or universities that is valued (for example, quality, access, efficiency). While assessment has been an inherent part of higher education since its inception (e.g. grades assessed student's level of proficiency in a course content area), the assessment movement, described later in this chapter, has largely developed in response to calls for accountability by governments (state and federal) and accreditors. Accountability, broadly defined, is "an obligation or willingness to accept responsibility or to account for one's actions" (Merriam-Webster). Applied to a higher education context, Ewell (2009) describes that, "Accountability requires the entity held accountable [colleges and universities] to demonstrate, with evidence, conformity with an established standard of process or outcome" (p. 7). These definitions of accountability emphasize *standardization* (i.e. comparability), *transparency* (i.e. external audiences), and *evidence* (data). While the assessment movement has responded to these calls for accountability with *evidence* (data), the focus is on *individualization* and *internal or confidential audiences*. The paradox between the calls for accountability and the responses by institutions in the assessment movement has meant a considerable amount of data is collected and reported by institutions, but the public is left in the dark about the educational process in higher education. Calls for accountability will continue to escalate until this gap in data is filled.

In this chapter I contend that higher education scholars have an opportunity to shape the way this gap is filled, focusing on conceptual and methodological advances in measuring quality in higher education for the public. Based on experience with using, critiquing, and creating measures of educational quality as well as an exhaustive literature review of more than twenty higher education and related journals, the purpose of this chapter is to illuminate the current condition of the higher education assessment movement in new ways, paying attention to the presence and absence of certain audiences, methodologies, and theoretical and conceptual frameworks. As such, this chapter pursues the following questions: First, how is the assessment movement responding to calls for accountability for quality in higher education in the U.S.? Second, which data are seen and unseen by the

public? Third, what are the current conceptualizations and methods of assessing college educational quality? What are the consequences of these ways of measuring quality? Finally, what are the most critical future considerations for assessing college educational quality?

The Accountability and Assessment Paradox

The public discourse on higher education has been filled with explosive concerns about the high costs, limited learning gains, and quality of higher education in the United States today. According to NCES (2014), both the total price and the out-of-pocket net price for college have increased substantially in all sectors of higher education over the past decade (although the increase is highest in private, 4 year institutions). The *New York Times* reported that "the average borrower now graduates with more than $26,000 of debt. Loan default rates are rising, and only about half of those who start college graduate within 6 years" (Lewin, 2013). Outside of cost and graduation, the public media has questioned the rigor of a college education. Another *New York Times* article cited that "In just 10 days, academically deficient players could earn three credits and an easy "A" from Western Oklahoma State College for courses like 'Microcomputer Applications'" (opening folders in Windows) or 'Nutrition' (stating whether or not the students used vitamins)" (Carey, 2012). There have also been criticisms about the country's declining ability to compete internationally in higher education (OECD, 2013). The U.S. ranked 16th out of 36 countries in the proportion of people aged 25–36 who had attained tertiary education (Organization for Economic Co-operation and Development, 2012). Some might consider this time in history an "affront on higher education."

With increased costs, increased enrollments, and questions of quality (i.e. high investment and low trust), higher education is ripe for the creation of metrics and calls for data transparency (Espeland & Sauder, 2007). The public feels they do not know about the academic outcomes and the quality of the education in colleges and universities, so intense scrutiny has been placed on "the black box of higher education" (Bok, 2006; Dowd & Tong, 2007; Ewell, 2008). The *Wall Street Journal* criticized that "while 85 % of schools have some sort of learning assessment, less than 10 % make them publicly available. Even fewer are standardized, so they can't be used to compare one institution with another" (Belkin, 2014). In a New York Times op-ed, Carey (2012) describes the questions of quality in higher education and then states, "it reveals a more pervasive problem: there are no meaningful standards of academic quality in higher education" (Carey). Policy-makers have followed suit, with President Obama calling for institution-level data on affordability, access, and outcomes in a new Postsecondary Institution Rating System (PIRS), although the focus is heavily on affordability and less on educational quality.

Though the public and policy-makers have called for increased transparency and an answer to this "black box of higher education," paradoxically in higher education

there is an abundance of data collected under the umbrella of accountability efforts. For the purposes of accreditation and institutional improvement (driven largely by accreditation), administrators and faculty collect, produce, analyze, and report data about the quality of their institution and its effectiveness at pursuing educational goals (Dowd & Tong, 2007; Dwyer, Millett, & Payne, 2006; Ewell, 2008). Dozens of different measures of student learning and engagement have been developed and have grown in institutional participation, such as the Collegiate Assessment of Academic Proficiency (CAAP; developed by ACT), the Measure of Academic Proficiency and Progress (MAPP; developed by ETS), the Collegiate Learning Assessment (CLA, developed by the Council for Aid to Education), the National Survey of Student Engagement (NSSE), among others (Nusche, 2008). Some measures are direct tests of student knowledge and thinking (e.g., CLA, CAAP) while others seek to appraise the impact of college on learning via surveys asking participants about their learning outcomes (e.g. NSSE). Some are domain and field specific (e.g. Major Field Tests, developed by ETS), while others aim to capture broad measures of learning, such as critical thinking (e.g. CLA, MAAP).

Additionally, institutions create home grown measures of learning and engagement. Examples of institutional measures are course evaluations, course-based learning outcomes, and student surveys from institutional research and assessment offices (Cistone & Bashford, 2002). Kuh, Jankowski, Ikenberry, Kinzie, and National Institute for Learning Outcomes Assessment (2014) describe results of a cross sectional study by the National Institute for Learning Outcomes Assessment (NILOA). Surveying Chief Academic Officers of 725 institutions in 2009 and 2013, they found an increase in the proportion of institutions that had identified common learning outcomes for their undergraduate students, an increase in the methods of assessments used per institution, and an increase in both external and internal uses of the assessment data. The most frequently used method was national student surveys (such as the NSSE), but direct measures of learning (e.g. testing and rubrics) were rapidly becoming more frequently used. The bottom line of NILOA's study was *more*—more assessment is happening at more institutions with more methods and more uses. Shavelson and Huang (2003) describe a "frenzy" to assess learning outcomes.

As a result of this "frenzy," there has been an explosion of studies in higher education aimed at understanding, assessing, and critiquing the measurement of higher educational quality and related concepts, such as accountability, planning, and assessment. For example, the many efforts devoted to these concepts include entire journals (e.g. *Assessment and Evaluation in Higher Education*, *New Directions for Institutional Research*, *Assessment Update*, *Quality in Higher Education*, *Quality Assurance in Higher Education*), numerous volumes published (e.g. Bender & Schuh, 2002; Burke, Minassians, & Yang, 2002; Dwyer et al., 2006; Heller, 2008), countless policy briefs (e.g. Association of American Colleges & Universities, 2007; Business Higher Education Forum, 2004; Department of Education, 2006; Dougherty & Hong, 2005; Espinosa, Crandall, & Tukibayeva, 2014; National Center for Public Policy and Higher Education, 2008; National Commission on Accountability in Higher Education, 2005), and the work of centers, institutes,

and associations (e.g. Association for Institutional Research, National Institute for Learning Outcomes Assessment, Center of Inquiry in the Liberal Arts, Center for Measuring University Performance). The pure quantity of the literature and attention paid to assessment and accountability practices attests to its relevance in the higher education landscape.

While institutions, administrators, and higher education scholars have produced a great deal of assessment data about higher educational quality, these data do not match the needs of the public and policy makers. The accountability movement has focused on calls for transparency, comparability, and external audiences, while the assessment movement instead has focused on institutional individualization and internal or confidential audiences. Take for example, the accreditation process, which aims to be a public quality assurance mechanism and to provide "students and the public with general information about quality in higher education" (Council for Higher Education Accreditation, 2004, p. 2). According to the Council for Higher Education Accreditation (CHEA), they receive questions from the public about which skills and capacities an institution can help students to achieve. The public also requests information about strengths and weaknesses of an institution. In response, accreditors have asked institutions to focus on student learning outcome assessment as evidence of quality. Institutions collect and report a significant amount of data to accreditors toward demonstrating their assessment program. Yet, what the public sees at the end of this process is essentially "accredited" or "not-accredited" (with certain other probationary statuses) with very little information about quality. According to CHEA (2004), accreditation "calls for at least a modicum of discretion and a modest commitment to some privacy and confidentiality" (p. 2). Additionally, the student learning outcomes data collected by institutions are not comparable across institutions.

In sum, to respond to calls for comparable, transparent data on education quality, the assessment movement produces institution-centric data that is shared with accreditors, but not the public: therein lies the paradox. The disconnect between the public and policy arena's "black box" and the higher educators' flood of data is that extensive assessment data on college quality are largely unseen by the public. Borden and Young (2008) echo this concern in their review of the current uses and validity of assessment measures: "Notwithstanding the increasing availability and ease of use of such data, there has been notable disparagement regarding the availability of information to inform comparisons among higher education institutions for consumers, policymakers, and other stakeholders" (p. 19).

How Did the Paradox Develop?

The assessment movement for higher education in the United States has developed over time in a complex context. In particular, assessment of institutional effectiveness has been a focal point in the national higher education agenda in the past three decades (Ewell, 2008). While this chapter focuses heavily on the modern

assessment context and movement, this movement has been contextualized by centuries of emphasis on using mainly quantitative metrics to measure educational quality, and more broadly human performance.[1] Espeland and Sauder (2007) documented the calls for accountability, the quantitative nature of these methods, and the ultimate consequence being an "audit culture" that is pervasive in U.S. society in several fields (e.g. healthcare, K-12 education, law), and has settled into the accountability movement in higher education with the emphasis on numerical performance rankings and metrics. Perhaps the earliest form of accountability in higher education were the first regional accrediting agencies formed in the 1880s, and by the 1930s the accreditation movement became a mainstay in the higher education landscape (ACICS, 2013). In 1952, Congress tied federal funds to accreditation in the Veteran's Readjustment Act, which proved the federal government's interest in quality assurance of higher education (New America Foundation, 2013). Accountability for higher education continued to gain attention in the 1960s and 1970s with a new focus on program evaluation, rising from the evaluation and scientific management movement (Ewell, 2002).

The latter half of the twentieth century proved to be the perfect storm for accountability in higher education: a growth in federal interest, substantial rising costs, the unbridled critique of K-12 education, growing questions about the current measures of higher education quality, and the mainstreamed scientific management movement. Institutions have enjoyed a significant amount of autonomy in higher education (Alexander, 2000), particularly with regard to transparency about educational quality due to the "trust market." Winston (1992) describes that, "Markets with asymmetric information can usefully be called 'trust markets'" (p. 22). Higher education is a trust market because "consumers" (students) know less about the "product" (higher education) than the institutions themselves. The students trust that they are receiving a quality education because of reputation of higher education institutions without sound knowledge of their educational outcomes or transformational capacity. This autonomy and the "trust market" have meant that institutions did not need to produce assessments to prove educational quality to the public. Unfortunately, as the economic principle of asymmetric markets explains, when the "seller" (in this case institutions) maximizes their self-interest to a great extent (either lowers quality or increases cost too much), trust fails, the consumer starts asking questions, and the institutions must then provide evidence. In the case of higher education today, rising costs and consumerism (Espinosa et al., 2014; Rhoades & Slaughter, 2004) have raised public questions about the quality of higher education, no longer trusting, and instead wanting to see inside the "black box" (Bok, 2006; Carey, 2012).

The outgrowth of these trends was the birth of the assessment movement in 1985 (Ewell, 2008). At this time, regional accreditors, states, and certain institutions had staked a claim on demonstrating student learning as a part of accountability. The

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[1] I refer readers to Ewell (2002, 2008) and Burke (2005) for a thorough description of the historical context of the accountability and assessment movements.

federal government showed initial interest in this topic with the 1992 reauthorization of the Higher Education Act (HEA), "demanding evidence of student academic achievement" (Ewell, p. 9) as a part of the accreditation process. Simultaneously, the Total Quality Management (TQM) movement emerged from business and was being applied to higher education. By the mid-1990s, the assessment movement was a key facet of the accountability movement and a mainstay in the higher education institutional landscape and state and federal policy stream. *The assessment movement was created to respond to calls for accountability for quality in higher education*—rather than for formative assessment for institutional improvement purposes (Ewell, 2002, 2008).

Perhaps the pinnacle of demonstrating the relationship between accountability and the assessment movement was the Spellings commission in 2005. In the wake of the mounting pressures for higher education accountability and the high stakes testing movement from K-12's No Child Left Behind (NCLB), Margaret Spellings, the Secretary of Education under President George W. Bush, formed the Commission on the Future of Higher Education. The accountability portion of the Spellings Commission report called for more transparency in the cost of higher education institutions and the assessment of student success outcomes and learning or the 'value added,' and broadly called for a transition of authority from institution-centric to the federal government (DOE, 2005). According to the report, "Despite increased attention to student learning results by colleges and universities and accreditation agencies, parents and students have no solid evidence, comparable across institutions, of how much students learn in colleges or whether they learn more at one college than another" (p. 14). The major provisions of the commission's report on accountability include a recommendation to create a centralized database on institutions of higher education, for the National Center for Education Statistics (NCES) to create "consumer-friendly" annual public reports on college revenue and expenditures, and for institutions to measure and report meaningful student learning outcomes (DOE, 2006). Again, *the accountability call* is for transparent, comparable data on education quality for the public.

