



PALGRAVE ADVANCES IN
BEHAVIORAL ECONOMICS

Constructing a More Scientific Economics

John Tomer's Pluralistic and
Humanistic Economics

Edited by
Morris Altman

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Palgrave Advances in Behavioral Economics

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Morris Altman
Editor

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University of Dundee

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To John Tomer our dear friend and colleague

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Hugh Schwartz is a Yale Ph.D in Economics and taught in various universities in the USA and Latin America, most recently in the University of the Republic in Uruguay, but spent the largest part of his career with the Inter-American Development Bank in Washington. He has authored five books, four on Behavioral Economics, the last of which, a dissident tract, is *Producer and Organizational Decision-Making. Is Behavioral Economics Losing Its Way?*

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Introduction

Morris Altman 

1 INTRODUCTION

This book honours the memory of John Tomer, who passed away on 7 December 2019. We remember the multifaceted contributions of John. This book brings together the contributions of some of John's close friends and compatriots—many of whose approaches to behavioural economics differ from John's. But this celebration and acceptance of difference was core to John's approach to academic life.

Sadly, we are missing in this book some contributions from old friends who have since retired but played an important role in John's life. It is important to mention Charlotte Phelps, Emeritus Professor, at Temple University, who was involved with SABE from the very beginning and

Part of this introduction borrows from my introduction of the special issue of the *Journal of Behavioral Economic for Policy*, published in 2021 (<https://sab.economics.org/jbep/>).

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attended most Society for the Advancement of Behavioural Economics (SABE) meetings over four decades, and Bijou Lester Yang who was a long-time SABE treasurer from 1992 at a critical time in its history. And then there is Louis Levy-Garboua, a past president of SABE, now retired, from Université de Paris I and Paris School of Economics, Centre d'économie de la Sorbonne. Finally, I must mention Richard Hattwick, who created and was the founding editor of the *Journal of Behavioural Economics* (later, the *Journal of Socio-Economics*) in the early 1970s, who shared with John and others an open-minded and inclusive methodological approach to behavioural economics.

2 JOHN TOMER AND SABE AND BIG TENT THINKING

John was not only an innovative thinker, but he also played a vital organizational role in the development of behavioural economics. In so doing, he held a door wide open to both younger and older colleagues who thought outside of the mainstream box using whatever methodological approach was believed to be most appropriate. Disagreeing with John never meant being denigrated or 'disappeared.' It only meant being subject to unending and probing questions from John. Fundamentally, John was a pluralist in his approach to both scholarship and organization-building. This led to his early organizational work in the founding of the Society for the Advancement of Behavioural Economics in the early 1980s. Actually, SABE was founded in 1982 by John Tomer along with George Akerlof (Berkeley), Richard Curtin (Michigan), Roger Frantz (San Diego State), Shoshana Grossbard, (San Diego State), Thomas Juster (Michigan), Harvey Leibenstein (Harvard), Fred van Raaij (Erasmus, Rotterdam), Harold Shapiro (Michigan), and Herbert Simon (Carnegie-Mellon). SABE's first meeting, attended by John, was organized by Benny Gilad (Rutgers University), which was held in 1984 at Princeton University. This was followed by a SABE meeting organized by Shlomo Maital at Kibbutz Shefayim, Israel, in which John also participated.

Then, behavioural economics was, more than anything, a big tent concept, working to transform economics by introducing non-traditional concepts into economic narratives and also allowing for both mathematical and non-mathematical approaches to theorizing. This followed from the early contributions of Herbert Simon to the development of

behavioural economics as a more enriched approach to economic analysis, counterposed to the rather narrow neoclassical framework as it had developed into the second half of the twentieth century. This early version of behavioural economics was very much open and embracing of a multiplicity of disciplinary perspectives. But John was also interested in social justice and the capacity of economics contributing to improving all of our lives. Economics, for John, was not simply about a better economics toolbox, but rather an enriched toolbox that could contribute towards improving social and individual well-being. This led him to his long-standing involvement with the Association for Social Economics, where social justice concerns and the contribution of economics to these are of preminent importance. And, just about every year John would be presenting a paper at the Association for Social Economics meetings which took place under the auspices of the Allied Social Association Meeting (ASSA).

On a personal note, John was also a dear friend. I've known him since 1988. I first met John during an impressive Advancement of Behavioural Economics (SABE) meeting in San Diego organized by Roger Frantz. Roger invited to this SABE meeting when we were attending a workshop honouring the contributions of Harvey Leibenstein at the Rockefeller Foundation Bellagio Center in Lake Como in Northern Italy. At that time, I actually never hear of SABE. And, I was more focused on mainstream organizations. So, the Bellagio meeting and being introduced to SABE was a pivotal moment early on in my career. When attending the San Diego meeting, I'd only just read John's newly published, *Organizational Capital: The Path to Higher Productivity and Well-being*. At this time, I could only say hi and ask a few questions about his research which overlapped with my own. He was quite busy fielding questions.

3 THE DEATH AND RE-BIRTH OF SABE

Soon after the 1988 meeting, SABE was folded into the newly formed Society for the Advancement of Socio-Economics (SASE) headed by sociologist Amitai Etzioni. But economics was lost in the overwhelmingly sociological universe that was largely antithetical to economics as a discipline. Even the open-tent SABE had difficulties finding a true home in SASE. Fundamentally, John was an economist who saw the importance of economics as discipline, but a discipline that had become increasingly short-sighted and small-minded.

There was a need for a change. And, John and I became good friends soon after a meeting to revive the newly defunct SABE which took place during an American Economic Association meeting in New Orleans, January 1992, organized by John and Shlomo Maital.

John became the first and long serving President of SABE. Shlomo and I became the co-editors of our newsletter and part of the SABE executive. Li Way Lee (Secretary) and Bijou Lester Yang (Treasurer and future SABE President), who participated in this foundational meeting, also became vital members of this 'born again' SABE executive team. In the 1993, John organized the SABE 'revival' meeting in Rensselaerville, New York.

Under his leadership, SABE grew from about 30 members in its newly reconstituted form to well over 400 members. SABE was and continues to be made up largely of economists who are largely attracted to its open-tent esprit, championed by John. John participated in just about every SABE and joint SABE/International Association for Research in Economic Psychology (IAREP) meeting since 1992. IAREP became an increasingly important partner of SABE, with the latter centred in the UK and the European sub-continent and largely comprising of non-economists, mainly economic psychologists with a rather strong representation of economists. SABE, once again with the strong support of John, soon began a tradition of holding meetings in both North America and Europe. John and I would always hook up and hang out during these meetings, very often with his wife Doris and my wife Louise and daughter Hannah. This was all part of a mission to establish and maintain a rigorous, open-minded academic organization devoted to behavioural economics.

4 THE LIFE AND TIMES OF JOHN TOMER IN A FEW PARAGRAPHS

I should say that John and I disagreed on many methodological and even organizational issues. But what was so important about John was his open-mindedness, his imbued sense of methodological pluralism, his view that what counts is the person and her or his research not where this person came from or which university they graduated from. So, being open to disagreement and debate was natural to John. And, this perspective is fundamentally important to SABE. This is what provides SABE with its distinctiveness.

John earned his doctorate in 1973 at Rutgers University. His thesis was entitled, “Management Consulting for Private Enterprise: A Theoretical and Empirical Analysis of the Contribution of Management Consultants to Economic Growth in the United States.” And, this underpinned his lifelong interest in how firms actually operated and how real-world decision-makers functioned inside of the firm. John’s thesis supervisor was Professor Robert J. Alexander who was a political economist, a social activist, and a trade unionist, with a passionate interest in the human condition. John’s initial points of scholarly focus were: monetary theory, public finance, labour and human resources, econometrics, and the economics of technological change.

John spent most of his career in Manhattan College, located in the Bronx, New York (1983–2012), until his retirement. But John and his family (his wife Doris and sons, Russell and Jeffrey) maintained their residence in Troy, New York, the location of Rensselaer Polytechnic Institute where John taught from 1974 to 1981. In spite of being in a more teaching-intensive university, John remained a heavy-duty researcher and publisher, making significant contributions, especially in behavioural and social economics. And, Manhattan College provided John with the support required to pursue his research. He published five books and around sixty peer-reviewed journal articles and book chapters. And he was still actively working on research projects at the time of his death.

John was born on 11 July 1942, and passed away on 7 December 2019. This was only three months after we met for the last time during his last SABE meeting that took place in Dublin, Ireland. He made this trip in spite of being quite ill with cancer. He was determined to once again meet with his friends and colleagues, make new acquaintances, attend sessions (and ask questions, of course), and present a research paper, as he always would during a conference. John would not let the cancer get the better of him until the very end. And, even in Dublin, he exuded more energy than many of his much younger colleagues. John was only able to make it this time around with his wife Doris, who accompanied him on so many of his research trips. We all hung out along with my daughter, Hannah, now an economist in her own right, who attended most of John’s presentations during SABE and IAREP meetings since her birth, 26 years ago.

The last paper that John presented was, “Why Buddhist economics Is needed: Overcoming large scale biophysical and socio-economic dysfunctions.” This was an area that he was interested in for decades and also informed much of his thinking. We promised to meet up again during

the forthcoming American Economics Association meetings in January, another tradition that began in the 1990s. But this was not meant to be. But John's legacy lives on through his significant organizational contributions and his many contributions to research which are celebrated in this special issue. For your interest, in the Appendix, there is John's appreciated CV, with the list his contributions to the literature.

5 CONTRIBUTIONS TO THE TOMER BOOK

The contributions to this volume touch on many topics. On a more personal note, Shlomo Maital's "Behavioral Economics and the Birth (and Rebirth) of SABE: The Legacy of John Tomer" provides important insights on the evolution of behavioural economics and SABE and John's and his own role in this. This overlaps with some of the points that I address above. Shlomo was one of the pioneers of SABE and critical to its re-birth.

The general discussion of the life and times of John Tomer is followed by chapters that are inspired by John's efforts to introduce humane and human factors (real-world economic actors with real-world characteristics) to economic analysis. In the chapter, "Tomer's Humanistic Hand," Li Way Lee speaks to the interaction between Tomer's 'humanistic hand' and the more calculating modelling of traditional economics, to locate means to reduce current socioeconomic dysfunctions. Lee argues that this requires an understanding of the interaction between the use of the 'heart' and 'head' (more calculating neoclassical) for economic analysis and policy. He favours a more balanced application of heart and head to contribute to a more humane society. Gary Lynne (a long-time former Secretary of SABE) and Phyllis Saarinen also discuss socioeconomic dysfunction in their chapter, "Metaeconomic Solutions to Dysfunctional Water Markets." They critique the still dominant assumption that private property and narrow self-interested behave is the *only* way of achieving economic efficiency in water markets. They argue that economic efficiency can be better achieved by balancing self and other-interest, the market, and government. This approach will avoid dysfunction in water markets. In this chapter, "Inclusive Capitalism," Robert Ashford (a Professor of Law and a long-time friend of John), argues for a different analytical framework, wherein a broader distribution of capital acquisition with future capital earnings will yield greater growth, a more egalitarian distribution, and greater incentives to employ labour. Here, one has a more

egalitarian distribution of income without a redistribution of income. John Davis discusses how John Tomer's multidimensional and interdisciplinary perspective on human capital formation can contribute to a better understanding of human development and to the advancement of a more humane society, in his chapter, "John Tomer's Reconceptualization of the Concept of Human Capital." Of particular importance is the capacity of individuals to invest their human capital where this capacity is seriously wanting for large segments of the population. John Davis has been a leading scholar and activist in social economics and in the Association for Social Economics, which played an important role in John Tomer's academic and social life.

The theory of the firm played an important role in John scholarship, beginning with his doctoral dissertation. For John, how the firm was organized plays a determinant role in its productivity and in its contribution to worker and social well-being. Writing with Justin Ferguson and Cameron Xu, Mark Pingle, in their chapter, "John Tomer's Human Firm: How Behavioral Economics Has Helped Us Understand the Firm," examines how extending the neoclassical model to incorporate human factors enriches our understanding of the determinants of a firm's productivity. These typically intangible variables can not only positively affect productivity but also the well-being of all firm members and society as a whole. Mark Pringle has been a long-standing member of SABE and served as a President of SABE. He was actually recruited by John Tomer after Mark got John involved in a *Journal of Economic Behavior and Organisation* initiative some decades ago. In my chapter, "Community Embeddedness, Consumer Voice, Corporate Social Responsibility," I build upon Tomer's theoretical perspectives on the human and more humane firm. I model why there is no market imperative for firms to become more humane even if they are more productive, but how effective consumer voice, community embeddedness, knowledge of the profitability of being more humane, and fear of government intervention incentivize the development of a more humane firm and society. In "John Tomer, X-Efficiency Theory, and Behavioral Economics," Roger Frantz, a long-time colleague of John and a leading player in SABE and x-efficiency theory scholar, critically discusses John's application of x-efficiency theory to his modelling of the firm and how this fits into Harvey Leibenstein's pioneering development of x-efficiency theory and the theory of the firm.

The next two chapters speak to an area of research and public concern that was very high on John's priority list: consumer behaviour and healthy

eating and living. Gerrit Antonides' chapter, "The Behavioral Economics of Healthy and Sustainable Food Consumption," surveys the literature on the determinants of consumer choice with regard to healthy versus relatively unhealthy food. Poor choices can result in obesity and related health problems, which was very much a concern of John Tomer. Gerrit investigates non-price determinants of consumer food choice behaviour such as social norms, defaults, and emotional appeals as important means of shifting consumer choice away from unhealthy foods. Gerrit was one of the leading voices of the born again SABE and played a critical role in forging a vibrant partnership between SABE and IAREP. He also served as a President of SABE and was a good friend of John. In the chapter, "Obesity, Wellbeing, Freedom of Choice, and Institutional Change," Hannah Josepha Rachel Altman and I build on some of John's insights on the determinants of unhealthy eating and obesity to extend the price-based homogenous agent model of consumer choice for the inputs for healthy living such as food and exercise. We argue that relative prices and income are important here as are income cohorts. But we also argue that variables such as information, access to healthy foods, and safe and affordable space for exercise are key determinants of health living. More important than the state nudging consumers into behaving in particular fashion, we argue that it is best to improve individuals' decision-making environments and capabilities.

Two chapters are devoted to the economics of the household, broadly speaking. In "Assessing the New Home Economics with 2020 Vision," Shoshana Grossbard and Andrea Beller review the literature on the New Home Economics (NHE), pioneered by Gary Becker and Jacob Mincer, to which Shoshana, whose PhD dissertation of was supervised by Becker, made important contributions. They also attempt to evaluate the success of the NHE project based on the criteria set out in this chapter. Although the NHE is very much in the tradition of neoclassical economics (price theory), it adds a vital sociological dimension, taking us beyond both price theory and psychological variables. Shoshana played a foundational role in SABE from its very beginnings, was a member of the SABE executive, organized SABE meetings, attended an abundance of SABE and SABE/IAREP meetings, and remained, throughout, a good friend of John. Art Goldsmith, in his chapter, "Intergenerational Inequality and Parenting: Making Room for the Parent-Child Relationship," builds on John Tomer's insights on the importance of the quality of child-parent relationship for the child's current and future human capital formation

and, therefore, for her or his socioeconomic well-being as an adult. This represents a critique of Gary Becker/James Heckman focus on time and resources as being of penultimate importance, arguing for more attention being devoted to the significance of the non-material ‘softer’ inputs (in addition to material considerations) into a child’s ongoing human capital formation. Art was an early SABE participant serving on its executive with John Tomer and organizing one its important annual meetings on the campus of Washington and Lee University in Lexington, Virginia.

The final two chapters of this book are explicitly devoted to public policy and methodology. A major concern of John Tomer was how behavioural economics, especially its more pluralist variants, can impact on public policy and the methodology underlying economic theory. Shlomo Maital in his chapter, “Crossing the Valley of Death Between Academic Research and Effective Policy: The Role of Behavioral Economics,” addresses the issue of why have economist found it difficult to have their research findings better understood by the public and implemented into policy. He argues that this is in part due to the economics profession rejection of the behavioural approach championed by Marshall and its adoption of strict mathematical approach of Walras whilst also rejecting ethical and moral considerations from its corpus. Maital is more hopeful with the more recent adoption of behaviouralist approach to economic analyses along with the rise in significance of randomized controlled experiments as an empirical foundation of behaviouralist modelling. In “Behavioral Economics, Public Policy and Basic Decision-Making,” Hugh Schwartz argues for a more nuanced approach to decision-making, breaking away for the simplifying assumption of the average individual as the ideal guide for understanding the determinants of decision-making and as a guide for good or successful decision-making. Schwartz argues that this approach ignores the vital importance of understanding how the most successful industry leaders behave, and how they engage in decision-making. He outlines how to incorporate an understanding of these outliers to generate a better overall understanding of the behaviour of organizations, especially of winning organization. This more enriched modelling can contribute to more enlightened policy in this domain.

APPENDIX

Images



John Tomer 2019



From left to right: Charlotte Phelps, Gerrit Antonides, John Tomer, Morris Altman, Simon James



2013. From left to right, top row: David Leiser, Gerrit Antonides, Morris Altman, Stephen Lea, Mark Pingle, John Tomer, Bijou Lester Yang, Fred Van Raaij, Ofer Azar, Tadeusz Tyszka
Bottom Row: Reza Kheirandish, Shabnam Mousavi

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PART I

John Tomer and The Society
for the Advancement of Behavioural
Economics



Behavioral Economics and the Birth (and Rebirth) of SABE: The Legacy of John Tomer

Shlomo Maital

1 INTRODUCTION

This is a personal, subjective, and hopefully accurate description of my role and John Tomer's role in the evolution of behavioral economics and in SABE's birth and history. It is based in part on material provided by Ben Gilad.¹ It includes some personal recollections of John Tomer, as he communicated them to me, now published for the first time. John's role, as will be seen below, was crucial, especially in SABE's return from the dead.

Subjective accounts like this one run two serious risks. The first is the lurking suspicion that the author intentionally enhances his role and contributions, owing to *ego balloonimus* (inflated ego), a common

¹ Partly from a letter by Ben Gilad to John Tomer, dated Jan. 6, 1983.

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syndrome that afflicts scholars. The second is the likelihood that the subjective history is unintentionally distorted, owing to faulty memory. I plead guilty to having a very poor memory and have no written notes from the 1980 to 1982 period. But I plead not guilty to “ego”—though many who know me might disagree.

2 CHANGING FORTUNES AND INTERDISCIPLINARITY

I had the good fortune to meet and marry Sharone Levow, an undergraduate at Douglass College (the sister college of Rutgers), while I was a graduate student in economics at Princeton. After we married on June 25, 1967, in Atlantic City, we left for Israel the next day to make our home there. Sharone studied psychology as an undergraduate, and child-clinical psychology as a graduate student, at Tel Aviv Univ.

My research specialties at Princeton were public finance and history of economic thought. But I quickly found a new interest, thanks to conversations with my wife. This was fortunate, since I showed no talent whatsoever in conventional economic research and in mathematical modeling. I learned that Sharone knew far more about the underlying causes and nature of economic behavior than I did, thanks to her training in psychology. We began to write joint papers.

Sharone’s M.A. thesis had been on deferred gratification among teenagers. We decided to write about interest rates. The underlying psychology of interest is the concept of “ability to defer gratification”. While economists like Bohm-Bawerk and Irving Fisher had written about deferred gratification, it was social psychologists like Walter Mischel and Albert Bandura who truly understood this phenomenon. In her research, Sharone had done “interest-rate” experiments, offering subjects an immediate small reward or a larger deferred one. I liked the methodology that investigated people directly, rather than manipulated mathematical symbols or crunched second-hand numbers. It always seemed to me that the major contribution of psychology to economics is not so much the theory of behavior, but the methodology of investigating behavior by observing it directly.

3 ECONOMICS AND PSYCHOLOGY

Our first published paper linking psychology and economics was: Sharone Maital and Shlomo Maital, “Time preference, delay of gratification and

the intergenerational transmission of economic inequality”, in Orley Ashenfelter and Wallace Oates, editors, *Essays in Labor Market Analysis* (Halsted Press/John Wiley & Sons, New York: 1978, 179–199).

In this paper, we made the argument that because ability to defer gratification is behavior in part learned by children from parents, then it may be a mechanism for the social transmission of inequality. Lower income groups, because of circumstance and environment, have lower ability to defer gratification (expressed as higher subjective interest rates) and thus engage in fewer income-building behaviors (saving, education, etc.). Poverty can thus be “learned” and transmitted across generations. We constructed a hypothesis in which market interest rates did *not* come into equality with subjective interest rates, owing to market failure, so that individuals had subjective interest rates that differed widely.²

This paper was especially meaningful to us; it was written for a volume that I had initiated, edited by my thesis advisor Prof. Wally Oates and Princeton classmate Orley Ashenfelter, in memory of my closest friend, Yochanan (Peter) Comay, who died on active duty as an artillery officer in the Golan Heights following the Yom Kippur War in 1973.

Sharone and I continued to speak and to write about behavioral aspects of economics. I knew I had zero talent for the mathematical gyrations that then dominated economic theory, but greatly enjoyed thinking about real people and how they made decision choices. I found a soul mate in Professor Harvey Leibenstein, whom I met while I was on sabbatical leave at Princeton U., in 1977–1980, and Harvey was a visitor at the Institute for Advanced Study in Princeton in 1979, on leave from Harvard.

4 HARVEY LEIBENSTEIN AND BEHAVIORAL ECONOMICS

Harvey, a rebel and loner, wrote effectively in plain language about phenomena his keen eye observed. I recall giving a seminar at Princeton in 1979 on “Inflation as Prisoner’s Dilemma”, a behavioral model of how inflation begins and accelerates.³ It was received by the Princeton

² When we submitted a paper on this theme to the *American Economic Review*, it was rejected out of hand by the editor, without sending it for review; he claimed that “the poor are experts at deferring gratification, they do it all the time”—a facile comment of a sort we encountered later, very often.