Then *the response*: institutions of higher education became increasingly concerned about the possibility of a centralized higher education mandate. They galvanized and responded based on several concerns about public measures of educational quality. They were concerned that standardization was not possible across higher education institutions due to their significant diversity of missions, student populations, resources, and educational purposes—not to mention within institution diversity of students, faculty, and disciplines. They cited the tension between unification of American higher education and the need for individualization across diverse institutions and students. Scholars of higher education largely echo these concerns stating that designing measurements that are valid across institutions is highly complex and some may say impossible (Espeland & Sauder, 2007; Ewell, 2002) due to the diversity of institutions in the U.S. Academics and institutions alike have also expressed concern in prescribing one definition of quality—when, in fact, quality is a relative term. Different stakeholders in higher education may conceptualize quality differently (Morrison, Rudd, Zumeta, & Nerad, 2011).

Due to significant backlash from institutions, the Spellings Commissions Report documented language and emphasis rather than a mandate (DOE, 2006). Even still, the fear for a "No College Left Behind" was felt throughout the higher education system, and institutions (and systems of institutions) scrambled to respond. However, instead of producing transparent, comparable data for the public, institutions produced *voluntary* measures of a variety of outcomes (e.g. the Voluntary System of Accountability (VSA); Keller & Hammang, 2008); that would ward off a future federal mandate. Most institutions did not report the *voluntary* learning outcomes assessment measures as part of the VSA. Spellings asked for apples, and she got oranges—from some institutions, on a voluntary basis.

It is not surprising that there were more calls for apples in the future. More recently, Obama has suggested an escalation of the federal oversight of higher education, proposing the Postsecondary Institutional Rating System (PIRS), a three-pronged rating system of colleges that focuses on affordability, access, and outcomes (Espinosa et al., 2014). According to an American Council on Education (ACE) report on the proposed PIRS, "The truth is that higher education has a love-hate relationship with college and university rankings . . . rankings are coveted by the vast majority of institutions, and are known to drive institutional behavior, with a number of unintended consequences" (Espinosa et al., p. 6). Concerns about the unintended consequences of the PIRS system include poor data availability, the inadequacy of comparison groups, the inability to control for student incoming characteristics, and the formulation of the ratings, as well as who will use the rating system (e.g. public or government) and how (e.g., tied to funding incentive structures).

What is clear from the examination of the history of accountability and assessment in higher education is that while several scholars believed the assessment and outcomes movement would be fleeting, it has perpetuated (Burke, 2005; Ewell, 2008). Several current tensions in assessment are drawn from the broad historical context of the accountability movement: (1) the tension between assessment for continuous improvement versus accountability and transparency; (2) what Ewell (2002) describes as the "ineffability debate . . . the extent to which educational outcomes can be measured at all" (Ewell, p. 17); and (3) the tension between institutional autonomy and external accountability (Alexander, 2000; Burke, 2005). These three tensions set the stage for the paradox where the public and policy-makers call for transparent, comparable data and institutions respond with individualized, internal data.

A Closer Look at the Flood of Assessment Data

Now, I turn to the assessment movement and examine the products of this movement. If the assessment movement has not answered the questions that arise in the accountability movement, what does it capture and what are its effects? Keeping in mind that the assessment movement has largely been instigated by

accountability calls for standardization, comparability, and transparency, what has framed the response of the assessment movement? The assessment movement is grounded in ideas such as "continuous improvement" (Blaich & Wise, 2010; Cistone & Bashford, 2002; Ewell, 2008) and "cultures of evidence" (Dwyer et al., 2006; Millett, Payne, Dwyer, Stickler, & Alexiou, 2008; Millett, Stickler, Payne, & Dwyer, 2007). By contrast with the "accountability paradigm" (Ewell), the "improvement paradigm" is based on the view that measures of educational quality are for refining and improving educational practices rather than for transparency. According to Dowd and Tong (2007), the improvement paradigm within academia includes values such as "mission differentiation, a focus on process improvement rather than comparative outcome standards, and confidentiality of results for internal review" (p. 62). Many institutions and accreditors believe that if institutions can prove that they are measuring educational quality and trying to improve based on those data, this will satisfice for the accountability needs. In other words, the very fact that data on educational quality are collected and considered in an institution shows that the institution cares about and monitors quality. The assessment movement has used this paradigm to relieve the need to provide transparent data on college quality.

While the continuous improvement paradigm has not adequately responded to accountability calls, it has articulated a process for using data to improve educational practice. Much has been written about what makes an effective assessment process for continuous improvement, mainly from anecdotal evidence of assessment experts working with institutions (Blaich & Wise, 2010; Cistone & Bashford, 2002; Dowd & Tong, 2007; Millett et al., 2008; Welsh & Metcalf, 2003). The ideal process for continuous improvement, in its broadest form, begins with setting institutional goals (e.g. student learning outcomes), then gathering evidence related to institutional goals, and finally using this evidence to make changes in the educational practices.

In an improvement process, setting institutional goals will be strategic (tied to planning and use for the data; Middaugh, 2009) and specific to the individual institution (considering e.g., mission, setting, students) (Dowd & Tong, 2007; Millett et al., 2008). Additionally, the goals should focus on a limited number of outcomes that are widely communicated throughout the institution and are connected to curricular and co-curricular goals and practices (Blaich & Wise, 2010; New Leadership Alliance for Student Learning and Accountability, 2012). Once goals are determined, then institutions should conduct a data audit—determining which related data are already available at the institution (Blaich & Wise, 2010; Millett et al., 2008)—and then select additional measures to collect data that are missing. Data collection should be ongoing, consistent over time, and integrated into the work of faculty and administrators (Cistone & Bashford, 2002; NLASLA, 2012). Experts recommend investigating the validity and reliability of instruments[2] (Cistone & Bashford, 2002; Millett et al., 2007) and using multiple instruments to assess each goal (Ewell, 2008). After selecting appropriate measures and collecting

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[2]For a review of validity and reliability for assessment measures, see AERA, APA, & NCME, 1999; Borden & Young, 2008; Porter, 2011.

data, those data must be used to inform improvement of educational practices. Assessment experts attest that buy-in and collective responsibility for the assessment process are particularly important for the use of assessment data (Cistone & Bashford, 2002; Dowd & Tong, 2007; Ewell, 2008; Middaugh, 2009; Welsh & Metacalf, 2003). Blaich and Wise describe this as a "campaign" of conversations to communicate results to multiple constituencies, "not a series of reports posted on a website" (Blaich & Wise, p. 14). Outside of buy-in, institutions must devote resources to change efforts based on the assessment data (Blaich & Wise, 2010; Middaugh, 2009). Additionally, there should be an established process for how to change the evidence into action, such as feedback loops (specified in advance) to internal channels (Ewell, 2008; NLASLA, 2012).

Perhaps one of the earliest and most comprehensive examples of using assessment for institutional improvement of learning is Alverno College that has a campus culture that centers on using learning outcomes data to transform educational practices. Alverno has an ability-based curriculum, assesses student growth in several competency areas with several different measures, and then ties the learning to specific educational practices (Mentkowski & Associates, 2000). Faculty, administrators, and students each play a role in the collection and use of the assessment data, and assessment is part of the institutional identity.

Unfortunately, the assessment process in most institutions is not the well-oiled machine that can be seen in Alverno College. Recently, a study by the National Institute on Learning Outcomes Assessment (Kuh et al., 2014) found that the use of learning outcomes assessment (both in quantity and type of assessment) has grown dramatically in recent years, but there are questions about how effectively these outcomes data are being used for institutional improvement. The NILOA study found that, the assessment data were being used more in 2013 than in 2009 for both external (accreditation, reporting) and internal (e.g. program review, institutional improvement, policy development, resource allocation) purposes. Yet, learning outcomes data were still used more for external than internal purposes. Blaich and Wise (2010) described higher education assessment practices using Brown and Duguid's (2000) conception of "learning about" and "learning how." "Learning about" is collecting data to obtain knowledge about learning and effective practices. "Learning how" is using those data to improve practices. Blaich and Wise found that many institutions have plentiful data to tell them "about" student learning and effective practices on their campuses. Now, the challenge for improvement purposes is to translate data into action—to "learn how" to apply the data to improve practice. There are several challenges to using data for improvement efforts, including lack of buy-in from faculty and other campus constituents (Blaich & Wise, 2010; Cistone & Bashford, 2002), lack of collective responsibility (Dowd & Tong, 2007; Welsh & Metacalf, 2003), lack of resources (time and money) to spend on improvement efforts (Middaugh, 2009), and disagreement with the outcomes measurements (Welsh & Metacalf, 2003). Unfortunately, many institutions think about "assessment as a process that begins with data-gathering and ends with a report" (Blaich & Wise, p. 14).

These challenges are, perhaps, not surprising considering that the assessment movement was not authentically internally driven or proactive for improvement, but instead reactive to the external accountability calls. The effective processes for improvement require an intrinsic commitment to and belief in assessment for improvement. For example, Blaich and Wise (2010) discuss how to use assessment data effectively to improve student learning with several steps to engage in evidence based reform. Based on the Wabash Study of National Liberal Arts Education (WSNLAE), a large longitudinal study and assessment project, Blaich and Wise found that assessment data can improve educational practices through building campus support, connecting data to questions on campus (i.e. mapping instruments onto questions that faculty and staff have about their students), and adopting structures and allocating resources to move from evidence to action. Each of these recommendations requires the campus to see assessment as part of its mission. In another example, Welsh and Metcalf (2003) surveyed 680 faculty and administrators at 168 institutions (55 % response rate) reviewed by the Southern Association of Colleges and Schools (SACS) and found that faculty were more likely to support assessment efforts if the assessment was internally motivated, if they were personally involved in the process, and if the assessment was of outcomes rather than inputs and resources.

The conditions for a successful assessment process are antithetical to an externally imposed accountability movement. If the assessment movement (for improvement) was birthed out of the calls for accountability and the assessment data are to be used as evidence for accreditation and accountability purposes *and* for improvement, is it possible to have an effective internal improvement process? In essence, the public and policy-makers' call for one form of data (comparable, transparent, simple), has birthed a qualitatively different movement: the institutional "culture of evidence" (Dwyer et al., 2006). Because of the clash of values and needs for these two different kinds of data (Dowd & Tong, 2007), the assessment movement has, perhaps, largely missed the boat in both satisfying public/policy needs as well as the use of data for educational improvement.

Which Data Reach the Public Eye?

In this section, I will zero in on specific measures of educational quality to illustrate, specifically, how the paradox manifests in the data that are seen and unseen by the public. The assessment movement has given rise to an abundance of tools to understand and evaluate educational quality. As such, there are multiple ways to categorize and analyze the various measures of educational quality in higher education. These assessments serve many different purposes with several different audiences, and use different theoretical frameworks, methods, and measures (Harvey, 2002). For example Burke (2005) describes the "who" "whom" and "whose" of accountability as the agent, principal, and beneficiary, citing that in higher education it is particularly difficult to delineate who are the agents and who are

the beneficiaries—society? government (democracy)? the states? the institutions themselves? the students? Harvey (2002) also describes the who, what, how, and why of quality evaluation. Following these categorizations, I will first describe the "who" and "what" of quality measures in higher education. Here I describe several examples of measures of higher education quality at the institution-level, in terms of who developed the assessment, the audience for the assessment, and the approach of the assessment. Second, I will turn to the "how" of these measures, describing and analyzing their theoretical and methodological underpinnings.

The "Who and What" of Higher Educational Quality Assessments

Who Created the Assessment?

One way to consider the measures of educational quality is by who or what agency drives and creates the assessment (i.e. the "assessor") to gain an understanding of the motive for the assessment as well as the resources available. Harvey (2002) classifies external evaluators (who) by: (1) whether the monitoring agency was established by legislation; (2) whether it was created within or outside the higher education sector; and (3) the degree of independence from the creator or funder. Harvey's categorizations are particularly useful to consider institution-governmental relations with regard to educational quality assessment. However, to highlight the nature of educational quality assessments for the *public*, I consider the resources, power, and purpose of each assessor. There are several forms of resources that are important in the effectiveness of an assessment of educational quality for the public. Different assessors will have different levels of funding, understanding of relevant theory, autonomy, methodological resources, political resources, institutional resources, human resources, and temporal resources for developing, testing, and disseminating an assessment.

Let us first consider assessors internal to the academy. For example, disciplinary accreditation bodies likely have a narrow focus on educational quality in one discipline, and may want to know about the status of education in that particular discipline both across the nation and within programs. Depending on grant possibilities within the discipline, these accreditors may not have strong fiscal resources to conduct the assessments, but the intellectual and theoretical resources for understanding educational quality may be rich. For example, the American Psychological Association accredits institutions in order to create standards for psychology programs nationally. They have extensive expertise in understanding psychology and best practices in psychology education (theoretically rich), but perhaps fewer institutional resources (meaning, they focus on psychology at the level of national/program standards rather than situated in institutional contexts). By contrast, institutional assessors are likely to focus within the institution, highlighting

the best aspects of an institution (externally) or targeting specific institutional data needs (confidentially) for improvement. For example, the University of Maryland may want to assess and improve the level of academic rigor (internally) or highlight their high levels of engagement for diverse students (externally). Institutional assessments may be rich in terms of creating buy-in across campus, but perhaps constrained by financial and political resources.

Governmental assessors likely have a focus on fiscal/affordability concerns, transparency, and summative comparison across institutions with a responsibility to the public (in terms of higher education for the public but also being prudent with fiscal resources). While a government assessment may be rich in political, methodological, and financial resources, it may be limited in temporal resources and autonomy—creating new federal data mechanisms requires perhaps years of bureaucratic processes. A good example of this temporal constriction is the PIRS. Obama proposed that the rating system will be in place by 2016. Creating new data elements or mechanisms federally is likely not possible by that time, so the PIRS metrics are, at least initially, limited to what is currently available from the National Center for Education Statistics (NCES). By contrast, measures of educational quality driven by private corporations, such as the US News and World Report Rankings, may have vast financial, temporal, and human resources, but less nuanced and theoretically driven understanding of educational quality (i.e. motivated by what will sell rather than what matters educationally). I provide a breakdown of examples of educational quality assessments by five categories of assessors and subsequent resources presented in Table 12.1.

Who Is the Audience of the Assessment?

A majority of assessments are used to serve multiple audiences at once. For example, regional accreditation serves as a quality assurance for the public and is also tied to government funding and institutional improvement (Middaugh, 2009). The largest audience for learning outcomes assessment data is accreditors rather than institutions themselves (Kuh et al., 2014), demonstrating, once again, that the assessment movement claims to be focused on improvement, but instead is responsive to calls for accountability. Other assessments state that they aim to inform and improve educational practices, but are often primarily used to satisfy accreditors, such as the NSSE or the Wabash Study of National Liberal Arts Education (WSNLAE; Blaich & Wise, 2010; Ewell, 2008; National Survey of Student Engagement, 2013).

Different audiences may have different assumptions, expectations, and ways of defining educational quality. Keller and Hammang (2008) describe three goals for the VSA, corresponding to three intended audiences: "The goals of the VSA are threefold: Demonstrate greater accountability and stewardship to the public [policy-makers]; Enhance effective educational practices by measuring educational outcomes [institutions]; Assemble information that is transparent, comparable, and

Table 12.1 Measures of educational quality categorized by the assessor

Assessor	Examples	Purposes (examples)	Resources (ample)	Resources (constrained)
Federal government	National Center for Education Statistics; College Scorecard; PIRS	Transparency, Fiscal accountability, Policy-making; National landscape of higher education	Financial, methodological, political, human	Theoretical, institutional, temporal, autonomy
State and local government	Maryland Higher Education Commission (MHEC); Alabama Commission on Higher Education (ACHE)	Funding structures, comparing across institutions; determining regional and state benefits accrued from higher education	Political, resources vary by state	Theoretical, autonomy, resources vary by state
Regional accreditation bodies	Middle States Association of Colleges and Schools; Western Association of Schools and Colleges	Quality assurance to government and public within a historical understanding of institutional autonomy	Methodological, political, institutional, human	Autonomy, temporal
Disciplinary associations and accreditation bodies	American Psychological Association (APA) Commission on Accreditation; National Council for Accreditation of Teacher Education (NCATE)	Assuring quality of academic programs and degrees; Understanding and furthering a discipline or field nationally	Theoretical, methodological, institutional, resources vary by discipline	Resources vary by discipline
Private corporations	USNews, Princeton Review. Washington Monthly, Forbes	Profit, marketing, informing public	Financial, autonomy, human, temporal	Theoretical, methodological, institutional
Non-profit corporations/Foundations	Council for Aid to Education (Collegiate Learning Assessment)[a] (Carnegie Foundation[a]; The Carnegie Classifications; National Council on Teacher Quality	Providing and funding data to help improve and benchmark educational quality	Resources vary by foundation	Resources vary by foundation

Consortiums of Institutions	The Center for Measuring University Performance; Student Experience in the Research University (SERU); Higher Education Data Sharing Consortium	Benchmarking across institutions; satisfying boards and accreditors	Theoretical, methodological, institutional, temporal	Financial, political, human
Institutions	Institutional Research Offices; Offices of Assessment	Formative assessment; benchmarking across time; improving practice; benchmarking across schools within an institution	Methodological, institutional, temporal, resources vary by institution	Financial, political, human, resources vary by institution
Scholars of Higher Education	National Survey of Student Engagement; Wabash National Study of Liberal Arts Education	Using higher education theory to provide data on the educational experience in colleges and universities	Theoretical, methodological, institutional, temporal, autonomy	Financial, political, human

[a]While Carnegie Classifications were initially created to categorize rather than assess quality, these classifications have subsequently been used as a tiered system with very high research institutions seen as highest quality (See, for example, Morphew & Baker, 2004; O'Meara, 2007)

understandable; for students and their families as they compare college options [public]" (p. 40). According to Keller and Hammang, institutions did not readily buy-in to transparency of student outcomes data, yet this was also one section that received a great deal of interest from policy-makers. Similarly, based on descriptive experiences of 30 institutions across institutional types (e.g. community colleges, research universities), Cistone and Bashford (2002) described the tension across the needs of multiple audiences in using assessment for institutional planning. They found that institutions do not want to document program shortcomings, only positive results to external stakeholders, while external stakeholders (policy-makers and public) need to see both strengths and weaknesses of institutions.

While many assessments attempt to serve multiple audiences, those that have the public(s) as the primary audience are mainly limited to corporate rankings and federal data. The rankings and federal assessment data mainly focus on resources and reputation rather than teaching and learning. Current public measures of educational quality in the U.S. (both at the institutional and national level) focus mainly on inputs, outputs, finances, and reputation. Take for example, the Center for Measuring University Performance, which rates institutions and publicly reports data on research expenditures, alumni giving, SAT scores, and faculty accolades (such as National Academy Members and numbers of awards). In another prominent example, US News Rankings use the following criteria to determine which college is the "best": graduation and retention rates, financial resources, alumni giving, peer ratings, student selectivity, and faculty resources (such as salary, % with terminal degrees, class size, and student/faculty ratio; US News, 2013).[3] Few of these cross-institutional measures look at educational quality in terms of the academic rigor of what is learned by the student and/or what the institution does to influence the learning and development of the student (e.g., teaching quality, educational experiences). Table 12.2 provides a description of educational quality measures defined by primary audience.

What Is the Approach of the Assessment?

Educational assessments can be categorized by approach (Volkwein, 2011). Assessments may examine the resources that enter an institution or "inputs," (e.g. student and faculty credentials, fiscal resources; Zhang & Thomas, 2006). Alternatively, assessments can focus on the educational process (e.g. programs offered, academic rigor). Yet, still others focus on what comes out of higher education in either the form of outputs (number of degrees awarded, faculty publications numbers, research expenditures) or outcomes (e.g. student learning, economic development; Middaugh, 2009; Rhodes, 2012). Historically, assessments of educational quality

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[3]The consequences of rankings are discussed later in the chapter, under "Theoretical Frameworks and Conceptions of Educational Quality".

Table 12.2 Measures of educational quality categorized by audience

Primary audience	Examples	Purpose
Prospective students & families/public	US News Rankings; Princeton Review; Atlantic Monthly; NCES "College Navigator"; VSA's "College Portrait"	Providing comparative information across institutions about institutional quality; providing information about college fit for individual students
Policy-makers	Integrated Postsecondary Education Data System (IPEDS) and National Center for Education Statistics (NCES) surveys (e.g. Baccalaureate & Beyond); VSA;	Understanding the national span of higher education, benefits of higher education, affordability, and educational experiences
Institutions and accreditors	National Survey of Student Engagement; home-grown assessments	Helping institutions to benchmark, improve, and document their educational quality for accreditors

for the public have largely focused on inputs, such as SAT scores, fiscal resources, and reputation. This is particularly true of rankings systems (O'Meara, 2007), performance indicators, or other benchmarking processes. Burke et al., (2002) states: "The notion of quality as based on inputs of students, funding, and faculty–rather than assessment of undergraduate learning–persists in performance reporting" (p. 24). This approach has been largely criticized as perpetuating privilege and not focusing on transformative educational capacity. Bensimon (2007) described this critique in her presidential address to the Association for the Study of Higher Education (ASHE):

> In the scholarship on student success in higher education, faculty members, counselors, deans, and other staff members are relatively negligible. Instead, a voluminous literature correlates postsecondary education success with students' characteristics before they entered college and their self-reported experiences, behaviors, and accomplishments during the college years (p. 445).

More recently, the policy landscape and the assessment movement has shifted to focus on outcomes instead of inputs (Carini, Kuh, & Klein, 2006; Kuh et al., 2014) in the hopes of gauging the quality of the education that institutions provide rather than their prestige. There is also initial evidence that using an outcomes driven assessment bolsters buy-in from faculty (Welsh & Metacalf, 2003). With this shift, standardized learning outcomes assessment instruments (e.g. CLA, CAAP) and self-reported learning outcomes instruments (e.g. NSSE) became prominent.

While this shift seems promising in comparison to input-based methods, there are still concerns with outcome-driven assessments of educational quality. Borden and Young (2008) articulate the necessary, if problematic, assumptions needed to evaluate higher education institutions according to the learning outcomes of

their students: "Consider the series of inferences that need to be made to relate student knowledge, skills, and abilities to institutional effectiveness. To do so, we need to establish a link between what students know and what they have learned and then between what they have learned and what they have experienced at the institution" (p. 27). Hamilton, Johnson, and Poudrier (2010) described the use of dissertations to demonstrate program effectiveness via rubrics measuring levels of student achievement. They then documented problems with using student work (i.e. dissertations and theses) as evidence of program effectiveness: (1) *post hoc ergo propter hoc* error (b follows A, so A causes b); (2) inability to control for inputs; (3) inability to discern broader important learning outcomes (e.g., interpersonal outcomes); and (4) inability to account for drop outs (theses and dissertations or "post" work samples are only completed by those who made it to the end of their program). While this was a study of learning outcomes as an assessment of graduate program quality, many of these same concerns have been echoed in the assessment of undergraduate educational quality. Almost no assessments have a non-college control group. Even with controlling for inputs, the problem exists that development over time may occur even without program intervention—meaning it may be simply time rather than the program causing learning (Hamilton et al., 2010; Pascarella, Blaich, Martin, & Hanson, 2011). Methodological concerns with measuring learning outcomes will be discussed later in this chapter. Assessments categorized by approach are described in Table 12.3.

Table 12.3 Measures of educational quality categorized by approach (Volkwein, 2011)

Approach	Examples of metrics	Examples of assessments	Purpose
Inputs	Student credentials, faculty credentials, resources, tuition (e.g. state performance metrics)	US News Rankings, Performance Indicators	Track quality via what resources enter an institution
Process	Educational experiences; programs offered, teaching loads, class size, facilities, curriculum, student support services, teaching quality, TQM, time to degree	NSSE	Track quality via the educational experience of the institution
Outputs	Number of degrees awarded, graduation rates, faculty publication numbers, research grants	Student Achievement Measure (SAM)	Track quality via what leaves the institution (regardless of how it came in)
Outcomes	Measures of student learning, student development, gains in competencies, research impact, economic development	CLA, CAAP, MAPP	Track quality via the change from entering to leaving college

Making Meaning of the "Who and What" of Higher Education Assessments

The categorizations presented here aim to create a nuanced understanding of the plethora of educational quality assessment mechanisms in place in higher education today with a focus on the contrast between public data and data for institutions and accreditors. By considering the various measures in this way, several central issues come to the forefront. For example, when considering who or what entity is conducting the assessment, it is clear that certain assessors have more resources and/or power, and thus a greater ability to influence the landscape of higher education in different ways. Certain assessors are rich with theory and intellectual capacity, while others have more funding, and yet others have more or less political influence. Additionally, each audience has specific and often conflicting needs. Burke et al., (2002) argue that the government sees the different purposes as complimentary, but institutions see them as incompatible and even conflicting.

When we consider all of these categorizations in totality, the tension between the "black-box" of higher education (as seen by the public) and the flood of data (as experienced by institutions) is clear. Considering the intended primary audience for each assessment, we see that certain audiences only see certain kinds of data. The public sees mainly corporate-driven measures of quality (e.g. U S News). Almost all of the data they see lacks the ability to describe teaching quality, academic rigor, learning, and educational experiences—i.e., the educational core of colleges and universities. Institutions use assessment data for both accreditation and improvement purposes (but mainly the former). Assessment data are driven largely by institution-centric measures (such as institutional research data) and are often home-grown or data from non-profit educationally centered organizations or higher education scholars (e.g. the CLA, NSSE). These data largely focus on the educational experiences, process, and student learning outcomes—but are kept confidential by accreditors and do not reach the public eye. Institutions also use consortium benchmarking data (such as the SERU/HEDS), largely focused on resources (e.g. faculty salaries, research expenditures) and selectivity (SAT score), in order to increase (or market) prestige. In addition to the internal data that institutions use, they are also required to collect and report the data for all of the other mechanisms of assessment (e.g. IPEDS, US News). That is, while the audience for US News and IPEDS is mainly the public or policy-makers, institutions see and actively participate in those assessment methods as well as the internal ones creating a perception by institutions that they are collecting, charting, and reporting a "flood" of assessment data.