³ Shlomo Maital and Yael Benjamini, “Inflation as prisoner’s dilemma”, *Journal of PostKeynesian Economics*, Summer 1980, 459–481.

economists with enormous indifference—a reaction to which I had become accustomed in giving seminars on economic psychology. But Harvey, who was in the audience, came up to me afterward and praised my ideas warmly, and mentioned some of his own similar work. That was our first meeting. Sharone and I became fast friends with Harvey and his wife Marge. A decade later, after Harvey and Marge were involved in a terrible car accident, I recall long conversations with Harvey, as part of our effort to give him cognitive stimulation. These conversations led to two joint papers—the last ones Harvey was to publish.⁴

John Tomer, too, has a “Leibenstein” connection. He recalls:

In the late 1970s, I began to discover the importance of Leibenstein's writings, especially his X-efficiency theory. In particular, I found his Journal of Economic Literature article, “A Branch of Economics is Missing: Micro-Micro Theory.” This piece stimulated me to write “Worker Motivation: A Neglected Element in Micro-Micro Theory” which was published in the Journal of Economic Issues in June 1981. My article attempted to marry X-efficiency theory with industrial psychology related to work motivation. Later, I sent this article to Leibenstein. He seemed to like it, and he invited me to visit him at his Harvard office. Thus, I became one of a number of behavioral economists who looked to Leibenstein for intellectual leadership and who had an acquaintance with him. Even during my radical period, my strongest interest was in the higher aspect of human nature and motivation. This led me to Abraham Maslow and other humanistic psychologists and later to the Eastern spiritual traditions. A strong interest of mine has been to integrate economic theory with these other types of knowledge that have been alien territory for economists.

5 PSYCHOLOGICAL FOUNDATIONS OF BEHAVIORAL ECONOMICS

While on sabbatical at Princeton, I met with the legendary Martin Kessler, President of Basic Books—a publisher of landmark works in social

⁴ Harvey Leibenstein and Shlomo Maital. "Empirical Estimates and Partitioning of X-Inefficiency: A Data Envelopment Approach". American Economics Association, Papers and Proceedings, May 1992; and Harvey Leibenstein and Shlomo Maital. "Organizational Foundations of X-Inefficiency". *Journal of Economic Behavior and Organization*: vol. 22, 1993, pp. 251–268.

science—and with his encouragement (and a cherished contract) began a book on behavioral economics. The result was:

Shlomo Maital, Minds, Markets and Money: Psychological Foundations of Economic Behavior, Basic Books: New York, 1982, x + 310 pages (hardcover and paperback).

The book was written for ordinary people, not for scholars, and tried to explain a wide variety of economic behaviors, using concepts of psychology.

I recall typing it on an IBM Selectric, which did not yet have the wonderful white-out correction key; so I used correction tape. I especially thanked my high school touch-typing teacher. In my career, my most productive skill has been not my thinking, originality, or persistence, but my ability to type 80 words per minute without errors, a skill honed typing invoices during summer jobs in Saskatchewan.

Martin Kessler was my editor. He held me to high writing standards. I remember churning out one jargon-filled chapter quickly, after missing a deadline and getting Martin's stern reprobation: "THAT's not how you write. THAT's not you!" I always hear that voice whenever a phrase like "non-convexity in preferences leads to a corner solution" slips onto the page I am writing....

Minds, Markets and Money was favorably reviewed in 1982 in such publications as The New York Times (by Peter Passell), Wall Street Journal, Barron's, Business Week, New Republic, Newsday, and Contemporary Psychology. While I did the actual writing, many of the ideas came from my wife Sharone. I deeply regret to this day that I did not insist on making her a co-author.

John Tomer read the Business Week review and was influenced by it. Here are his recollections:

My path to behavioral economics was different from Shlomo's. There is, however, one notable personal similarity between us. On July 15, 1967, I met Doris FitzGerald, like Shlomo's wife a Douglass College student, and several days after her graduation, on June 1, 1968, we married near New Brunswick, NJ where I was a graduate student at Rutgers University. Although I liked learning about economic theory and had already served a couple of years in the U.S. Army, graduate school along with the general milieu of the late 1960s with its antiwar protests and liberation movements brought out the rebel in me. My humanistic tendency led me to the radical left and to become an active member of the Union for Radical

Political Economics. At this time, I was interested in exposing the inhumane aspects of capitalism and developing ideas for alternatives (socialist and nonsocialist) to the prevailing order. By the mid 1970s, after receiving my Ph.D., serving a two year stint with the federal government (Treasury Department, Office of Revenue Sharing), and starting my teaching career at Rensselaer Polytechnic Institute, my humanism and desire to reform economics and the economy were still strong, but I was finding that the too often vulgar Marxist critiques of Union of Radical Political Economy (URPE) were lacking. My research in the late 1970s and my conference participation reflected my search for a nonmainstream but nonradical (in the political economic sense) alternative. Organizationally, I started to participate in conference sessions sponsored by the Association for Social Economics and the Association for Evolutionary Economics (ASE). Especially in ASE, I found friends and a congenial atmosphere but there was something awkward about my fit with them; it was not quite the “home” I was looking for. The review of Shlomo’s book, Minds, Markets, & Money in Business Week (June 21, 1982) happened to catch my eye. I sensed from the review that Shlomo’s concerns were the same as mine and that he was a fellow traveler. I quickly bought a copy of his book and contacted him. He, at that time, was apparently organizing, with the help of Ben Gilad, a Rutgers (Newark) professor, a meeting to explore the establishment of a behavioral economic association. Shlomo passed my name along to Ben, and Ben invited me to the significant organizational meeting that led to the founding of SABE (a meeting which Shlomo for good reason did not attend).⁵

* * *

In 1984, Sharone and I partly remedied my failure to include her as co-author in the 1982 book. We wrote a book together on behavioral macroeconomics: Shlomo Maital and Sharone L. Maital, Economic Games People Play. Basic Books: New York, 1984, xii + 339 pages.

This book was reviewed in the Wall Street Journal by Peter Passel’s former wife, Susan Lee. Peter and Susan had parted, partly because of disagreements arising from *their* joint book, on American economic history. Susan wrote a caustic negative review. I wrote a letter to the editor, saying that I didn’t mind the bad review, because “books are like courtesans – they much prefer notoriety to obscurity”. Susan sent me a

⁵ The birth of our son, Yochai, on December 23, 1982.

note, saying if she had known who I was, she would have written a more favorable review. So much for reviewer objectivity!

Sharone and I both suffered from “tenure persecution”: In every single one of my promotion committees, from lecturer, to senior lecturer, to associate, to full professor, it was said that our joint papers were really the work of my wife, who was a psychologist, and not mine. Partly as a result—and as a result of the esoteric nature of behavioral economics—I flunked every single promotion [including tenure] on the first attempt. Facing my desk at Technion, I have a letter from a former Dean, telling me why I am utterly unqualified to be in Academe. In Sharone’s promotion committees, the same thing was said—only our joint work was credited solely to me.

Tenure struggles seemed to plague behavioral economists, at least in the early days. John Tomer recalls:

Although I made it my business to attend every SABE conference, I did not at first take an active interest in the organizational aspect of SABE. Probably the reason for this was that I was too consumed with overcoming my career difficulties. My first attempt at gaining tenure at R.P.I. (Rensselaer Polytechnic Institute) failed, and my second attempt nearly failed. Nevertheless, I finally was tenured at Manhattan College in 1986. The following year my first book Organizational Capital (Praeger 1987) was published. There were now some signs I was becoming a bona fide behavioral economist. After that I began to take a greater interest in participating organizationally in SABE.

In raising four children together, Sharone and I shared the bonds of parenthood; but we also had the added bond of a joint intellectual interest. I recall someone saying once of James Tobin that as a graduate student, he decided he needed to know econometrics and so married an econometrician. I married Sharone because she was beautiful and intelligent and shared my goal of living in Israel—but our ability to relate to one another as scholars as well as partners and parents was a very special gift to us.

I believe Economic Games could fairly be regarded as a forerunner of later work, far more sophisticated theoretically and empirically, that showed how psychology and expectations played a key role in the inflationary process—a model that came to be known as “rational expectations”. In co-authoring this book, I owe an intellectual debt not only

to my wife, but also to my country, Israel. Israel suffered hyperinflation during the period 1977–1985. By living through this period—which personally cost me thousands of dollars lost through dumb investments—I came to understand first-hand the psychological dynamics of inflation. In general, Israel has been a truly wonderful place to do research on economics—there are few economic phenomena that this little country has NOT generated, in a highly compressed period of time.

Sharone and I collaborated as well in writing a comprehensive survey on how psychology and economics were linked: Sharone Maital and Shlomo Maital, “Psychology and Economics”. In Marc L Bornstein, editor, *Crosscurrents in Contemporary Psychology*, Vol. 3: Psychology and Its Allied Disciplines. (Erlbaum: Hillsdale, NJ., 1984, 55–88).

The editor, Marc Bornstein, headed a multi-country research project on mother–child interaction at the National Institute of Child Development and Health in Washington DC. Sharone was responsible for the Israeli aspect, and videotaped mothers and their children, for city mothers as well as kibbutz mothers and caregivers. I was struck by the powerful methodology of direct observation, in contrast to the sterile theorizing of economists, who bragged (like the great John Kenneth Galbraith) that “to the best of my knowledge, I have never been inside a working factory”. That did not keep the brilliant Galbraith from writing *The New Industrial State* (1967).

Many years later, I joined with a social anthropologist and ethnographer to teach managers how to *really* observe people closely, with a view to innovating, using the participant-observer technique. Though he did not call it that, this was precisely what Harvey Leibenstein did so well. He traveled the world with Marge, made penetrating observations, and then wrote them up in clear language. Few are aware, for instance, that both the term “principal-agent” and the basic idea behind it originated with Harvey; the Industrial Organization and game theory literature has never credited him with this, a true injustice.

6 THE EARLY ORIGINS OF SABE

I do not recall exactly when or where Ben Gilad and I first discussed the idea of starting a scholarly society devoted to behavioral economics. Ben, an Israeli, had an undergraduate degree in psychology and had worked for the Israeli Police as a psychologist before doing his Ph.D. in economics. We decided to take advantage of the fact that a group of people interested

in starting such a new society would be attending the ASSA meetings in New York City in December 1982. Martin Kessler, who headed Basic Books, offered us his conference room, at Harper's (the mother company of Basic Books) on 10 E. 52nd St. in New York City. Our third child, and second son, Yochai, was born on December 23, 1982, and I chose to stay home to attend this birth rather than traveling to SABE's founding meeting. [Our two older children were born in 1969 and 1972, a time when fathers paced outside in the waiting room. Being present at Yochai's birth was an earth-shaking experience, one I will never forget; but I regret not being present at SABE's inaugural meeting.]

There were 14 people attending the founding meeting of SABE, on December 29, 1982.⁶ They were: John Kagel (Houston University); Hersh Shefrin (Univ. of Santa Clara); Richard Hattwick (Journal of Behavioral Economics); Randy Filer (Brandeis Univ.); James Morgan (U. of Michigan); John Tomer (Union College); Gordon Winston (Williams College); Richard Thaler (Cornell Univ.); Peter Loeb, Stan Kaish, and Ben Gilad (Rutgers); Ruth Mack (Institute for Public Administration); Howard Rachlin (SUNY at Stony Brook); and Jay Schmiedeskamp (Gallup Org., Princeton). According to Ben Gilad, "the discussion at the meeting concentrated on two points: First, the scope of behavioral economics, and second, the need for a formal organization".