Another trend that emerges is that several assessment measures intend to serve multiple audiences or have switched audiences and aims over time. For example, certain institutional benchmarks from the National Survey of Student Engagement are now accessible to the public (via *USA Today* and the College Portrait), when they were originally intended for institutional use. Similarly, the CLA has been used summatively to evaluate the rigor of higher education nationally (Arum &

Roksa, 2011), on the institution-level to benchmark in the VSA, and now offers "digital badges" for students that perform well on their tests to show to potential employers (Collegiate Learning Assessment, 2013). The new uses of NSSE and the CLA provide a public window into the educational process and outcomes of institutions. They also focus on the educational process and on student educational experiences and are driven by higher education scholars and non-profit educational organizations. By contrast, a majority of publicly consumed data (such as US News) is driven by corporate interests, is not theoretically derived, and focuses mainly on inputs, resources, and reputations. Similarly, the accreditation process, originally created as a quality check for the public and government now feels dual responsibility to institutions (CHEA, 2004). According to Cistone and Bashford (2002), institutional accreditation processes should be "for good of the institution" or formative in nature first, and meet accreditation second. The changing uses of assessment measures over time reflect the historical context of the accountability movement, increasing federal control over time while institutions struggle to keep their autonomy (Alexander, 2000).

While the new uses and audiences for existing data can be helpful and illuminate the educational quality of higher education institutions in new ways, they also have possible unintended consequences. For example, measures that were initially created for institutional purposes may not satisfy the specific needs of the public, and may be underutilized by a broader audience as a result. Similarly, assessments created initially for the public (such as U.S. News) might have unintended consequences if institutions use these measures to change their educational practices. For example, an institution might emphasize research at the expense of teaching and service to increase one's prestige and ranking (Espeland & Sauder, 2007; O'Meara, 2007). I review these contrasts in totality across several examples of assessment measures in Table 12.4.

The "How" of Assessment of Higher Educational Quality

The previous section illustrated the lack of data on the educational core that is seen by the public. In this section, I delve more deeply into the theoretical and methodological roots of this problem. Each assessment derives from particular theoretical conceptions of higher education and what "educational quality" means. Finally, there are several ways to collect and analyze assessment data, which alter the use of the assessment in practice. This next section describes and analyzes the theoretical frameworks and the methods of data collection for measures of college educational quality.

Table 12.4 Example measures of college educational quality (non-exhaustive)

Main Audience	Assessment	Assessor	Level	Transparent?	Comparable?	Approach	Conception	Methods
Policy-makers	NCES surveys	Federal government	National, institutional	Transparent	Comparable	Mainly inputs and outputs	**Variety**: Student characteristics, enrollments, financial aid, graduation rate	Survey
	Performance funding models	State governments (e.g. Ohio Higher Education Funding Commission)	Institutional, state systems	Transparent	Comparable	Mainly inputs and outputs	**Variety**: Student characteristics, enrollments, resources, graduation rate	Mainly institutionally reported
	Student achievement measure	Six higher education associations (e.g. ACE, APLU, AAU)	Institutional	Transparent	Comparable	Output	**Graduation rate**	Institutionally reported
	Regional accreditation	Regional accreditation bodies (e.g. MSACS)	Institutional	Mainly confidential	No	Mainly process and outcomes	**Variety**: Teaching, learning, curriculum, leadership, financial	Multiple method—peer review, observation, syllabi, student work

Table 12.4 (continued)

Main Audience	Assessment	Assessor	Level	Transparent?	Comparable?	Approach	Conception	Methods
Disciplinary associations	Disciplinary accreditation	Disciplinary Associations (e.g. NCATE)	Discipline, program	Mainly confidential	No	Mainly process and outcomes	**Education**: Programs and majors	Multiple method—peer review, observation, syllabi, student work
Public	U.S. News Rankings	US News & World Report	Institution	Transparent	Comparable	Mainly Inputs, Outputs	**Prestige**: Selectivity, resources, reputation	Institutionally reported, reputational survey
	Forbes "America's Top Colleges" Rankings	Forbes and the Center for Affordability and Productivity	Institution	Transparent	Comparable	Mainly outputs	**Economic** Value	Institutionally reported
	Princeton Review "Best Colleges"	Princeton Review	Institution	Transparent	Comparable	Inputs; process; outputs	**Variety**: Satisfaction, education, student-life	Survey
	Washington Monthly	Washington Monthly	Institution	Transparent	Comparable	Inputs, process, outputs	**Public good**: Social mobility, research, service	Institutionally reported
	The Top American Research Universities	The Center for Measuring University Performance	Institution	Transparent	Comparable	Inputs outputs	**Prestige**: Selectivity, resources, research	Institutionally reported

	College navigator	NCES, federal government	Institution	Transparent	Comparable	Inputs, process	**Variety**: Selectivity, price, lists of majors, student orgs	Institutionally reported
	College portrait	VSA; NASULGC and AASCU	Institution	Transparent	Comparable	Inputs, process, outputs, outcomes	**Variety**: Student characteristics, engagement, graduation rate, learning	Multiple—Institutionally reported, survey, testing
Institutions	Collegiate learning assessment	Council for Aid to Education	National, Institution, Student	Transparent (national, student); Mainly Confidential (institution)	Comparable	Outcome	**Education**: Critical thinking	Standardized test
	Student experience in research universities (SERU)	UC Berkeley Center for Studies in Higher Education	National, institutional	Transparent (national); Mainly confidential (institution)	Comparable	Inputs, process, outputs, outcomes	**Education**: Research experiences, major	Survey
	National survey of student engagement	Indiana University Center for Postsecondary Research	National, institutional	Transparent (national); Mainly confidential (institution)	Comparable	Inputs, Process, Outputs, Outcomes	**Education**: Engagement	Survey

Table 12.4 (continued)

Main Audience	Assessment	Assessor	Level	Transparent?	Comparable?	Approach	Conception	Methods
	CIRP Freshman and Senior Surveys	Higher Education Research Institute at UCLA	National, institutional	Transparent (national); Mainly Confidential (institution)	Comparable	Inputs, process, outputs, outcomes	**Education**: Pre-college characteristics, educational experiences, learning and development	Survey
	WNSLAE	Center of Inquiry, Wabash College	National, Institutional	Transparent (national); Mainly Confidential (institution)	Comparable	Inputs, process, outputs, outcomes	**Liberal Arts Education**: Pre-college characteristics, educational experiences, learning and development	Multiple—Survey, testing
	VALUE Rubrics[a]	AAC&U	Still developing	Still developing	Still developing	Outcomes	**Education**: Learning	Analysis of student work
	Institutionally based assessments	Institutional Research and Assessment Offices	Institutional	Mainly confidential	No	All approaches	**Education**: Variety	Multiple

[a] I refer readers to Rhodes (2012) for details on the Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics

Theoretical Frameworks and Conceptions of College Educational Quality

When examining the theoretical conceptions of educational quality in both the higher education literature as well as a multitude of current assessment measures, I would describe the theoretical landscape as extensively wide, but shallow. Almost three decades ago, Tan (1986) reviewed the higher education literature and reached similar conclusions, finding that quality studies are not theoretically grounded and tend to be "fishing expeditions." According to Tan, "Since quality is multifaceted and varies with individual perception, it cannot be universally agreed upon" (p. 223). Then, a decade later (two decades ago), Harvey and Green (1993) reviewed the literature on educational quality and came to similar conclusions: "We all have an intuitive understanding of what quality means but it is often hard to articulate. Quality, like 'liberty', 'equality', 'freedom' or 'justice', is a slippery concept . . . Quality is also a value-laden term: it is subjectively associated with that which is good and worthwhile (Dochy, Segers, & Wijnen, 1990; Pfeffer & Coote, 1991). For this reason, linking an activity to quality may serve to validate or justify it irrespective of what the notion of quality might mean." Then, exactly 10 years later (one decade ago), Srihanthan and Dalrymple (2003) wrote, " . . . despite the volumes being written on it, and several patterns of practice put into effect in different countries (Woodhouse, 1996), there is still no agreement on a model for quality in higher education . . . the disagreements seem to stem from basic differences in approach to quality between higher education and industry" (p. 127).

These studies refer to the relative nature of defining the *content* of quality (i.e. quality of *what*?—e.g., learning, rigor, economic value, social good). But there are also questions about the relative *standards* of quality. For example, Harvey and Green (1993) described five ways of conceiving of quality: Quality can be viewed as (1) exceptional (unique, above highest standards)—e.g., prestige, Harvard University; (2) perfection (or consistency/no defects)—e.g., high graduation rates; (3) fitness for purpose (mission driven)—e.g., access in land grant institutions; (4) as value for money (efficiency)—e.g., low net price and high alumni salary; and (5) as transformative (value added)—e.g., student learning and development outcomes, controlling for pre-college characteristics.

If defining "quality" is so obscure, why has it captured the attention of higher education scholars for decades, and the human condition for centuries (Espeland & Sauder, 2007)? Gestalt psychology might suggest that defining quality is a way of categorizing—a part of human nature that causes us to make things whole. Commensuration might suggest that we crave simplification—and understanding quality simplifies a complex world of higher education. Or perhaps, scholars and higher education practitioners focus on measuring quality because "what gets measured is what gets valued" (Burke et al., 2002, p. 15). In this way, quality informs public policy and practice. In a 2007 report developed by bringing together various stakeholders in higher education (educational, business, community, and policy leaders) across a multi-year dialogue with hundreds of colleges across

all institutional types, the American Association of Colleges and Universities (AAC&U) described the need to focus on educational quality: "Across all the work on access, readiness, costs, and even accountability, there has been a near-total public silence about what contemporary college graduates need to know and be able to do" (p. 7). AAC&U calls' this silence "a deadly silence:"

> To students, it [the silence on quality of learning] can send the self-defeating message that the diploma itself—rather than the quality of learning it represents—is the key to the future . . . To markets, the silence about what matters in college has already sent the strong message that, if you just call it "college," anything goes. The label now applies to every possible form of postsecondary activity, from campuses where faculty engage even first-year students with the emerging frontiers of knowledge to the more than four thousand commercial or "career" colleges whose mission is to prepare students only for a specific occupation (AAC&U, 2007, pp. 8–9).

Given that quality is a considerably elusive term, and has remained so over several decades, it seems fitting that there would be a plethora of different conceptions of higher educational quality. Next I turn to describe each of the several ways of defining the *content* of higher educational quality (quality of *what*?). While each of these conceptualizations is backed by a considerable literature, I briefly describe the conceptualization, examples of studies that use each conceptualization, and how it applies to the assessment context today.

Resources, Selectivity, and Reputation

While resources, selectivity, and reputation appear to measure distinct constructs, they all relate to institutional prestige. Perhaps the oldest definition of educational quality is that of prestige (e.g. Cartter, 1966), yet this definition continues to be prominent to this day (e.g. Thomas & Zhang, 2005). This conceptualization of quality is derived from both economic and sociological disciplines. The history of using resources, reputation, and selectivity as a measure of quality has persisted over many decades and in many facets of higher education. For example, in 1966 Cartter used prestige and reputation to measure the quality of graduate programs. In Gardener's (2010) qualitative study of 38 faculty members and 60 doctoral students at a tier three institution both faculty and students discussed how they defined prestige. Faculty participants discussed prestige as linked to resources and student quality, student participants discussed prestige as linked with an institution's image and faculty quality. Interestingly, students worried that increasing prestige would decrease faculty focus on student needs/instruction and increase focus on research.

According to O'Meara (2007), consumers of the ranking industry assume that prestige and selectivity are determinants of higher educational quality. More specifically, US News rankings measure reputation by asking institutional administrators their opinion of other institutions. Selectivity as a measure of prestige heralds from the conception that the best students will compete for spots in the best institutions—in this way, the more students that apply and the fewer students that are accepted,

the better the institution. Similarly, SAT scores are often used as a proxy for selectivity, with the reasoning that schools with "smarter" and "more successful" students are more prestigious. This relies on the assumption that SAT score is a good proxy for caliber of student and will be associated with success in college. There is some support for this assumption (Sackett, Kuncel, Arneson, Cooper, & Waters, 2009), but this has been highly debated due to the correlation between SAT score and socioeconomic status as well as race/ethnicity. Finally prestige is also defined by resources (e.g. faculty with PhDs, research expenditures, alumni giving, endowments).

The conception of quality as prestige has been used by studies from several methodological traditions within the higher education literature. Burke et al., (2002) conducted a document analysis of 29 states with reports from performance indicators and found that measures in the performance indicator reports emphasize three "models of excellence," one of which was Resource/Reputation. Thomas and Zhang (2005) used a nationally representative sample of students from the baccalaureate and beyond survey (B&B) to examine the impact of college quality and academic major on earnings and defined college quality as selectivity and prestige (but the measure was selectivity only): "While institutional "quality" and "prestige" are difficult concepts to operationalize, the findings are remarkably consistent across a large number of studies: graduates from more prestigious, more selective, and higher academic quality colleges enjoy small but significant wage premiums relative to peers graduating from less academically distinctive institutions" (p. 4). Welsh and Metcalf (2003) surveyed 680 faculty and administrators at 168 institutions (55 % response rate) reviewed by the Southern Association of Colleges and Schools (SACS) and found faculty define quality according to resource-based conceptions, whereas administrators define quality along institutional effectiveness and outcomes-based conceptions. Faculty scholarly productivity is a resource that has received particular attention for its importance to higher educational quality. Morrison et al., (2011) reviewed literature on graduate program quality conceptualizations and found that program reputation based on faculty assessments was dominant as was the reputation and productivity of faculty scholarship. The conception of quality as prestige is indeed pervasive.

Economic

Closely linked to the prestige definition of quality, the economic conceptualizations also follow a consumer mentality. These conceptualizations of educational quality are newer in the landscape of accountability, and are rooted in human capital theory—the idea that students gain skills in college that will be rewarded in salary in the workforce. This is supported by the substantial correlation between college degree attainment and post-college income (Baum & Ma, 2007). Business models of quality tend to emphasize "customer" (student) satisfaction (Bedggood & Donovan,

2011; Ginns, Prosser, & Barrie, 2007), economic value/return on investment (ROI—college cost and salary outcomes), and job preparation (Jones, 2005; Morrison et al., 2011). Other studies found that salary, while distinct from quality, was correlated with educational quality (as defined by prestige and selectivity; Thomas & Zhang, 2005; Vermeulen & Schmidt, 2008; Zhang & Thomas, 2006). Outside of the higher education literature, several rankings available to the public focus on economic indicators, such as Forbes "America's Top Colleges" rankings and the corporate rankings of PayScale, which both focus on ROI. In terms of federal policy, in order to receive federal funds, institutions are required to report information about costs, debt levels, and job placement rates to demonstrate that their academic programs lead to "gainful employment."

Srikanthan and Dalrymple (2003) argued that the distinction between business models of quality and educational models of quality are stalling the quality movement—that in order to move forward in conceptualizing quality in higher education, the differences between academe and industry must be acknowledged and integrated into our understanding of quality. Using economic measures, such as ROI, may have several consequences, such as moving away from lower paying disciplines and producing a higher education degree that is more efficient, but not as rigorous:

> High demand, combined with pressure to reduce the cost of higher education, poses an ethical challenge to institutions and a danger to the unsophisticated student. Providers face a temptation to solve the cost-effectiveness problem by producing degrees that are cheaper in value as well as price. Human nature being what it is, if a fraudulent, undemanding educational program is presented to students as the real McCoy, some will buy it (NSSE, 2013, p. 2).

Moving forward, an important consideration for the economic conceptualization is to distinguish job preparation (immediate necessary skills) from career preparation (broad-based competencies that could prepare for multiple jobs and careers over the lifespan; AAC&U, 2007; NSSE, 2013).

Enrollment and Graduation Rates

The pressure for the U.S. to secure its position as the world's most educated country has been mounting. The U.S. ranked 16th out of 36 countries in the proportion of people aged 25–36 who had attained tertiary education (OECD, 2012). In 2009, President Obama addressed the joint session of congress, stating that by 2020, America will reclaim its stature as having the highest proportion of tertiary education in the world. He urged all students to complete at least 1 year of postsecondary education. The emphasis of the 2020 goal is on the quantity of students enrolled and graduated from postsecondary education institutions. These goals have pushed the accountability movement to track the numbers of students and to be more complex in the understanding of student enrollment and graduation patterns. Under this conceptualization of quality, colleges and universities should be

assessed by the number of seats in courses, number of students enrolled, number of graduates, number of credits, number of courses, etc.

Evidence of the focus on enrollments and graduation rates can be seen in the Voluntary System of Accountability, where over 300 institutions have voluntarily reported data regarding admissions criteria, demographics, costs, and what they call "student success & progress," which they define as the "percentage of students that returned after 1 year" and the "percentage of students that graduated or were still enrolled in a college after 4 years" (VSA, 2013). Additionally, several studies in the higher education literature conceived of educational quality as graduation rate (Bailey, Calcagno, Jenkins, Leinbach, & Kienzl, 2006; Powell, Gilleland, & Pearson, 2012).

Recently, the determination of graduation rate has become more sophisticated, following student swirling patterns—i.e. stopping out, transferring, concurrent enrollments prior to graduation (McCormick, 2003). Many benchmarking systems are able to show a 4-year and 6-year graduation rate, transfer graduation rate, and those still enrolled anywhere (see Student Achievement Measure, 2014). Graduation rates are included in most benchmarking systems, including performance indicators, performance funding models, rankings, rating systems (e.g. PIRS), and SAM. Institutions must also report their graduation rates as part of the eligibility requirements for federal funds.

Underlying this conceptualization is an assumption that educational practices influence graduation rates. However, this conceptualization is dependent on whether an institution has highly-prepared entering students (selectivity). While access and graduation rates are important indicators, what is sacrificed by focusing on educating more students faster? An artifact of the emphasis on enrollment and graduation rates is budgeting models that reward more seats in courses, regardless of how those seats are created (e.g. using adjunct faculty and teaching assistants to meet goals; Rhoades & Slaughter, 2004). In support of the American Association of Colleges and Universities's focus on quality and learning outcomes, Rhodes (2012) states "much of the public discourse and policy discussion has been focused on the number and percentage of students entering and completing college, with little, and definitely not equal, emphasis on the quality of learning" (p. 36).

Engagement

Defining educational quality in terms of student engagement and educational practices associated with student engagement has been a significant higher education movement, beginning in the 1990s, that ran counter to the prestige, resources, and reputation based definitions of quality.

> In reflection on the 10 year anniversary of NSSE, Russell Edgerton stated, "as Director of Education for The Pew Charitable Trusts, I convened a group of educators to brainstorm what the foundation might do to counteract the perverse incentives of college rankings such as those issued by U.S. News & World Report. The upshot of the discussion was that Pew

should open up a new source of evidence about college quality, based on what students had to say about their college experience (National Survey of Student Engagement, 2009, p. 3)

The student engagement movement grew out of decades of research on college students, and I refer readers to Tinto (1975) on integration, Astin (1993) on involvement, and Kuh (2009) on engagement as well as Pascarella and Terenzini (2005) and Wolf-Wendel, Ward, and Kinzie (2009) for a broader discussion of the application of these theories. The most prominent example of the assessments from this movement is the National Survey of Student Engagement (NSSE): more than 1,500 institutions have participated in NSSE since 2000. The most current iteration of this survey is based on ten practices of engagement organized into four themes: academic challenge, learning with peers, experiences with faculty, and campus environment (NSSE, 2013). The basic idea behind engagement theory is that students learn when they are engaged (and more frequently engaged) in high-impact practices. A great magnitude of literature on higher education has been based on the engagement conceptualization of educational quality in the past two decades.

While many institutions and scholars have used NSSE and the conceptualization of student engagement, broadly, it has also been critiqued conceptually for focusing on student effort rather than educational practices and practitioners (Bensimon, 2007), for lacking equity mindedness (Dowd, Sawatzky, & Korn, 2011), and for a weak association with learning outcomes. For example, Carini et al., (2006) used a sample of 1,058 students at 14 institutions in 2002 to study the connection between student engagement measures and academic performance (GPA and learning outcomes testing) at the student level. They found statistically significant and positive relationships between student engagement measures and certain achievement measures, but these relationships were quite weak.

Educational Practices and Teaching Quality

Evolving out of critiques of the engagement movement, certain higher education scholars began to conceptualize educational quality by educational practices and practitioners. The engagement literature has mainly focused on out-of-classroom experiences and student effort within classes rather than pedagogical techniques. For example, the engagement paradigm might have assessed whether (yes or no) and how frequently a student participated in collaborative projects. By contrast, the educational practices approach might ask how instructors facilitated the collaborative projects to influence learning.

Neuman's (2012) ASHE presidential address discussed a conceptualization of college teaching and learning that focuses on core subject matter ideas, the role of the learner's prior knowledge, and the practices of college teachers that support student learning. Neumann's conceptualization draws upon an understanding of funds of knowledge (Moll, Amanti, Neff, & Gonzalez, 1992) and culturally relevant pedagogy (Ladson-Billings, 1995), which demonstrate that instructors can facilitate

student learning by (1) organizing an in-depth encounter with core subject matter ideas; (2) surfacing student's prior knowledge related to course material; and (3) helping students work through the dissonance between this prior knowledge and new subject matter ideas. Campbell, Jimenez, and Ostrow (2014) described an institutional assessment protocol that focuses on teaching quality using Neumann's (2014) conceptualization through approximately 150 classroom observations and syllabi analyzed at two selective research institutions. This study provided initial evidence that assessing teaching quality in this way can influence academic rigor in classes even above and beyond student engagement (Campbell, Dortch, & Cruz Paul, 2014). Perhaps what matters is not simply that students are engaged, but that they are engaged with *what and how*?

It is not only the teaching practices that matter, but also the teacher. In Estela Bensimon's (2007) presidential address to the Association for the Study of Higher Education (ASHE), based on a study of the transfer of low-income students from community colleges to prestigious institutions, she stated:

> In higher education, the dominant paradigm of student success is based exclusively on personal characteristics of students that have been found to correlate with persistence and graduation. Essentially, practitioners are missing from the most familiar way of conceptualizing empirical studies of student success; when scholars attempt to translate their findings into recommendations for actions, practitioners are rarely ever the target of change or intervention . . . When I say that practitioners are missing, I am referring to the lack of scholarly and practical attention toward understanding how the practitioner— her knowledge, beliefs, experiences, education, sense of self-efficacy, etc.—affects how students experience their education (pp. 443–444).

The absence of the practitioner and the instructor from the higher education assessment movement is surprising given the considerable study of this topic in the K-12 realm (Bensimon, 2007; Neumann, 2014). Funds of knowledge theory (Moll et al., 1992) demonstrates that every instructor shapes her or his practice and understanding of students from one's own socio-cultural and personal contexts. Similarly, with culturally relevant pedagogy (Ladson-Billings, 1995), an instructor learns about the cultural backgrounds of students and integrates this understanding into instructional practice. Instructors have a responsibility to connect the culture of students (e.g. student background characteristics), prior knowledge, and relevant outside experiences to support student success for all students. New assessments are already being developed with these new frameworks in mind. Dowd and Tong (2007) described Evidence-Based Inquiry Councils (EBICs) as "particularly attentive to the practitioner role within an integrated strategy of assessment and accountability" (p. 90).

Concurrent to the model of educational quality via educational practices and practitioners, a model of educational quality that supports equity-mindedness has emerged (Bensimon, 2007; Dowd et al., 2011). While Bensimon (2007) described the need to focus on practitioners at-large, she particularly addressed the importance of assessing a practitioner's ability to be "equity-minded," assuming responsibility of the institutions and the practitioners in the success of minority students rather than a success mindset that assumes that students create their own success (which

she refers to as the dominant theoretical paradigm for student success). Dowd et al., (2011) also criticize higher education conceptualizations of student engagement, involvement, and effort, citing "the need to measure student experiences of racial bias on college campuses and institutional effectiveness in reducing institutionalized racism." From this equity conceptualization, Bensimon derived the equity scorecard project—an assessment that allows practitioners to develop equity mindedness by reflecting on and strategically acting towards improving the institution's current status for supporting and facilitating minority student success. There are also other kinds of equity-oriented assessments that focus on campus racial climate (Hurtado, Griffin, Arellano, & Cuellar, 2008). The equity conceptualization of educational quality may be particularly important at this time in higher education when commercialization of higher education is rapidly taking hold. Rhoades and Slaughter (2004) describe the connection between commercialization, quality, and access: "commercialization of the curriculum is moving institutions away from a commitment to providing access to underserved low-income and minority students and toward an investment in providing convenient accessibility and continuing education to student populations that are not only more advantaged but are already being served in our higher education system" (p. 47).

Liberal Education Outcomes

Grown out of the learning outcomes assessment movement, the AAC&U brought together scholars, practitioners, and policy-makers across the nation to define broad-based learning outcomes that were meant to apply to all undergraduate curricula:

> Those who endorse narrow learning are blind to the realities of the new global economy. Careers themselves have become volatile. Studies already show that Americans change jobs ten times in the two decades following college, with such changes even more frequent for younger workers. Moreover, employers are calling with new urgency for graduates who are broadly prepared and who also possess the analytical and practical skills that are essential both for innovation and for organizational effectiveness (AAC&U, 2007, pp. 15–16).

Currently, there are two widely used, broad-based learning outcomes frameworks for assessing educational quality: the Essential Learning Outcomes (ELOs) from AAC&U (Rhodes, 2010, 2012) and the Degree Qualifications Profile (DQP) from the Lumina Foundation (Lumina Foundation, 2011). The ELOs contain four domains of outcomes: Knowledge of Human Cultures and the Physical and Natural World (e.g. humanities, mathematics), Intellectual and Practical Skills (e.g. critical thinking, written communication), Personal and Social Responsibility (e.g. civic knowledge, intercultural knowledge), and Integrative and Applied Learning (e.g. synthesis). AAC&U developed rubrics, called Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics[4] that would allow for the evaluation of

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[4]I refer readers to Rhodes (2012) for details on the VALUE framework.

student work using the ELOs (Rhodes, 2010). These rubrics are being piloted across the country for both formative assessment and summative benchmarking practices within and across states. The DQP[5] proposes learning outcomes for each degree level (associate, bachelors and masters) across five domains: Applied Learning, Intellectual Skills, Civic Learning, Broad Integrative Knowledge, and Specialized Knowledge.

While this movement has considerable support in the policy stream and from institutions, there are questions about the scalability and applicability of these rubrics across institutions and disciplines. Additionally, the same questions that were raised about the engagement conceptualization apply to this movement: is it valid to measure educational quality by student characteristics (i.e. student learning) rather than educational practices that can be improved? Finally, these frameworks enumerate standards for quality in higher education, but they do not provide guidance for how to measure student work associated with these standards—this is still being developed.