"No consensus was reached on either point", Gilad notes, "with some participants arguing for the inclusion of a wide spectrum of behavioral-social sciences...and some favoring the narrowing of the scope of only the psychological aspects of decision-making". This debate was ultimately resolved in SABE, in favor of the broadest possible umbrella covering many disciplines. In this, SABE differs from its sister organization in Europe, IAREP, which focuses on economic psychology.

There was also disagreement on the need for a formal organization. It was agreed to send out a mailing to assess potential interest in a behavioral economics conference. Gilad and Schmiedeskamp handled this mailing. Richard Hattwick agreed in principle to publish the proceedings of such a conference in the Journal of Behavioral Economics. I asked

⁶ Shoshana Grossbard-Shechtman recalls that Martin Kessler, who at the time headed Basic Books, offered us his conference room at 10 E. 52nd St., New York City, at Harper's headquarters (the mother company of Basic Books). I recall that our third child, and second son, Yochai, was born on December 23, 1982, so I chose to stay home in Israel to attend his birth rather than traveling to SABE's founding meeting.

friends at Princeton's Woodrow Wilson School to provide a venue. Ben Gilad organized this conference, held on May 22–23, 1984; among the participants were Harvey Leibenstein, Amos Tversky, Daniel Kahneman, Fred van Raaij, Thomas Schelling, Richard Coughlin, Kelvin Lancaster, Orley Ashenfelter, Sidney Winter, Richard Thaler, Karl-Erik Warneryd, Shoshana Grossbard-Shechtman, John Tomer, and Shlomo Maital. This conference, I believe, marks the formal birth of SABE.

Paul Albanese, then at Middlebury College, agreed to host SABE's second meeting, at Middlebury. It was held on October 25–28, 1985. I recall jogging through the beautiful Vermont forests, with brilliant fall foliage. At Middlebury, we decided to hold the next SABE meeting in Israel. I organized the third SABE conference at Kibbutz Shefayim, north of Tel Aviv, on July 9–11, 1986. Like all SABE conferences, this one was run on a shoestring, with 70 participants, including 35 from abroad. Roger Frantz, a disciple of Harvey Leibenstein, organized SABE's fourth meeting, at San Diego State University, June 15–17, 1988.

7 DEATH AND REBIRTH OF SABE

SABE then had its “B” surgically removed and replaced by an “S”. Amitai Etzioni established the Society for Advancement of Socio-Economics (SASE) and persuaded Richard Hattwick to convert his *Journal of Behavioral Economics* into the *Journal of Socio-Economics*. With his formidable organizational skills, Etzioni quickly built SASE into a large society with many members. For more than two years, SABE became moribund and dormant.

In 1990, I was on sabbatical leave at Brookings Institution in Washington. John Tomer, also on leave, and I met at the ASSA meetings on December 29, along with several other SABE affiliates. John said he felt that there was a real need for SABE, and that its purpose and vision were quite different from those of SASE. *It was John's gentle but persistent suggestion that led to SABE's rebirth.*

A year later, on January 4, 1992, at the ASSA meetings in New Orleans, SABE was officially re-established. Maital contacted IIRA (International Industrial Relations Association), through Professor Noah Meltz, and got them to agree to allow SABE to use their Poster Session facilities without charge. SABE held a Poster Session at the ASSA meetings, with about seven poster-papers presented—an idea imported from psychology. Poster sessions have since been a feature at other SABE conferences, with

IRRA generously offering their facility. John Tomer was elected President and was asked to organize the next independent SABE conference. It was held in Rensselaerville, in upstate New York, on August 13–15, 1993. Shortly thereafter, a SABE newsletter was initiated, edited by Morris Altman. Li Way Lee, of Wayne State Univ., for years used his office to process and mail out the newsletters to SABE members.

SABE Conferences: SABE's Board believed that SABE did not have sufficient resources to have an independent conference every year. It was decided to have a biennial SABE conference and join with other like-minded organizations in alternate years. In July 1994, SABE members participated in the Rotterdam meetings of IAREP (International Association for Research in Economic Psychology) and then in a large SASE conference held in Paris.

On August 16–18, 1995, Shlomo Maital and Noah Meltz organized a SABE conference at Woodsworth College, University of Toronto; Meltz at the time was President of the college. A guest speaker was Lloyd Axworthy, a Cabinet Minister who later became Canada's Foreign Minister. The following year, John Tomer organized five SABE sessions at the SASE Conference in Geneva, Switzerland, July 12–14, 1996.

SABE's next conference was organized by Art Goldsmith, together with Carl Kaiser, at Washington, and Lee University in Lexington, VA., on June 20–22, 1997. The SABE sessions at the July 13–16, 1998, SASE conference in Vienna were organized by Kishor Thanawala.

In 1999, Shoshana Grossbard-Shechtman, together with Chris Clague, organized a SABE conference at San Diego State University. Held on June 12–14, the theme was "Exploring the Reorientation of Economics". Shoshana edited a book based on the proceedings. The conference, and resulting book, showed the boundaries of economics are continually expanding, with a variety of paradigms from other social science disciplines illuminating and supplementing the way economists model behavior.

SABE joined with IAREP for its July 12–16, 2000, conference, held at the Schloss Weikersdorf Hotel in Baden, Austria. Morris Altman and Kishor Thanawala served as members of the organizing committee. A few days later, Tomer and Altman took part in a symposium on Behavioral Economics in the Economy of Transition at the University of Warsaw, organized by Univ. of Warsaw professor (and SABE member) Ewa Gućwa-Lesny.

The next SABE conference was co-chaired by Hugh Schwarz and Shlomo Maital and was held at George Washington University, in Washington, DC. The theme: Applied Behavioral Economics: Can It Improve Decisions and Policies? *Is It Already Implicit in Successful Decision Making?* About 50 papers organized in some 16 sessions were presented.

8 SABE'S VISION

I vividly recall pulling a few chairs into a circle, at the Poster Session in New Orleans on January 4, 1992, and discussing with John Tomer, Morris Altman, and others our vision for a revived SABE.

Together, we enunciated the following: SABE would be a kinder, gentler organization; it would offer a sounding board for a wide variety of ideas and would treat all new ideas with respect and consideration. All of us in that room had experienced spiteful and narrow-minded behavior in other academic organizations, where ideas that reached beyond the current mainstream line of thinking met violent rejection. We decided that SABE would be different.

I believe that over the years, this humane vision has been more or less well implemented. I also admit that there has been a certain cost. Some of the scholars who helped found SABE later left us and formed their own groups. (The behavioral finance group is an example.) One reason, I believe, was SABE's principle that we would welcome papers by scholars from lesser-known institutions, whose scholarly standards were less than rigorous. On the tradeoff curve between scholarly excellence and selection, and intellectual openness, we chose the latter. I'm very happy we did, regret losing scholars because of it, but fervently hope and believe SABE continues this policy and even strengthens it.

9 CONCLUSION

In academic life, the knives wielded by colleagues are often very sharp and are used without mercy. This is perhaps as it should be, if we are to take the business of exploring new ideas seriously, and subject those who propose those ideas to the evolutionary struggle for survival. The result can be a system in which humanity, decency, and empathy are banished.

This is why my friend John Tomer was beloved. In Yiddish, John is best described by the word *mentsch*—a decent, honorable, kind, gentle, and considerate human being. (The word derives from a German

word meaning human.) He impaired those qualities of humanity to the organization he loved, ran, and revived.

And that is how we will remember him.

PART II

A More Humane and Human Centric
Economic Analysis



Tomer's Humanistic Hand

Li Way Lee

1 INTRODUCTION

When we peek at the cloud that is neoclassical economics, we see a piercing ray of hope for more humanistic economic growth. On that growth path, we find Tomer steering us away from obesity, diabetes, depression, addiction, poverty, and other socioeconomic dysfunctions. Tomer's humanistic hand shows us that, while wealth makes us happy, there is more: justice, health, and nature matter, too.

When Tomer began to search for the humanistic hand many years ago, he was disappointed. He realized that, on the whole, humanity is not flourishing in our lives. He did get a glimpse of the humanistic hand in X-efficiency: the fact that we care for both efficiency and fairness in production. Still, we do not seem to be happier on the growth path. Our faces are fatter and paler; more of us are exhausted from running on the hedonic treadmill; and more ire we draw from Mother Nature. Where is the full humanistic hand, he asks? Tomer (2017) finds its DNAs in Buddhism, but he wants to bring it fully into the global economy.

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Let's help Tomer usher in the humanistic hand. In this chapter, I do a couple of things in preparation. First, I make a few sketches of "the humanistic hand": what it looks like. Second, I try to describe the socioeconomic circumstances that attract the humanistic hand.

2 SOCIOECONOMIC FUNCTIONING

Tomer sees people as constantly engaged with each other. He calls the engagement "socioeconomic functioning."

Here is a story of socioeconomic functioning. I own a diner. Right now, I am making dinner for Zoe (a social activity); Zoe will pay me \$20 (an economic activity). We do not know each other that well. All she knows about me is that I am the cook, and all I know about her is that she wants a burger in the next five minutes. Now I face a dilemma. As a cook, I can make many different burgers, from vegan ones to beef-and-cheese ones. The dilemma is that my heart and my head are telling me to do different burgers for Zoe. My heart tells me that I should persuade her to go for a vegan burger: It is healthy. But my head tells me to do a beef burger for her (Full disclosure: I make \$10 profit on a beef burger and only \$2 profit on a vegan burger). Fig. 1 illustrates these two options. They lie on the "iso-socioeconomic functioning curve" for one burger.

Which burger do I make, then? Neither my heart nor my head singularly dictates what I do. It depends on both the warmth of my heart and

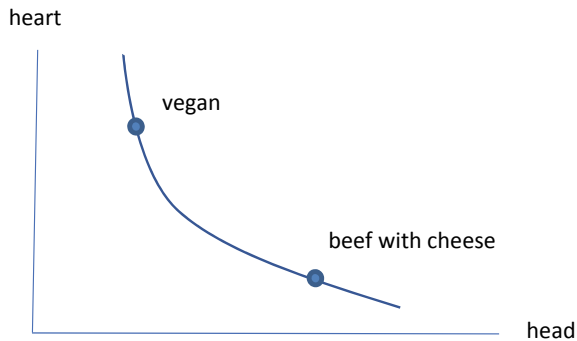


Fig. 1 Socioeconomic Functioning: Making a Burger for Zoe (*Source* Author's own creation)

the coolness of my head at the moment. It depends on the customer. (Some customers ask me to help them choose.) It depends on how many other customers are waiting in line to order their meals. And it depends on how badly I need that \$10 profit from the beef burger sale to Zoe.

In short, to make a meal, I use some combination of heart and head. The combination is based on my ethics, the customer's ethics, social norms, and economic considerations. The basis is not exclusively the minimization of cost or the maximization of profit. In other words, as a producer, I am not sovereign. Neither are customers, as Tomer observes in his essay "Why Consumers Are Not Sovereign."

Since socioeconomic functioning is a broader and looser concept than we are accustomed to, I have come up with a few more examples to help tie it down.

Example 1 - Buying an apple

The apple looks pretty good. But what if I bring it home and find that it has got worms inside? I can ask the seller to replace it with another apple. And if the replacement apple turns out to be rotten also, I feel that I can return it and the seller will refund me out of compassion. But, at the same time, my head tells me that the seller may not do what my heart tells me: The seller may believe that I am a scammer, or the seller may be a scammer and refuse to give the money back to me.

So here I am, holding the apple while thinking about my options in case the seller reneges on the implicit promise of a good apple. There are quite a few options. I could call the credit card company to cancel the payment; I could ask the Better Business Bureau to arbitrate; I could bargain with the seller and see if we can meet each other half way; or I could call a lawyer or a cop. Meanwhile, I ask the seller for a receipt that shows that I did pay for the apple today.

Example 2 - Buying an apartment

I want to live in New York City. I see an ad about an apartment on the 5th floor of a building. The picture of it looks nice; it is what I have been looking for. Now, do I make an offer today? Or do I hire a licensed inspector to go over everything in it and write a comprehensive report first? If I simply make an offer today, I will be using my heart. There are pluses and minuses in using my heart only: a plus is time saved, and a minus is risk of getting a lemon. If I pay an army of real-estate agent,

inspector, lawyer, and escrow agent, then I will be using my head. I can also get the apartment by using some combination of heart and head. Possible combinations again can be depicted as another functioning curve in Fig. 2. It lies entirely above the functioning curve for buying the apple in example 1.

Example 3 - Choosing a diet

It is time for lunch, and I am awfully hungry. The cafeteria has cake and salad. My heart tells me to get the cake, but my head wants me to get the salad. Hello the humanistic hand, what do I eat for lunch?

Example 4 - Getting masks

I am out looking for masks. I feel anxious after reading all those reports on shortage of masks. Luckily, I find two boxes of masks on a pharmacy's shelf and I do not see any sign about limit of purchase. These are boxes of 10 masks each. I don't need 20 masks, but I can save what I don't need now for future coronavirus outbreaks, or I can give a box to my sister. Do I snatch one or both boxes? My head tells me to get both. My heart tells me to get only what I need (i.e., one box), so as to leave the other box for someone. How do my heart and my head work it out?

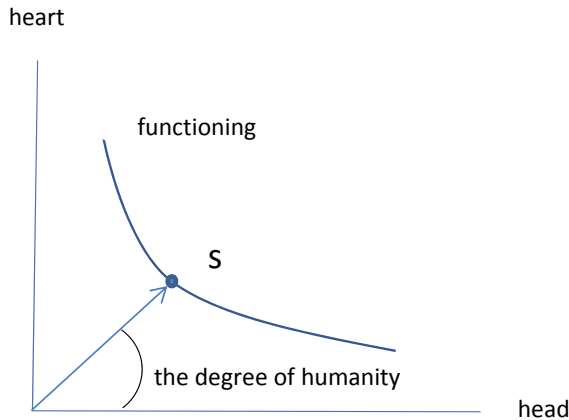


Fig. 2 The Humanistic Hand and the Degree of Humanity (*Source* Author's own creation)

Example 5 - Schooling

The midterm exam is coming up. I require my students to do five practice problems in class today. But student Eric is distracted by something and is not doing the problems. What do I do to make Eric study? Do I sit down with him and go over the problems together? (This is what my heart tells me to do). Or do I pull him aside and tell him that he will flunk the exam if he does not do the practice exam? (This is what my head tells me to do).

Example 6 - Recycling

I am walking in a public park. As I approach the recycle bins, I see an aluminum Coke can lying in the grass, about 20 feet away. What do I do? My head tells me to leave the can alone, because I am tired and it would take me at least one minute to pick up the can, clean it, and place it in the recycle bin. But my heart tells me otherwise: For the sake of the environment, do it.

3 THE HUMANISTIC HAND

Let's draw a picture of the humanistic hand. In Fig. 2, the humanistic hand is the line connecting the origin and the point of functioning, say, S . We can measure the slope of the line and treat the slope as the strength of the humanistic hand, or "the degree of humanity" in short. So, at any point of functioning, we have defined its degree of humanity as the ratio: heart over head.

As to how much heart and how much head it takes for a transaction, I say that we cannot know by minimizing the cost of a transaction. Often, a transaction entails bargaining; we seek compromise with the other side (Williamson, 1979). Even the act of getting a snack is no exception. As Akerlof and Shiller (2015) point out, we all have monkeys on our shoulders, who make us go for the cinnamon buns, even while our head tells us to go to the next store for the vegan salad. What snack we end up getting is negotiated between the monkeys and the nutritionist in our head. The nutritionist laments that the monkeys are producers' instruments of manipulation and deception. Nonetheless, the nutritionist has to come to terms with the monkeys. Our diet, therefore, is their compromise. We can't very well say that our diet minimizes or maximizes anything.

We can't very well say our diet is fixed either. As complexity economics (Arthur, 2015) shows, our diet *evolves* with the rest of the socioeconomic system.

I would be remiss if I should neglect to mention Ronald Coase (1937) at this point. Coase also sees two hands that allocate resources: the invisible hand and the visible hand. He asks rhetorically why we need both hands: an invisible hand in the form of contracting and a visible hand in the form of command-and-control. He answers the question by pointing to transaction costs in the allocation of resources. There are costs to both explicit contracts and command-and-control. Coase thinks that we employ an arrangement that has the lowest total transaction cost. Tomer may demur here: In the bilateral bargaining between heart and head, everything is negotiated; nothing is minimized or maximized.

4 THE RISE AND FALL OF HUMANITY ON GROWTH PATHS

The humanistic hand rises and falls on the path of socioeconomic growth. Figure 3 illustrates a growth path moving northeast in the long run, without bounds. We cannot say whether the degree of humanity will be growing or declining in the long run, even as it fluctuates in the short run.

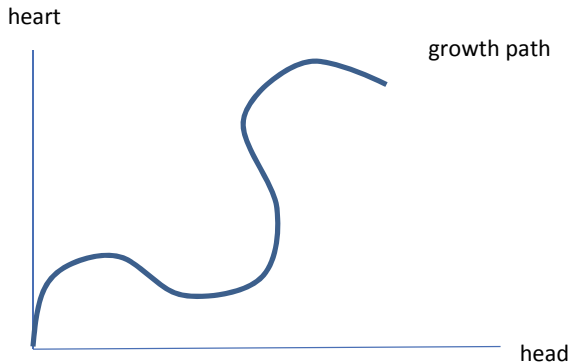


Fig. 3 A Winding Growth Path (*Source* Author's own creation)

But what if either heart or head is bounded? What can we say about the growth path and also about the degree of humanity on the path?

A. Growth with Bounded Head

Suppose that the cost of information is high due to bounded rationality or due to the need for monitoring and enforcing contracts (Simon, 1982). In Fig. 4, these limits are represented by the vertical constraint on the capacity of head.

Figure 4 also shows a growth path of functioning. As the path approaches the head constraint, it becomes convex. The figure also shows three increasing levels of socioeconomic functioning on the path: a, b, and c. The degree of humanity—as measured by the slope of the line—rises from a to b and then from b to c. That tells us that the humanistic hand plays a bigger role as socioeconomic functioning grows.

The explanation is simple. As the level of functioning grows, the head will become a binding constraint: To grow further in our functioning, we would have to resort to our heart, which we assume here is unbounded. Tomer would be pleased to see that happen.

B. Growth with Bounded Heart

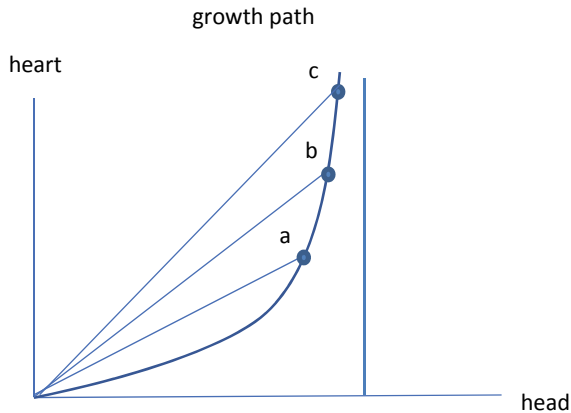


Fig. 4 Rising Humanity with Bounded Head (*Source* Author's own creation)

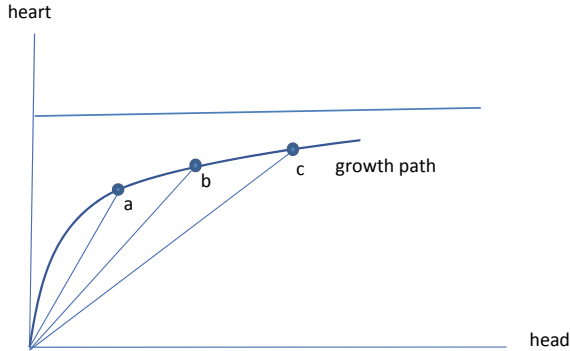


Fig. 5 Declining Humanity with Bounded Heart (*Source* Author's own creation)

But Tomer does not see Fig. 4. Instead, he sees Fig. 5, where the humanistic hand retreats as the economy grows, with the visible hand playing more and more the lead role.

In Fig. 5, the growth path becomes concave, because it runs into bounded heart. (See the horizontal line.)

5 THE PAST AND THE FUTURE OF HUMANITY

Now, we can use the heart-head model to shed light on the past and future courses of humanity in the economy. Why did the invisible hand pass the baton to the visible hand? Will the visible hand pass the baton to the humanistic hand?

A. Artificial Intelligence

Primitive societies have high information cost. Posner (1981) explains how technological change, by lowering information cost, has led to economies with bureaucratic government and formal legal system. That is, low information cost is responsible for ushering in the visible hand.

Consider the impact of lowering the information cost on our daily functioning. As it becomes cheaper to monitor each other, to build and store and retrieve records, and to punish infractions, we will use head more at any given level of functioning. This is what happens with the

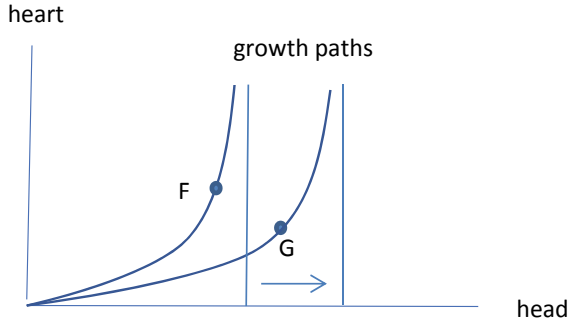


Fig. 6 Artificial Intelligence Drives Down Humanity (*Source* Author's own creation)

emergence of artificial intelligence. Figure 6 shows that, for a given transaction, artificial intelligence shifts heart-head combination from F to G. Since humanity is lower at G, artificial intelligence causes the humanistic hand to retreat. It follows that the growth path shifts to the right.

B. Moral Persuasion

Behavioral economists realize that the reservoir of our moral sentiments is not fixed: while it drains, it also can be replenished by education, self-reflection, and persuasion. This is, indeed, the message that Tomer sends us in all his writings.

In Fig. 7, moral persuasion lifts the heart capacity. The result is that, for any given level of functioning, we use more heart than before (K rather than J). The new growth path therefore shifts upward. It means that we live our lives by using more heart than before. We are led by a stronger humanistic hand.