Measures for the Public—"The Smorgasbord Approach"

While the conceptualizations of educational quality within the literature of higher education are diverse, those used in national or international assessment measures are limited, mainly focusing on student engagement (NSSE, 2013; Voluntary System of Accountability, 2013), critical thinking (CLA, 2013), academic proficiency (e.g. CAAP and MAPP), and retention and graduation rates (College Scorecard, 2013; SAM, 2014; VSA, 2013). Further, these conceptually-driven large-scale measures of educational quality are used mainly by institutions and accreditors and largely do not reach the public eye.

Many of the measures of college educational quality that are seen by the public lack theory—or at least do not explicitly state a theoretical framework (Table 12.4). For example, US News and World Report rankings looks for the "Best Colleges," but it does not explicitly state a definition of "best" or "quality" or a theoretical underpinning. Upon closer examination, the data collected by U.S. News includes indicators such as a peer rating survey, alumni giving percentage, and incoming SAT score. It (arguably) arbitrarily combines inputs, processes, and outputs into a single measure. Another popular quality ranking used by the public is the Princeton Review's *377 Best Colleges*, which is also atheoretical. According to the Princeton Review (2013), "We ask about all sorts of things . . . We ask students about: (1) their school's academics/administration, (2) life at their college, (3) their fellow students, and (4) themselves." Similarly, quality measures produced by non-profit organizations produce a wide array of different kinds of measures, neither guided nor informed by a comprehensive educational framework. For example according to

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[5]I refer readers to Lumina Foundation (2011) for details on the DQP framework.

the VSA's College Portrait (2013), "Each institution's College Portrait has a variety of information including the characteristics of students and faculty, admissions requirements, popular majors, average class sizes, campus safety, the future plans of graduates, and much more . . . ." In each example of public assessments of college educational quality, no conceptual framework of educational quality is specifically defined, and measures (with certain exceptions) largely lack a focus on the educational core of institutions: teaching, learning, and academic rigor: "Until higher education monitoring agencies take an explicit 'transformation' approach to quality (Astin, 1985; Harvey & Knight, 1996) and seriously think about what that involves for student learning they will continue to be 'technicians' failing to ask substantial questions" (Harvey, 2002, p. 260).

Not only are the publicly available measures of college educational quality atheoretical, but the varied metrics that they use largely focus on resources and reputation, ignoring the educational core (i.e. teaching and learning). The rankings measures (such as US News) are an infamous example of *unintended* consequences of using atheoretical measures of educational quality, such as deceit through numbers manipulations, changes in institutional missions, and changes in curriculum and educational delivery (Espeland & Sauder, 2007; O'Meara, 2007). These unintended consequences appear to be particularly salient in "striving" institutions. O'Meara conducted an extensive literature review on striving institutions and found that striving can have a number of negative consequences to the undergraduate educational quality including focusing resources and priorities on graduate level programs and increasing spending on administration and marketing/external relations at the expense of instruction. These changes are related to less undergraduate student engagement, less focus on teaching, more negative outcomes for low-income and minority students, and negative implications for innovation (O'Meara). Morphew and Baker's study in (2004) supported these findings using IPEDS data on Carnegie classification and institutional spending over time and found that striving institutions spent more on administration and less on instruction. At the graduate level, Espeland and Sauder (2007) use a framework of commensuration (i.e. simplification of a complex phenomenon into a number) to describe the influence of rankings on institutions and student experiences in law school: "Assigning precise numbers to each school creates and highlights small distinctions. Differences in rankings, even miniscule ones, are closely scrutinized . . . Many schools tell painful stories of how tiny, insignificant movement in some factor, a change that reflects 'nothing real or important' in their view, caused dramatic downward mobility" (p. 20).

Outside of rankings, the conceptualization of quality as larger enrollments, faster graduation rates, or economic value may have unanticipated consequences for undergraduate education. The prioritization of cost and affordability among accountability measures can cause efficiency and market considerations to alter curriculum. According to Rhoades and Slaughter (2004), based on interviews of 135 department heads at 11 research institutions, "strategic decisions about the development, investment in and delivery of curriculum are being increasingly driven by short-term market considerations—and are made outside the purview of shared governance" (p. 47). Administrators make curricular decisions based on creation

of revenue (e.g. more credits) and cost efficiency rather than quality of education. For example, efficiency standards and measures have meant more students in courses taught by graduate students, dropping prerequisites and lowering standards in math courses, more summer offerings, offering professional graduate degrees, and increasing distance education offerings. Rhoades and Slaughter highlighted the concern that faculty are becoming more and more removed from academic decision-making due to the "management revolution" and that new programs "were not being designed with the aim of systematically enhancing student learning" (p. 42).

Conceptualizing quality in ways that detract from the educational core is of particular concern in today's higher education landscape. In August of 2013, President Obama unveiled a plan to create a Postsecondary Institutional Rating System (PIRS) that would make data on affordability, access, and outcomes (graduation and employment outcomes) transparent to the public and eventually be tied to government funding. In discussing the PIRS, an American Council on Education (ACE) brief states, "If the current rankings environment offers any lessons, the rating system may reinforce institutional hierarchy, with similar consequences" (p. 10). Without focusing conceptualizations of educational quality on teaching, learning, and educational practices, assessments will likewise reinforce the status quo and privilege institutions with better students rather than a better education.

Methodology and Methods for Assessing Educational Quality

While the conceptualizations of educational quality are numerous and shallow, the methods used for summative assessment of educational quality have been limited—both in the higher education literature and in the public sphere (Table 12.4). Harvey (2002) describes this contrast: "Despite the varied objects of evaluation and the array of different types of agencies, there is a surprising conformity in the methods that are adopted." (p. 255). Almost all of the national assessment measures discussed to this point have been obtained using one of three quantitative methods: institutionally reported data collection, survey (mainly student survey), or educational testing. The methods of assessing educational quality have not changed substantially in over three decades. In Tan's (1986) review of the literature on educational quality, he found that reputational surveys and performance indicators using institutionally reported data were prominent. The current addition of testing as a method for assessment began as an outgrowth of the NCLB act in K-12. Next I review the three primary methods for assessing college educational quality.

Institutionally-Reported

Several measures of educational quality use data that are institutionally reported from institutional data sources, such as admissions, human resources, and enrollment. Examples of measures that use institutionally reported data for assessing

educational quality include US News rankings, IPEDS, VSA, SAM, and the Center for Measuring University Performance. For example, U.S. News asks institutions to report institutional data such as, freshmen SAT scores, alumni giving percentages, and information on faculty-student ratio. Several recent studies in higher education have also used institutionally-reported data or national datasets that house institutionally-reported data (e.g. IPEDS) to measure educational quality through selectivity or graduation rates (e.g. Powell et al., 2012).

There are numerous reasons why institutionally-reported data are regularly used in summative measures of educational quality. For non-institutional assessors, they are relatively inexpensive to obtain because institutions largely bear the burden of producing the data. They are comparatively easy to access, largely because institutions are federally required to report data to IPEDS in order to participate in the federal student financial aid programs. Because IPEDS data are largely available to the public, measures that use IPEDS data can also be publically accountable. The process of collecting these data does not require being present at an institution or interacting in any way with the educational process or the students at the institution. These data are often used as performance indicators at the state level, which aim to help institutions demonstrate accountability, improve performance, meet state needs, and in some states inform students and parents about performance (Burke et al., 2002). Additionally, when describing the best practices in moving assessment data to action towards educational improvement, Blaich and Wise (2010) stressed the importance and power of an outsider visit and benchmarking with other institutions. Institutionally reported data in performance indicators can be used for these comparable benchmarking practices. Yet, there are several critiques of using institutionally reported data. Institutionally-reported data can be easily manipulated to look better on measures like US News—for example, changing the way first-time full-time students are defined or changing the categories of faculty can alter results. There are few data-quality checks on whether the data reported by institutions are accurate. A second critique is that institutionally-reported data mainly focus on inputs (e.g. SAT score, enrollment, faculty credentials) and outputs (graduation rates) and therefore are not able to accurately capture the educational experiences and outcomes (O'Meara, 2007). Is it possible to know about educational quality without getting a closer look at educational practices or student experiences?

Self-Report Survey

Survey research has been widely used to measure educational quality in higher education both within the higher education literature and by outside consumers of higher education data (such as private corporations and policy-makers). According to Porter (2011), "surveys of college students have become one of our largest and most frequently used data sources. In addition, surveys of college students play an increasingly important role in evaluating the effectiveness of college and university

programs and policies" (p. 45). Surveys are a quantitative technique that can access a broad audience in a relatively cost-effective and simplistic manner (Simone, Campbell, & Newhart, 2012). Prominent current examples of surveys within the field of higher education that have been used to understand educational quality include the WNSLAE, the NSSE, and the CIRP surveys. The audience for these surveys is mainly institutions and accreditors. Private corporations have also used survey methods to assess the quality of higher education. For example, the Princeton Review surveys college students about their in-and-out-of-class experiences and then uses this information in a guide targeted at prospective students and families.

While survey methodology is relatively inexpensive and practical for large data collection, it has been critiqued for creating biased responses due to social desirability and memory recall problems (Simone et al., 2012; Porter, 2011, 2013). Kuh and colleagues, who created the NSSE, propose five conditions that should be met for participants' responses to be considered valid: "(a) the information requested is known to the respondents, (b) the questions are phrased clearly and unambiguously, (c) the questions refer to recent activities, (d) the respondents think the questions merit a serious and thoughtful response, and (e) answering the questions does not threaten, embarrass, or violate the privacy of the respondent or encourage the respondent to respond in socially desirable ways" (Umbach & Kuh, 2006, p. 173). Unfortunately, these conditions have not usually been thoroughly considered in the formation of educational quality assessments. Porter (2011) states that, "researchers are more focused on obtaining a good response rate for their survey, instead of using questions on their survey that have evidence for their validity" (p. 223).

Porter (2011) evaluated the NSSE as a prominent example of college student surveys along five arguments of validity and found that the NSSE does not meet content validity criteria. He cited that the NSSE validity is questionable based on "Tourangeau, Rips, and Rasinski's (2000) four step theory about the understanding of and response to survey questions: comprehension, retrieval of information, judgment and/or estimation, and reporting of an answer" (p. 52). Other scholars have reported that using student self-report surveys to measure learning or educational processes is misguided and instead represents student satisfaction. For example, Bedggood and Donovan (2011) argue that "current student surveys may not adequately capture teaching 'quality' because they lack items related to student learning, and may only reflect teacher popularity or other extraneous factors" (p. 827). This is particularly problematic because academic challenge and demands may have a positive influence on learning, and a negative influence on satisfaction (Bedggood & Donovan, 2011).

Other scholars have criticized the use of self-report surveys to measure learning outcomes. Porter (2013) used the Wabash National Study data (a longitudinal study of students at 19 institutions including data from CAAP and NSSE) to study the belief-sampling model of attitude formation in self-reported learning outcomes. The belief-sampling model proposes that students are flooded with considerations about their college experience (e.g. academic ability, experiences with majors, peers) that influence their responses to self-reported learning outcome

items rather than actual learning. Results of Porter's study favor the belief sampling model of student response, indicating that responses are more likely related to perceptions of the academic environment and pre-college characteristics than real learning gains. Consistent with Porter's study was a study conducted by Bowman (2010), who studied longitudinally self-reported learning outcomes and outcomes via standardized testing. He found that "the lack of correspondence between longitudinal and self-reported gains calls into question the validity of self-reported gains as an accurate indicator of college student learning and development. Given the prevalence of self-report measures in higher education research (Gonyea, 2005), researchers and administrators at many institutions should seriously consider the efficacy and validity of their current assessment practices" (p. 20). One study found very modest support for a correlation between self-reported and tested learning outcomes. Using a national sample of 2,289 students, Anaya (1999) compared the use of self-report measures of learning in verbal and quantitative skills to GRE scores (verbal, quantitative, and composite), and college GPA. While this study is somewhat dated and uses a sample of, perhaps, more academically inclined students (those that took the GRE after graduation), Anaya stated support for using indirect measures of student learning (such as self-report surveys) as an approximate proxy for more direct measures of learning (such as GPA or standardized tests). While statistically significant, the relationship was very small. Taken together, these studies seem to conclude that self-reported learning outcomes are not measuring learning. However, these studies assume that standardized tests do, in fact, measure learning.

Student surveys have been the most heavily used method for assessing college educational quality, yet evidence of their validity is weak, at best. Porter (2011) sums up the student survey trend: "Absent other ways to assess learning, college student surveys have become our own version of high-stakes testing. Institutions, programs, and departments are constantly being evaluated based on student survey data. Thus, we as a field must pay much more attention to the validity of the surveys we develop, use, and offer to others for their use" (p. 71). In a, perhaps, more explicitly critical perspective, Bowman (2010) states, "Although it is faster, easier, and less expensive to assess self-reported gains than longitudinal gains, the use of these cross-sectional assessments may lead researchers to draw erroneous conclusions about student learning and development; in other words, the potential problems with validity may outweigh the benefits of expediency" (p. 24) At the very least, the evidence points to the limitations of using a single self-report survey as the only measure for assessing educational quality.