C. A Tale of the Tug of War between Head and Heart

I am writing during the Covid-19 pandemic, when my university has moved the vast majority of classes online. There are a lot of technical and pedagogical issues about online teaching, but the stickiest one is how to assess student performance. Faculty are divided on this issue. One group—the “head group”—use more technology. They bring out Zoom

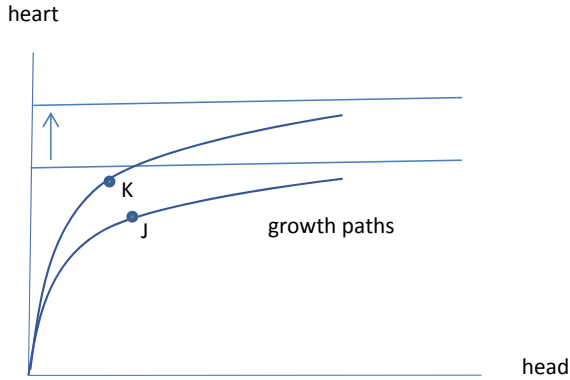


Fig. 7 Moral Persuasion Drives up Humanity (*Source* Author’s own creation)

and tell students: (1) not to look away from the camera; (2) not to touch their i-phones; and (3) not to take bathroom breaks during an exam. The other group—the “heart group”—tell students that the exams will be take-home, open-book, and off-camera. They also give students more time to take an exam.

I am sure Tomer belongs to the heart group. He would trust that students do not cheat whenever possible. He would trust that students reciprocate faculty’s trust in them with honesty. He would be concerned about the adverse effects on well-being when faculty monitor their every move. Artificial intelligence sends an open message of distrust. It is known to cause Zoom fatigue and other mental illnesses among both students and faculty.

6 CONCLUSION

We have come around to a question we asked early on in the journey: how does the future of humanity look?

I don’t know the answer. I only know how to answer: we must know more about two things: artificial intelligence and moral persuasion. Do they evolve independently? Probably not. But then how do they co-evolve? We need to look to complexity economics for answers.

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Inclusive Capitalism

Robert Ashford

1 INTRODUCTION

John Tomer had great vision, courage, kindness, intellect, dedication, and social conscience. In the years that I was privileged to work with him, I discovered that we shared many positive views on three important, systemic approaches to economic analysis: behavioral economics, socio-economics, and inclusive capitalism.¹

¹ The term “inclusive capitalism” has been used in various ways. The word “inclusive” raises the question: “Inclusive of whom with respect to what?” The approach to inclusive capitalism advanced in this chapter is “inclusion of all people in the competitive process of capital acquisition with the earnings of capital.” It is based on original principles of “binary economics” first advanced by Louis Kelso. The authoritative source of Kelso’s writings appears at <http://www.kelsoinstitute.org>. For the author’s approach to binary economics, see Robert Ashford (1996, 2011, 2012 [co-authored with Ralph P. Hall and Nicholas A. Ashford], 2013–2014).

Valuable information on this approach to inclusive capitalism can be found by searching the terms “binary economics” and “inclusive capitalism.” However, much misinformation is also presented under “binary economics” (e.g., the Wikipedia entry). The approach in this article is consistent with the original principles advanced by Louis Kelso but differs in several respects. Most notably, inclusive capitalism is advanced as a principle

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John's positive views on behavioral economics are convincingly presented in Tomer (2017a). His positive views on socio-economics and its relationship to behavioral economics are summarized in Chapter 8, pages 92–100 of that book. His positive views on inclusive capitalism are memorialized in writing in just one sentence. Based on conversations we had, on several of my presentations that he kindly attended, on several articles I authored or co-authored and shared with him, and on a news story article summarizing my work, Walls (2017), in one of his last communications to me John wrote "Thanks Robert. Put me down as favoring inclusive capitalism" (Tomer 2017b). This chapter presents the economic analysis underlying his support of my approach to a more inclusive capitalism.

John's expression of support places him in the company of a growing number of economists who have come to appreciate the importance of this approach to a more inclusive capitalism. In a letter, dated April 14, 2021, thirteen professors of economics wrote:

With deep concern regarding (1) the eroding economic prospects of growing numbers of poor and middle-class people, (2) growing wealth concentration, and (3) the urgent need to promote environmentally sustainable, equitable growth, we undersigned economists are honored to write this letter in enthusiastic support for Professor Robert Ashford's ground-breaking work on Inclusive Capitalism. We do so in the belief that in his pioneering scholarship, Professor Ashford has made the most important contribution to economic theory in many decades: an idea with many practical, beneficial policy implications for both current and future generations.

Professor Ashford's remedy for the economic problems that left-wing stimulus and right-wing austerity approaches have failed to solve is to broaden the ongoing process of capital acquisition with non-recourse credit repaid with the future earnings of the capital acquired. Although this approach focuses on broadening capital acquisition rather than more jobs and higher wages as a remedy for the economic prospects of poor and

of fuller employment and per-capita growth. Perhaps the most publicized use of "inclusive capitalism" is by the "Coalition for Inclusive Capitalism" lead by Lady Lynn Forrester De Rothschild, its founder, and dedicated "to make capitalism more dynamic, sustainable, and inclusive" (<https://www.inc-cap.com/>). The Coalition has revealed no recognition for the importance of including all people in the competitive process of capital acquisition with the earnings of capital.

middle-class people, rigorous economic analysis reveals that this remedy may have the effect of increasing jobs and wages as well.

Remarkably, the foundational principle underlying Professor Ashford's innovative approach to a more inclusive capitalism, can be summarized in a single sentence: A broader distribution of capital acquisition with the future earnings of capital creates *the rational expectation of a broader distribution of discretionary capital income in future years (to people with a higher propensity to consume) and therefore greater incentive to employ more labor and capital in earlier years*. In other words, the more broadly capital is acquired with the earnings of capital, the more an economy will grow without redistribution.

Broadening the acquisition of financial capital with the future earnings of financial capital, is an idea originally proposed by Kelso and Adler (1958 and 1961), Kelso and Hetter (1967), and Kelso and Kelso (1986). The underlying logic was subsequently refined, transformed, and enriched by Ashford (1996, 1998, 2009, 2013–2014, and 2016). The idea has further been discussed by Ramady and Kantarelis (2009) as well as Ashford and Kantarelis (2008 and 2016). In light of the various, breakthrough, transformative modifications proposed by Professor Ashford over time in shaping this new model of capitalistic thinking, especially as it relates to real economic growth and distribution, it is appropriate to label it as Robert Ashford's Model of Inclusive Capitalism.

After thorough analysis, we find this principle to be elegant, productive, and very sound. If implemented, Professor Ashford's approach to inclusive capitalism would (without redistribution) enrich and empower millions of people (by enabling them to acquire capital with its future earnings and thereafter earn discretionary income from their ownership of capital) and also enhance the profitability of corporations that choose to implement it. It can be implemented in a sustainable, environmentally friendly way; and it would reduce rather than increase the federal budget.

Among the important economic implications that logically and plausibly flow from Professor Ashford's principle of fuller employment and growth is revealed in its crucial relevance to corporate finance. "[A]lthough business corporations have proven to be excellent means to acquire capital with the earnings of capital in industrialized economies, their benefits have not yet been made available to a substantial degree to poor and middle-class people. ... [Professor Ashford's principle of fuller employment and growth] reveals how business corporations may voluntarily choose to broaden their share ownership to include poor and middle-class people, enhance the earning capacity of those people, improve corporate profitability as well as shareholder wealth, and lay the structural economic foundation for sustainable growth." [Quotation from "Enhancing Poor and Middle Class

Earning Capacity with Stock Acquisition Mortgage Loans” by Robert Ashford and Demetri Kantarelis” *Economics, Management, and Financial Markets* 11(2) 2016, pp. 11–26, ISSN 1842-3191, eISSN 1938-212X, p. 13.]

Significantly, this foundational principle of fuller employment and growth appears nowhere in the antecedent history of economic thought. It appears neither in Adam Smith’s *Wealth of Nations* nor in any of the writings of any of the classical economists who build on its foundation. Yet it has implications that (1) alter the foundational, classical economic analysis of prices, production, and per-capita growth and (2) reveal how greater per-capital growth can be achieved by broadening capital acquisition with the earnings of capital.

It appears neither in the neoclassical economic analyses of efficiency advanced by Alfred Marshall, Leon Walras, and their contemporaries, nor in the analysis of later neoclassical economists, nor in the various contemporary neoclassical growth theories such as the approach advanced by Nobel Prize Laureate Robert Lucas. Yet its implications alter the neoclassical analysis of prices which are foundational to any measures of efficiency and productivity and to any modeling used in economic forecasting. Moreover, it reveals how greater benefits of efficiency and productivity can be achieved by broadening capital acquisition with the earnings of capital.

It appears neither in the fuller-employment analysis of John Maynard Keynes nor any of the economists that build on or modify his analysis. Significantly, it can be understood as transforming Keynesian general theory of fuller employment from a short-run analysis into a long-run analysis in which the distribution of capital acquisition is a fundamental variable. It fundamentally enriches the Keynesian analysis of how market economies can suffer substantial, chronic unemployment and reveals how corporate finance can be structured to achieve fuller employment voluntarily without redistribution. It appears neither in the creative construction analysis of Joseph Schumpeter, nor in the analyses Austrian economists such as Friedrich Hayek, nor in other analyses that focus on the important role of the entrepreneur, yet it significantly enriches those analyses and, if widely understood, would greatly enhance the growth predicted by advocates of those approaches.

We believe that Professor Ashford’s transformative contributions to economic theory will eventually become widely recognized, taught, and celebrated throughout the world. The only question in our minds is how long poor and middle-class people and society as a whole will needlessly

be deprived of the great benefits that would voluntarily flow from their widespread acceptance and implementation. (Arestis et al. 2021)²

This chapter expands upon the substance of this letter and explains why teaching the principles of inclusive capitalism should be an essential part of the curriculum of higher education to enable people to achieve greater and more shared, sustainable prosperity without redistribution.

2 PRINCIPLES OF INCLUSIVE CAPITALISM

This Part II presents foundational principles of inclusive capitalism that establish a distinct way to achieve per-capita growth, efficiency, and fuller employment not found in the antecedent history of economic thought. It then explains how these principles fundamentally alter other widely accepted economic principles.

2.1 *Foundational Principles*

1. Both labor capital and real capital (a) do work, (b) are equally fundamental factors of production, and (c) (via property rights) distribute income³;
2. Although advancing technology may be understood to make labor more productive, advancing technology may also be understood to make capital more much productive than labor in task after task;
3. The prospect of a broader distribution of capital acquisition with the earnings of capital carries with it the prospect of more broadly distributed capital earning capacity and earnings in future years

² This letter is signed by professors of economics: Philip Arestis (Cambridge University), George Bitsakakis (Oxford University), Paul Davidson (University of Tennessee, Emeritus), Wolfram Elsner (University of Bremen), Fred Foldvary (Santa Clara, Emeritus), Shubha Ghosh (Syracuse University), Peter Hammerschmidt (Eckerd College), Jeffrey Harrison (University of Florida, Demetri Kantarelis (Assumption College), Peter Koveos (Syracuse University, Mark Lutz (University of Maine, Emeritus), Jan Ondrich (Syracuse University), and George Shepherd (Emory University).

³ “Capital” (with or without the adjective “real” includes land, animals, structures, and machines—anything capable of being owned and employed in production. “Real capital” also includes “capital intangibles” like patents, trademarks, trade secrets, and labor contracts. It does not include “financial capital,” which is an ownership interest in real capital. According to inclusive capitalism, financial capital does not do work, but is a claim on the work done by (earnings of) real capital.

- to people with a higher propensity to consume, which therefore provides the expectation of market incentives to profitably employ more labor and capital in earlier years (the principle of “binary economic growth”); and
4. Per-capita economic growth is primarily the result of the increasing “*productiveness*” of capital and the distribution of its acquisition (rather than the result of the increasing productivity of labor and/or capital).

As noted in the economists’ letter, the growth principle of inclusive capitalism provides a distinct understanding of (1) per-capita growth (the fundamental question explored by Adam Smith in his *Wealth of Nations*), (2) the distributive wealth-enhancing consequences of allocating productive inputs according to their marginal productivity (a fundamental focus of neoclassical economics), (3) full employment as reflected in the analysis of John Maynard Keynes in the *General Theory* and Paul Samuelson’s Neoclassical-Keynesian synthesis, and (4) exogenous and endogenous neoclassical growth theories. It also provides a distinct understanding regarding (1) the market relationship between value and price, and (2) the revenue generating and earning capacity of capital.

2.2 Productivity and Productiveness Compared

Inclusive capitalism distinguishes the concepts of productivity (pervasively important in conventional economic analysis) and productiveness. Productivity is a ratio of some measure of output divided by a denominator reflecting some factor input, usually labor. In contrast, productiveness retroactively means “work done” and prospectively “productive capacity.”

Consider the work of sawing boards: 10 boards per hour with a hand saw and 100 boards per hour with a machine saw. Working with a machine saw rather than a hand saw, the worker can saw ten times as many boards in the same time and therefore has become ten times as productive and has ten times the productivity. But when sawing each board, with the machine saw, the worker is doing much less work. Per unit of production, the work done by the sawyer (“labor productiveness”) has decreased and the work done by the saw (“capital productiveness”) has increased. Given

the total production done in one hour, the machine saw is doing essentially all the extra work. Thus, in addition to the view that the primary role of capital is to increase labor productivity, there is another (binary) way to understand the primary role of capital in contributing to per-capita economic growth: namely, to do an increasing portion of the total work done. Although neither the hand saw nor the machine saw would saw any boards without the work of the sawyer, so too the sawyer would not any boards without the work of the saws.

The productiveness of capital is more clearly revealed in the work of hauling: in one hour (1) a person can haul one sack one mile and is exhausted; (2) with a horse, 10 sacks can be hauled four times as far (yielding a 40-fold increase in production); and (3) with a truck, 500 sacks can be hauled forty times as far (yielding a 20,000-fold increase in production). According to inclusive capitalism, the horse and truck (like the machine saw) do more than increase labor productivity; the horse and truck are doing essentially all the extra work. Although to be productive, the horse must be led and truck must be driven, the work of leading and driving is *not* the work of hauling done by the horse and truck.

Thus, inclusive capitalism distinguishes between:

1. “productivity” (a ratio of the output of all factors of production, divided by the input of one factor, usually labor) and
2. “productiveness” (a special focus of inclusive capitalism, which retrospectively means “work done” and prospectively means “productive capacity”).

With technological advance, by definition labor productivity can rise while labor’s share of the work done declines.

2.3 *The Meaning of “Equally Fundamental”*

Many people, including Adam Smith, share an anthropocentric vision that (1) premises economic activity on the work of people. In English and other languages, there is a special word for the work of humans (“labor”), but no special word for the work of capital and other non-human factors that contribute to production. Rather than viewing the productive contribution of labor and capital as distinct sources of production (just as two workers would constitute two sources of production

when both are needed to complete tasks), conventional thinking views the contribution of capital as amplifying labor productivity and considers the economic contributions of the non-human factors to be dependent on people. However, according to inclusive capitalism, labor is much more dependent on the work of non-human factors of production than the other way around. The sun shines and rain falls without human effort. With help from the sun, rain, and earth (and countless worms and other organisms), vegetation produces oxygen, food, and medicines; animals produce food and medicines, do other work, and provide other benefits. Physical structures and materials support and protect us. Humans make productive contributions, but their capacity is limited. From the dawn of civilization, beginning with rudimentary tool-making, the discovery of agriculture, and the domestication of animals, the great growth in productive capacity of society is not primarily the result of people working harder, longer, or more productively, but is rather mostly achieved by unleashing and guiding the far greater independently productive powers of the non-human contributions to production that are available by discovering and employing the materials, forces, and powers of nature.

The assertion that labor and capital each do work and are equally fundamental factors of production does not negate the fact that (1) both labor and capital are generally needed to do most kinds of work, and (2) labor is needed to invent, build, install, operate, maintain, store, repair, manage, and finance capital. But the work of labor needed to employ capital *is not* the work of the capital employed. And in a market system, people would not be compensated for the labor needed to employ capital if the employed capital did not do much more work than the labor needed to employ it.

2.4 *Seven Growth Enhancing Powers of Capital*

Capital reveals seven powers which contribute to per-capita economic growth distinct from the contributions of labor. Capital can

1. replace labor (doing what was formerly done by labor) (Such “growth” is reflected by an increase in leisure and potential unemployment depending on the distribution of capital acquisition, but no increase in physical production.);

2. vastly supplement the work of labor by employing capital to do much more of the kind of work that humans can do (e.g., by hauling that can be done employing horses or trucks rather than humans);
3. do work that labor alone can never do (e.g., elevators quickly lift tons thousands of feet; airplanes fly; scientific instruments unleash forces that create computer chips that cannot be made by hand; fruit trees make fruit while all farmers can do is assist in the process);
4. work without labor (e.g., washing machines, automated machines, robots, and wild fruit-bearing trees);
5. pay for itself with its future earnings (the basic rule of business investment);
6. distribute income needed to purchase its output (the logic of double-entry book-keeping); and
7. broaden the distribution of its ownership with its future earnings.

The first four powers are the “real economy” powers of capital; the latter three are financial powers revealed in a private property, market economy with a stable credit system protected by a reliable legal system. Only the first directly involves the *substitution* of capital for labor. Although marginal efficiency theory is widely employed as the foundation for theories of neoclassical growth, in fact, the capital/labor substitution process is only one component of wealth enhancement (operating *after* the creation of greatly increased productive capacity) and its wealth-enhancing contribution to efficient pricing and resource allocation is limited for reasons discussed below.

2.5 The Distributive Power of Capital

The sixth and seventh growth-enhancing capital powers reveal that capital works on both sides of the economic equation with vastly increased:

1. productive capacity and production, and
2. capacity to distribute income and leisure.

Although useful, the productivity concept can be somewhat confusing and misleading. Productivity ratios may inform decisions of whether and how much to invest in additional units of labor and capital; and the resultant allocation of resources may well enhance efficiency production,

profitability, and wealth. But ratios do not do work. People and things do work. Per unit of output, an increase in the labor productivity ratio occurs whether it is labor or capital component that is doing more or less of the per-unit production and therefore fails to fully comprehend the full distributional consequences of technological advance.

In light of these powers and of how production and productive capacity has changed since 1776, in countless aspects of work, the principles of inclusive capitalism hold that *increased production (growth) is primarily the result of increasing capital productiveness and the distribution of its acquisition rather than increasing labor and capital productivity*. According to inclusive capitalism, increasing productivity is much more an effect than a cause.

Although it is good to be able to earn by laboring, it is better to be able to *also* earn by owning, and an increasingly inclusive capitalism will more robustly empower everyone to earn increasingly by owning as well as by working. In a private property, market economy, it is the capacity of capital both to do much more work and to distribute much more income and leisure to people (even as they sleep) that explains how the broader distribution of its acquisition not only enriches and helps to liberate every individual who is able to acquire it, but also how it has an immense positive, systemic impact on capital accumulation and per-capita growth.

2.6 *Economic Theories of Value and Price*

Also central to understanding whether and how broader capital acquisition increases per-capita growth (and capital cost recovery) is the theory of value and competitive pricing. According to Smith, labor is not only the most fundamental source of production, but also the only fundamental source of value and determinant of price. Smith reasoned that the work to acquire anything is an expression of the value to the worker of the thing to be acquired. Conversely, things are worth some function of the work people are willing to do to acquire them. Smith conceived of all value and prices of all production as ultimately a function of (1) the value of labor to produce it and (2) the value of labor commanded in exchange for it. "The real value of all the different component parts of price, it must be observed, is measured by the quantity of labour which they can, each of them purchase or command. Labour measures the value not only of that part of the price which resolves itself into labour, but of that which resolves itself into rent, and of that which resolves itself into

profit” (Smith 1937, p. 50). Thus, all prices and values are functions of the individual decision of whether to work or remain idle at an offered wage. According to logic Smith, the distribution of capital acquisition has no effect on prices. The same can be said for the marginal productivity approach of neoclassical economics and the Keynesian approach to fuller employment in which “apart from money and time...the unit of labor ...[is] the sole physical unit” (Keynes 1936). In such analysis, the distribution of capital acquisition is as irrelevant to prices and values as it is to the supply of capital, fuller employment, and growth.

However, the recognition that capital does work and earns income for its owner belies the false notion that the decision to work or remain idle as the only source of value and measure of price.⁴ The value of goods and services is not only a function of what work people are willing to do to pay for them, but also a function of what work they (as owners) are willing to employ their capital do. The person who has no capital and wants sacks hauled must either do the work herself or do the work necessary to pay someone (or something) else to do the hauling. In rationalizing a market system of free exchange, this logic (in essence, the labor theory of value) obscures and implicitly denies the fact that the person who owns capital (e.g., a horse or truck) and wants sacks hauled can do work and express value not only via labor but also as an owner by employing her capital to do the hauling.⁵

⁴ Of the classical economists, apparently only Jean Baptiste Say identified in writing Smith’s erroneous foundational assumption:

To the labour of man alone he [Smith] ascribes the power of producing values. This is an error. A more exact analysis demonstrates ... that all values are derived from the operation of labour, or rather from the industry of man, combined with the operation of those agents which nature and capital furnish him. Dr. Smith did not, therefore, obtain a thorough knowledge of the most important phenomenon in production; this has led him into some erroneous conclusions, such, for instance, as attributing a gigantic influence to the division of labor, or rather to the separation of employments. This influence, however, is by no means inappreciable or even inconsiderable; but the greatest wonders of this description are not so much owing to any peculiar property in human labor, as to the use we make of the powers of nature. His ignorance of this principle precluded him from establishing the true theory of machinery in relation to the production of wealth. (Say 1830)

⁵ Many economists claim that modern economics has extricated itself from the labor theory of value in favor of analysis based on the relation of prices to “revealed preferences.” However, in present capitalist economies in which approximately 95% of the

According to inclusive capitalism, the willingness of a laborer to work at given wage depends on that person's competitive opportunity to acquire capital with its earnings and then receive its full return. Therefore:

1. the theory of marginal productivity that underlies conventional understanding of the relative employment of capital and labor in production and
2. the factor income shares derived from production

are significantly dependent on the market distribution income that flows from competitive access to capital acquisition. But that understanding is nowhere reflected in mainstream economics and econometrics.