Testing

Finally, the most recent movement in assessing college educational quality has been the testing of student learning outcomes. The CLA is the most prominent example, but there are several others such as the Collegiate Assessment of Academic Proficiency (CAAP), the Measure of Academic Proficiency and Progress (MAPP),

and the ETS Proficiency Profile. There are also discipline-specific tests, for example the Major Field Tests. Some of these tests measure outcomes only (i.e. the test is taken at the end of the senior year or upon completion of major courses) and others attempt to capture change during college, by administering the test in a pre-post format (freshmen and senior years). These tests have been the focus of the learning outcomes movement and have followed on the heels of the No Child Left Behind act in K-12 education. Direct measures of learning (e.g. testing—e.g. CLA) are becoming more frequently used (Kuh et al., 2014). Many of these tests aim to provide evidence of effectiveness at the institution or national level (i.e. higher education as a whole), and they are also being used in the public arena by policy makers (Keller & Hammang, 2008). Recently the CLA introduced student-level "digital badges" for students who demonstrated "proficient" and "advanced" performance (CLA, 2013).

Student testing has been highly contentious, receiving both praise and criticism (Astin, 2011; Banta, 2008). Critiques center on the diversity of missions in higher education both within and across institutions, and whether learning can be assessed at the institution or national level (i.e. the "ineffability debate"; Banta, 2008; Ewell, 2002; Pike, 2008; Shermis, 2008). Concerns have also been raised about the lack of motivation for students to take and do well on tests such as the CLA and how that may alter findings (Liu, Bridgeman, & Adler, 2012). Finally, certain prominent higher education scholars have questioned whether pre-post testing, with no control group, can facilitate understanding of educational gains and whether cross-sectional data are sufficient to demonstrate learning rather than longitudinal analyses (Garcia, 2008; Pascarella et al., 2011).

Accreditation

Although I will not go into detail about accreditation processes,[6] it is important to mention that historically, prior to the assessment movement, accreditation was seen as the quality assurance check in the U.S. (and currently largely drives the assessment movement). Accreditation aims to gain a full understanding of the institutional context, mission, and history to make an evaluation of institutional quality. The accreditation process uses a combination of methods (both quantitative and qualitative). Multiple stakeholders (e.g. faculty, administrators, students) participate in producing data for the accreditation team. Accreditation teams are comprised of faculty and staff who have been trained in accreditation processes and work in similar institutions (i.e. peers evaluating peers). While the data that accreditors collect are comprehensive and the methods accreditors use to assess educational quality are varied, their reporting of results to the public is simplistic (accredited, not accredited, or probationary status). Accreditation data on college quality is not

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[6]I refer readers to a more detailed discussion of accreditation for public understanding in CHEA (2004).

comparable at the institution level (it is institution-centric) nor can it contribute to a national level of understanding of college educational quality. To respond to this critique, in 2004, the president of the Council for Higher Education Accreditation (CHEA) advocated for creating a summary report of the accreditation results at an institution that the public could view to understand the strengths and weaknesses of the institutions as viewed through accreditation.

A New Gold Standard: Gathering Comprehensive Evidence

Considering the elusive nature of college educational quality, the complex nature of higher education in the U.S., and the great importance placed on measures of educational quality, the validity of the measures is of utmost concern. Porter (2011) said, "We can think of validity as an argument, based on theory and evidence, rather than a simple correlation" (p. 47). This comprehensive approach is consistent with the recommendations from the American Educational Research Association, American Psychological Association, and National Council on Measurement Education (1999). Borden and Young (2008) developed validity standards for higher education institutions: (1) intended use; (2) conceptual basis; (3) evidence of claims; (4) appropriate implementation: "validity is an informed judgment of how strongly theory and evidence support the interpretations and decisions based on the measure. As such, validity is not a fixed characteristic of a test or measure. It depends on the uses to which the measure is put, as well as on the population and sample on which the measure is based" (p. 21).

In addition to standards of validity, the field of education (broadly) has had impassioned debates regarding the standards that should be applied to evaluation research. Chatterji (2005) describes the What Works Clearinghouse (WWC) standards that emphasize randomized field trials (i.e. hypothesis testing with experimental design) as the gold standard of research-based evidence on effective educational programs. In fact, the WWC developed an instrument to assess whether a study meets these standards, entitled the Study Design and Implementation Assessment Device (Study DIAD)—essentially assessing the assessments. This perspective on research is consistent with the use of limited quantitative methods in higher education assessments. Dowd and Tong (2007) criticize: "A primary weakness of the experimental and quasi-experimental analyses of program effectiveness emphasized as rigorous and scientific under the NCLB and IES standards is the lack of direct observation of educational processes and social contexts, a task for which other forms of research and evaluation are better suited" (p. 72).

By and large, evaluation researchers have been advocating using multiple methods to assess effective educational practices. Rational, causal modeling, and scientifically based research [narrowly defined] may not be enough to comprehensively understand educational quality. Ewell (2008) states, "multiple approaches to gathering evidence will always be preferred to any single approach" (p. 15). There are several examples of multi-method assessment designs that are

in progress. In K-12 education, Chatterji (2005) advocated extended-term mixed method (ETMM) designs that "follow life-spans of individual programs/policy initiatives within particular environments, employing appropriate descriptive research methods in the early stages of program adoption and implementation followed by timely and judicious implementation of experimental designs at a subsequent stage" (p. 15). As a part of ETMM, Chatteri supported the "combined use of more than one research method, uncovering of patterns and deepening understandings of relationships and causality" (p. 18). In higher education, Dowd and Tong (2007) advocated for Evidence Based Inquiry Councils (EBIC), where colleges apply to work together on understanding, contextualizing, and comparing on a specific domain of educational practice. My colleagues and I have also been piloting a multi-method design to develop metrics of college educational quality at the institution level—using class observation, syllabus analysis, and experience sampling at two research institutions (Campbell, Jimenez, Chadi, & Walker, 2013).

In addition to using multiple methods, the choice of methods should be strategic and chosen based on the objectives of the assessment. This point follows from logic models in program evaluation, which create a theory of action for a program (inputs, process, outputs, outcomes, and assumptions; Kellog Foundation, 2004). The theory of action describes the logical flow of how a program achieves its goals. For example, a simplistic version of a theory of action[7] for assessing college educational quality is displayed in Fig. 12.1. The methods for assessment should be tied to the theory of action. To illuminate a complex concept as college educational quality, assessors should use diverse methods that are strategically chosen based on intended objectives of the assessment.

Higher educators have made great strides in developing institution-centric assessments that often follow a theory of action. Blaich and Wise (2010) called for using comprehensive and diverse methods for formative assessment within
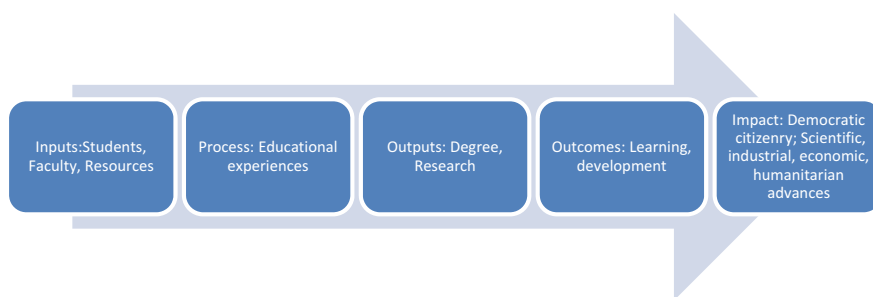
Fig. 12.1 Example theory of action for assessing college educational quality

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[7]A theory of action for college educational quality would be in far greater depth, this very rudimentary logic model is meant as an example to discuss the importance of linking a theory of action to chosen methods.

institutions where multiple stakeholders (administrators, faculty, staff) join together to investigate problems in higher education and find best practice solutions. Middaugh (2009) described several diverse assessment methods to be used to connect assessment practices and planning, including locally produced tests and surveys, standardized tests, portfolios, culminating projects, and capstone experiences. Teaching observation (Cheng, 2010) and syllabus analysis (Finley & McNair, 2013) have also recently been used for formative practices. Additionally, the Association of American Colleges and Universities (AAC&U) is investigating new ways to consider assessing student learning via samples of student work, such as the Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics (Rhodes, 2010). These rubrics are intended to evaluate student work based on the Essential Learning Outcomes (ELOs) that were developed by faculty and administrators across the nation as the fundamental learning goals of a U.S. higher education (AAC&U, 2011). They have tested the rubrics in more than 100 institutions across the nation (Rhodes, 2012). Rhodes describes how the VALUE rubrics are beginning to be used for benchmarking: "consortia of campuses have come together to assess student learning across different types of institutions using VALUE rubrics as the standard metric for evaluating demonstrated levels of student attainment." (p. 39). While these more comprehensive assessments are promising, none, to date, reach the public eye.

A Methods and Theory Storm is Brewing

The limited nature of the current methods and theoretical frameworks has widespread implications for assessing college educational quality. Methods mainly focus on institutionally reported data, student survey, and testing. Theoretical bases for assessment are broad (i.e. many different conceptualizations are used), but each conceptualization lacks depth. When examining the methods and theory of the various assessments of college educational quality, I revisit the accountability and assessment paradox.

The public and policy-makers have called for better and more data about the value of higher education institutions in the accountability movement. Questions of college educational quality have focused on (1) higher education as a whole: whether students are learning enough to make them equipped for careers and to solve 21st century problems (Arum & Roksa, 2011; Carey, 2012) and (2) institutions: comparable information across institutions on college quality (Espinosa, Crandall, & Tukibayeva, 2014; DOE, 2005). Simultaneously, an impassioned debate is taking place within the field of higher education about the assessment of colleges and universities. Critiques cite problems with theoretical grounding, (Dowd et al., 2011), concerns with survey methodology (Bowman, 2010; Porter, 2011, 2013), problems with construct development (Campbell & Cabrera, 2011), and questions of whether educational quality can be assessed at all at the institution level (Ewell, 2008). Associations from across the higher education sectors (e.g. AAC&U;

AASCU), private funders and foundations (e.g. Gates Foundation; Spencer Foundation), and governmental agencies and institutes (e.g. Institute for Education Studies) have focused attention on finding new measures of institutional success that center on teaching and learning. The White House and the Obama administration have cited student outcomes as one of three major criteria (access, affordability, outcomes) for evaluating and rating colleges and universities—although teaching and learning do not seem central to the White House outcomes plan (Espinosa et al., 2014).

The contentious nature of this debate and its media attention are evidence of the field of higher education grappling with how to best serve the nation in shedding light on the "black box." Yet, scholars and policy-makers alike seem to continue to "return to the well" in terms of conceptual frameworks and methodologies for large scale assessments of college educational quality—largely using surveys or tests, focused on graduation rates, student engagement, and critical thinking. In their review of the role of commensuration and reactivity in rankings, Espeland and Sauder (2007) cite that "Quantitative authority and its link to accountability and evaluation are now so secure, so bound up with being modern, that we have trouble imagining other forms of coordination and discipline or other means of creating transparency and accountability" (p. 5). It is as if the assessment movement is a hamster on a wheel running as fast as she can, but frustrated she can't go anywhere—we won't shed light on the "black box" by doing more assessment using the same methods and frameworks—we need to get off the wheel and run in a new direction.

Future Directions: Quality Measures for the Quality Movement

Higher Education as a field has created an entire assessment movement in attempts to respond to the calls for accountability about the quality of teaching and learning in college. The assessment movement has produced numerous new measures and metrics, such as the NSSE, the WNSLAE, the VSA, and SAM among others (Keller & Hammang, 2008; NSSE, 2013; WNSLAE, 2013). Institutions use these measures and mechanisms to demonstrate to accreditors that they are, in fact, assessing the quality of their education. Yet, unfortunately, demonstrating that assessment of learning in higher education *takes place*, does not illuminate the black box. The age-old questions still remain today: (1) across the board, nationally, does earning a higher education degree mean better learning and development than no degree? (2) what is the level of educational quality at each institution? Higher education institutions must act to address growing fears of poor performance by U.S. colleges and universities:

> concerns about higher education's performance are far deeper than they were a decade ago. Fears about loss of competitiveness in a global economy by both employers and policymakers—backed by real data about U.S. loss of leadership in postsecondary degree

attainment among young adults and evidence of declining levels of higher-level literacy on both domestic and international assessments—are widespread and real. These conditions have prompted higher education's principal stakeholders to voice their concerns as never before (Ewell, 2008, p. 13).

Using the categorizations and analysis in this paper, I highlight two main concerns that need to be addressed with assessments of educational quality of colleges and universities. First, attention must be focused on one audience at a time and the most critical need at this juncture is to focus on data for the public. Second, our current conceptualizations and methods for assessment of educational quality are inadequate, and the field of higher education can play a role in elevating the assessment movement.

First, in contrast to previous literature (e.g. Burke, 2005; Dowd & Tong, 2007; Ewell, 2008), I argue that *no assessment can serve two masters*. Assessments of educational quality serve several possible audiences, including policy-makers, institutions, and the public. Most previous literature has advocated for balancing the interests of multiple stakeholders and collaborating for assessment. Burke describes the accountability triangle: state priorities, academic concerns, and market forces. Burke advocates for the most effective accountability program to focus in the center of the triangle, in essence trying to balance the needs of the three forces. Similarly, Dowd and Tong (2007) advocate for Evidence Based Inquiry Councils (EBICs) to drive assessment and accountability initiatives. EBICs would have shared responsibility among the three stakeholders of the accountability triangle: government, academe, market (Burke). The EBICs would make use of data by, "Dissemination of findings and practices to other campuses through mobility of experienced faculty and administrators, presentations at professional association conferences, peer-reviewed journals, archival data bases, and EBIC web sites." Ewell, too, calls for collective responsibility over accountability, over teaching, learning, and its results.

Why not balance needs across multiple stakeholders? As demonstrated in this chapter's analysis, each of these stakeholders has different objectives, needs, resources, and power. Institutions continue to collect and report on institution-centric assessment data to internal and confidential audiences (such as accreditors) to fulfill the call for transparent, comparable data. This is a broken system. Institutions are collecting and reporting on a multitude of data, while being told that more should be done. Policy-makers are getting to see just enough of an institution (that learning assessment is taking place, but not the *results* of those assessments), to ward off a federal mandate, but are not satiated. The public sees virtually nothing of the "frenzy" of learning outcomes that would be comparable across institutions or answer the broader question about the learning that results from a college degree. A letter from the president of CHEA (2004) describes how the broken system plays out in the accreditation process:

the nature of accreditation review . . . calls for at least a modicum of discretion and a modest commitment to some privacy and confidentiality. This is vital to the ability of accreditation to confront difficult and sensitive quality issues in aconstructive manner. On the other hand,

accreditors are firmly committed to openness and candor. Indeed, all accreditors identify providing students and the public with general information about quality in higher education as one of their responsibilities (p. 2).

To date, when trying to balance the needs of multiple masters, the institutions are winning the battle, but losing the war. By "winning the battle" I mean that thus far they have warded off a federal mandate for standardized learning outcomes assessment that is publicly reported. They hold the access to data, and thus have substantial cybernetic power (Birnbaum, 1988) to protect their interests of confidentiality and keeping data institution-centric. This dynamic was demonstrated during the Spellings Commission hearing—Spellings wanted standardized and publicly reported learning outcomes required of institutions. Institutions did not want a requirement for transparent learning outcomes data (for several reasons described at the beginning of this chapter). Institutions largely won this battle and now only some institutions report selective learning outcomes data on a voluntary basis.

Unfortunately, winning the battle against providing comparable teaching and learning data to the public has come with a great price: *producing evidence to accreditors* that institutions participate in institution-centric assessment to monitor and *improve student learning*. Here, we see the *two-masters conundrum*: effective improvement processes are not externally imposed or reported (Blaich & Wise, 2010; Dowd & Tong, 2007; Ewell, 2008). They are internally driven and there is buy-in across campus (Blaich & Wise, 2010; Cistone & Bashford, 2002; Ewell, 2008; Welsh & Metacalf, 2003). They are woven into the mission and strategic planning for the institution (Cistone & Bashford, 2002; Doerfel & Ruben, 2002; Middaugh, 2009). They use multiple forms of evidence (Dowd & Tong, 2007; Ewell, 2008; Middaugh, 2009) and are conceptually based (Rhodes, 2012). They are confidential—allowing for the "ugly" side of institutions to surface and be addressed (CHEA, 2004). They focus on data use for change instead of data reporting, with resources to support using data to improve educational practice (Blaich & Wise). The very nature of assessment for improvement of educational practice stands in opposition to the demands of external accountability and reporting. By trying to serve two masters (policy-makers and institutions), institutions have essentially sacrificed their ability to use assessment for improvement of learning. While some institutions are trying hard to manage this "juggle"—between reporting and use, data is often collected, reported, and then sitting on a shelf or website (Blaich & Wise).

If higher education institutions spend a lot of time, energy, money and staff producing "oranges"—and the public/policy-makers want "apples"—perhaps, the field of higher education could attempt to produce an "apple," though imperfect, and then grow and use the "oranges" to nourish institutions. In other words, by taking a stand on a comparable, transparent measure of educational quality for the public, then assessment efforts could truly be for institutional improvement. Imagine, if institutions collected and reported comparable, transparent measures of educational quality for accreditors and the public—and left the assessment movement, focusing

on improvement of learning, to be confidential within institutions. Imagine, if institution-centric assessments did not have to be reported to accreditors, and instead institutions at large (as well as departments and programs) could answer questions like: "What is the absolute worst part of our teaching and learning process? What is its cause? What are its effects? How can it be changed? How long will it take to change this problem? Is it even possible for this kind of change? What are the barriers and how can they be relieved?"

Another significant problem in this system is that the public loses both the battle and the war. As can be seen in Table 12.4, the public lacks data on the quality of the educational core. They are left with mainly corporate-driven ranking systems. In order to illuminate the "black box," higher educators must focus on the needs of the *public* for comparable, transparent measures of educational quality (Ewell, 2008). Ewell calls for strategic developments in assessment for the public: "the post-Spellings world demands a good deal more openness and transparency about sharing the results of assessment than is currently typical" (p. 15). Similarly, AAC&U (2007) advocates for breaking the silence to the public. Most of these calls for transparency to the public focus on working from the inside (academia) out (to the public)—working with institutions to reveal their data on teaching and learning to the public. Instead, what about focusing on working from the outside in—working to understand the public's needs for higher education data and then asking how this applies to institutions?

Tuning the educational quality movement to the public voice means learning more about what the public knows and doesn't know about higher education (as a whole) and institutions (comparably). Do they know that there are different institutional types, and therefore missions? Is that important to them? Do they know there is more variance in educational experiences within than across institutions? What do they want out of college for a) their families and b) the country? More broadly, who are the "publics" for higher education—Publics who are prospective students and families? Publics who do not have any connection to higher education whatsoever? Publics who work as employers? Publics as democratic citizens? Publics as change agents? If there are multiple publics for higher education, does their knowledge of, and do their needs for, data on higher education differ? Does educational quality matter at all in college choice or are cost and affordability the only key factors? While the current rhetoric suggests that cost is the most important feature of a college for the public (Espinosa et al., 2014), recent data from the Higher Education Research Institute (HERI) suggests that academic reputation of an institution (a quality measure) is the most salient factor in the college choice process for today's freshmen (Eagan, Lozano, Hurtado, & Case, 2013). While we have some answers about those who have matriculated in higher education and their families—what do we know about the other publics?

I contextualize this recommendation in an understanding of the fears of providing transparent data to the public. Many scholars have argued that there are no measures that could adequately assess educational quality in higher education across the diverse array of institutions (Espeland & Sauder, 2007; Ewell,2008; Tan, 1986;

Wyatt, & Morphew, 2012). In essence, due to persistent fears of metrics being oversimplified and not fully capturing the context of each institution, the assessment movement has largely taken a stand to provide no public metrics that would be comparable across institutions. Ironically, this has had the opposite of the intended effect: irrelevance of institution-centric data for the public and oversimplification of corporate-driven assessments. Due to this fear, the assessment movement may become more irrelevant to public needs over time—the more nuanced the understanding, the more it is an "insider conversation," the less the data will resonate with the public. The fear of an inability to find a perfect measure at the institutional level has left fewer public data sources—and caused the public to look to primarily one source, even just one number, for an indicator of the educational quality of institutions—U.S. News. Alternatively, the public is left with a combination of other corporate metrics or perhaps no data at all—and just reputation by word of mouth. To this point of view, I contend, "Don't let the perfect be the enemy of the good." Other scholars have echoed these concerns, calling for more focus on practicality and usefulness of measures than perfection of measurement (Borden, & Young, 2008; Harvey & Green, 1993).

In my literature review for this chapter, I ran across an article by Tan (1986) from three decades ago that served as a reminder about what feels impossible today. Tan stated that "No absolute criterion or measurement of quality is possible" (p. 224), and later goes on to declare that, "Kuh (1981) suggested the use of the student undergraduate experience as an indicator of student excellence, but that is too difficult to measure" (p. 249). Shirking off this idea of measuring the undergraduate experience, Tan goes on to support resources and reputation as the main conceptualization of quality. What perhaps Tan could not know was that three decades later, more than 1,400 institutions have started to gather, albeit imperfect, data on the undergraduate experience through NSSE and other initiatives. While these data are imperfect, they are perhaps useful as a starting point, and demonstrate that what feels impossible today in terms of assessing educational quality could be realized if we start asking the right questions.

Without the field of higher education staking a claim on informing the public voice about educational quality in colleges and universities, this void is filled by corporate enterprises, such as U.S. News, Princeton Review, and Washington Monthly that do not have conceptually- or methodologically-rich tools. Leaving the measurement of educational quality to corporate enterprises causes many unintended consequences for both institutions and the public at large. These unintended consequences are changing the very nature of colleges and universities, with a focus on *more* and *faster* education rather than *better quality* education (Espeland & Sauder, 2007; Espinosa et al., 2014; Rhoades & Slaughter, 2004). These unintended consequences emphasize research, prestige, and enrollment while pulling away from the educational core of institutions—namely teaching and learning—and perpetuate an elitism of higher education institutions through assessments based on resources and reputation (O'Meara, 2007).

Second, with regard to conceptual frameworks on educational quality and methods to measure quality, *we can't let the perfect be the enemy of the good, but we also can't settle*. Gauging the educational quality of a multiversity is an intensely difficult task, with multiple disciplines, often thousands or tens of thousands of diverse students, in vastly different kinds of institutions. Gauging the educational quality of an entire higher educational system is an even more difficult task. Additionally, assessing educational quality involves measuring illusive terms, such as student learning, teaching effectiveness, academic rigor, intercultural effort, and effective educational experiences (Dowd et al., 2011; Neumann 2014; Rhodes, 2012). To assess the educational quality of colleges and universities, we must rely on multiple methods or mixed methods, strategically chosen to match the objectives of assessment and theory of action (Campbell & Cabrera, 2014; Ewell, 2008; Porter, 2011, 2013; Rhodes, 2010, 2012). The following are additional techniques that could be explored, and this is not an exhaustive list: data mining/learning analytics, syllabus analysis, curriculum analysis, experience sampling method, visual sociology, e-portfolios, teacher/classroom observation, school inspection model, networks models, subject matter GRE, teacher evaluations, analyzing student grades, and analyzing student assignments. A combination of these methods should be tested for their applicability, practicality, and usefulness to illuminate educational quality of colleges and universities for public consumption: "no single method can do it all" (Ewell, p. 14).

While some scholars have dichotomized methods into two groups: comprehensive methodological approaches for formative assessment (improvement) and single, quantitative approaches for summative assessment (accountability), this is a limiting dichotomy. With regard to using more comprehensive measures for benchmarking, Ewell (2008) stated, "there is no technical reason that less standardized assessment approaches cannot eventually do the same. Consortia of institutions, for example, are already attempting to develop cross-referenced performance tasks, writing assignments, and portfolio entries as part of such efforts as AAC&U's Liberal Education and America's Promise initiative. Systems of external examiners and the ongoing attempts to align subject standards under the Bologna Process in Europe represent alternative but equally practicable approaches (Adelman, 2008)" (p. 15). Porter (2011) made the argument that a single survey will no longer suffice: "the typical college student survey question has minimal validity and that our field requires an ambitious research program to reestablish the foundation of quantitative research on students" (p. 45).

There are indications that we are on the verge of breaking through to new conceptual and methodological territory for assessing college educational quality. Methodologically, technology via social networking, online learning, and MOOCs provides a new opportunity for data collection. Additionally, new theoretical tools are sprouting new assessments. Rhodes (2012) advocates for new methodological tools (i.e. e-portfolios) and frameworks (i.e. VALUE and DQP) to assess learning for transparency. In another example, a project that I have been leading, the College Educational Quality (CEQ) research project is another example of an early-phase multi-method research project, with a newly conceived assessment of quality at

the institution level (Campbell, Jimenez, & Ostrow, 2013). Initiated in 2012, the CEQ project aims to create alternative, innovative, and comprehensive measures of educational quality (academic rigor, teaching quality, and learning objectives) across institutions that could contribute to public understanding of college and university quality. The project (currently in early phases—but evolving) uses a combination of quantitative class observation, syllabus analysis, and student survey to measure educational quality at the institution level.[8]

Beyond these current projects, we need new depth in the conceptualizations of higher educational quality. As Harvey (2002) described, "External evaluation, in legitimating the status quo, fails to ask significant questions about the reality of the learning experience for students at a momentous historical juncture for post-compulsory education. Evaluators appear to be preoccupied with the method of evaluation, rather than the substance" (p. 245). Our field needs to continue to develop conceptual frameworks that look more deeply into the teaching and learning processes in different disciplines, with different learners, and different educators—investing more in understanding the learner, teachers, and subject matters of educational processes in college (Bensimon, 2007; Dowd et al., 2011; Neumann, 2014). Engagement matters, but engaged in what? About what? How? and with whom? These new frameworks could work hand in hand with new methods to answer important questions for the public understanding of higher education.

Though it may never be possible to find a way to accurately capture the educational experience for all students across institutions, providing more data, different kinds of data, and including different kinds of measures from within the field of higher education, could better illuminate the state of educational quality and allow the field of higher education a seat at the table for these discussions. By comprehensively entering the *public* discourse on college educational quality, rather than letting corporate interests write the story, our field has the ability to transform the "affront on higher education" into a deep understanding of the transformative power of higher education.

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[8]See http://tc.columbia.edu/ceq

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