Competitive market pricing requires no entry barriers. Without widespread understanding (among market participants) of the principle of binary economic growth, competitive access to the same government-supported financial infrastructure available to well-capitalized people to acquire capital with the earnings of capital (and thereby through ownership to produce goods and express value) is not open to most people as a practical matter.

From a conventional economic perspective, the distribution of competitive access to capital acquisition has no important impact on prices, capital/labor substitution, employment, and factor income shares. According to inclusive capitalism, if capital acquisition is limited as a practical matter to a small fraction of the population and primarily in proportion to their existing wealth, (1) markets cannot be efficient in their pricing of labor, capital, and the goods and services produced by them, and (2) available labor and capital can not be employed efficiently at its full potential.

people earn little or no current capital income, the prices of the vast array of consumer goods are significantly related to the compensated work people are willing to do to acquire them, somewhat augmented by redistributed income and consumer debt. It is only when one sees the prices of high-end goods (e.g., \$50 million for a Rembrandt or a Mansion, or millions for paraphernalia of celebrities) that the earnings of capital have an appreciable effect on market prices.

2.7 *Inclusive Capitalism and Mainstream Theories of Growth, Efficiency, and Fuller Employment: The Importance of the Distribution of Capital Acquisition*

The asserted positive relationship between the distribution of capital acquisition and growth (i.e., the principle of binary economic growth) *is not* based on the behavioral premise that people will work more productively if they (1) own more capital, (2) own the land, tools, and/or businesses they work with, and/or (3) have an ownership stake in their employers' businesses. Such productivity gains are independent of binary economic growth. Although most advocates of inclusive capitalism accept this behavioral premise, this behavioral premise is neither unique to inclusive capitalism nor inconsistent with the growth theories of mainstream economics. Rather, the unique premise of inclusive capitalism is that the promise of broader capital acquisition with the earnings of capital *will, in itself*, produce the fuller employment of both labor and capital and greater growth by broadening the distribution of future discretionary capital income among people with a higher propenseness to consume and thereby increasing their consumer demand.

A survey of growth, efficiency, and fuller-employment theories found in the history of economic thought reveals that means to enhance wealth can be understood as the result of (1) increasing labor specialization and trade and free trade (as Smith maintained), (2) decisions regarding the most efficient and productive employment of productive inputs based on their marginal productivity (as maintained by neoclassical efficiency theorists), (3) various theories of entrepreneurial and technological decision-making and "creative destruction" somewhat aided but not entirely dependent on employment of inputs based on their marginal productivity, (4) various so-called Keynesian theories of fuller employment based on the failure of market economies to distribute effective demand needed to employ more fully available productive inputs profitably at least in the short run, and (5) various neoclassical exogenous and endogenous growth theories. However, none of these approaches treats the market distribution of capital acquisition as a fundamental causal factor affecting per-capita growth, greater efficiency, and fuller employment. In contrast, according to inclusive capitalism, per-capita growth, efficiency, and fuller employment can also be understood as the result of capital doing an ever-increasing portion of the total work done and as being capable of distributing (via property rights) more or less demand

for employment of labor and capital depending on the distribution of its ownership.

Although differing significantly, the foregoing widely taught conventional approaches to per-capita growth, greater efficiency, and fuller employment reduce globally to a political/economic debate between the advocates of “austerity vs. stimulus,” and in the USA, to a debate between “too much government is the problem” and “more government is the solution”; and usually, these strategies are seen as competitive alternatives. In contrast, the principle of binary economic growth is an “add on” not an alternative. It does not compete with either approach; instead, it makes both approaches affordable and perhaps more politically achievable.

3 APPLYING THE PRINCIPLES OF INCLUSIVE CAPITALISM TO THE AMERICAN ECONOMY

In the time needed to read this chapter, the wealthiest 1% of people will have acquired more capital wealth with the earnings of capital (even as they sleep) than most people will earn in their lifetimes, no matter how long and hard they work. To do so, this 1% (along with other existing shareholders) are routinely aided in capital acquisition transactions by the institutions of corporate finance: corporations, investors, lenders, capital credit insurers and reinsurers, and the central bank.

Operating together, these institutions facilitate capital acquisition for shareholders primarily in proportion to their existing wealth. The principles of inclusive capitalism suggest that if those principles were as widely taught as the other aforementioned approaches to per-capita growth, efficiency, and fuller employment, then the same institutions could be voluntarily more fully employed more profitably and efficiently (without government mandate or redistribution) to produce more broadly shared, sustainable prosperity as more people are included in the capital acquisition process in ways not limited to their existing wealth.

Consider the three thousand largest, prime-credit-worthy publicly traded corporations in the USA (roughly, the Russell-3000 Index). These corporations rely on legislated default characteristics that include (1) perpetual existence, (2) centralized management (including control of revenues), (3) limited liability of investors and lenders for corporate liabilities, and (4) stable power to make contracts and hold property unaffected by changes in corporate share ownership. Working synergistically, these characteristics make the default corporate legal infrastructure

the preferred means to amass great wealth in all capitalist economies. They equip corporations with super-human powers that could not be privately negotiated. These powers greatly enhance their ability to function competitively in the capitalist economies that emerged with the great increase in productive capacity spawned by the industrial revolution. These legislated characteristics have been instrumental (if not essential) to (1) the accumulation and concentration of vast private wealth in hands of relatively few individuals (primarily less than 10% of the population) and (2) the exacerbation of unequal economic opportunity and poverty in virtually every capitalist nation.

Not so widely recognized is how using these same attributes, corporations could produce and distribute much more corporate wealth more broadly for their shareholders, other corporate stakeholders, and society. With a more broadly shared understanding of inclusive capitalism, rather than serving primarily as wealth-concentrating institutions such corporations may increasingly choose to enhance their profitability and their wealth by becoming capital ownership-broadening institutions.

Presently through these corporations, almost all new capital is acquired with the earnings of capital, and approximately 25% is acquired with borrowed money.⁶ Thus, by way of the default, corporate legal infrastructure, operating with the aid of a government-maintained monetary system, a highly regulated credit system, in an economy in which government is the rule-maker, the empire, and a major player, people wealthy enough to be substantial shareholders are accorded an advantage that non-shareholders generally do not have: indirect access to non-recourse corporate credit to acquire an increasing shareholder interest in 25+% of the annual increase in corporate assets *before* the corporations whose shares they own have generated the revenues used to pay for them. And this shareholder benefit is highly concentrated: Recent data on wealth concentration indicates that in approximate terms, presently 1% of the people own 54.9% of the corporate wealth and 10% own over 93.5%, leaving 90% people owning little or none (less 6.8%) (Wolff 2019).

⁶ For example, during the fifteen-year period from 1989 through 2003, in the case of major American companies, the sources of funds for capital acquisition, in approximate terms, reveal that annually retained earnings accounted for at least 70% and more usually 80% of the capital acquisition. Borrowing accounted for almost all the rest. Sale of stock as a source of funds never exceeded 5% and was negative in most years. See Brealey et al. (2004).

Proponents of inclusive capitalism believe that the exclusion of most poor and middle-class from substantial access to this advantage (operating 24/7 globally) is a primary, if not the primary, cause of suboptimal growth, wealth concentration, unequal economic opportunity, and poverty. If people who have little or no wealth could acquire a shareholder's interest in corporate capital with the future revenues of the capital acquired (as existing shareholders do presently even as they sleep), they too could become shareholders and thereafter participate in future corporate wealth creation along with other generally wealthier shareholders. If the techniques presently used to enable existing shareholders to acquire capital with the future earnings of capital primarily in proportion to their existing share ownership were opened competitively to all people, then the demand for the employment of labor and capital, corporate profitability, and more broadly shared, sustainable prosperity would increase as discretionary capital income is increasingly distributed to would-be consumers with unsatisfied needs and wants.

To explore how these benefits can be achieved voluntarily and without government mandate or redistribution, consider how a board of directors meeting of a typical Russell-3000 Index Corporation ("A-Co") might proceed both before and after inclusive capitalism is as widely taught as the other economic approaches mentioned above. As corporate fiduciaries, the duty of A-Co's directors is not to maximize share price at every point in time ("short-termism") or to maximize shareholder profits,⁷ but rather to maximize corporate wealth throughout A-Co's perpetual (indefinite) existence.

Reflected in stock exchange prices, the main determinant of A-Co's value is not the profits that it distributes to shareholders (relatively few corporations regularly do so) but rather its long run, ability to generate "discretionary revenues" (revenues in excess of obligatory operating costs, interest expenses, other liabilities, and taxes). At the discretion of corporate management, protected from close judicial oversight by the highly deferential "business judgment rule," these revenues may be (1) appropriately used for depreciation, research, development, capital acquisition, and other corporate wealth-enhancing expenditures (including mergers and acquisitions), (2) held in cash, (3) distributed to shareholders, and/or (4)

⁷ Generally, shareholders have no rights to profits except when dividends approved by the board of directors or when the corporation is "in dissolution" at which time the corporation no longer has credit to acquire capital with its future earnings.

misused and thereby reflected in illegitimate agency costs. Competitively maintaining and enhancing long-term, “discretionary revenue generating capacity” requires at least maintaining and preferably increasing market share compared to competitors. In the economic history of the USA in which growth is the rule and recession is the exception and in which advancing technology is a primary, if not the primary, cause of per-capita growth, this long-run capacity to produce discretionary revenues requires an ongoing annually administered real capital acquisition plan, which in turn requires long-term corporate creditworthiness, which in turn has usually been achieved by optimizing corporate debt (consistent with a competitive credit rating).

Accordingly, at its board meeting, A-Co’s value directors would approve A-Co’s capital acquisition spending for the next year and (subject to reconsideration) consider and perhaps approve long-term capital acquisition plans well into the future. A-Co plans to finance approximately 25% of next year’s capital acquisition with borrowed money. Management believes it can profitably borrow at or near prime (say 5% and earn at least 8–10%) and the lenders agree.

Before the plan is approved, Bill Gates approaches A-Co and says, “Without changing your present plans in any way, I believe there is a synergy gain achievable via cooperation between A-Co. and Micro-Soft. However, the gain is sufficiently attractive to me only if I can gain as a stockholder in both companies. Instead of A-Co’s borrowing money, if A-Co sells me stock at its present fair market value I will invest in A-Co the same amount as A-Co presently otherwise plans to borrow.”

Corporate law does not allow A-Co’s directors to reject this offer without a good faith consideration of its expected value. They have a corporate fiduciary duty of “due diligence” to determine whether Bill’s offer is more wealth-enhancing to A-Co and its existing shareholders than the debt-financing alternative; and (considering all the risks) if Bill’s offer seemed to be more wealth enhancing, A-Co’s directors would need to have a sound reason for rejecting it. The same would be true in the case of competing offers from Warren Buffet, Jeff Bezos, or Mark Zuckerberg. And before the decision was made, if Bill, Warren, Jeff, and Mark were to say, “Instead of using cash or borrowing money secured by my assets, I plan to pay for X-Co’s stock with borrowed money secured by third-party capital credit (i.e., loan default) insurance.” Would A-Co care? The answer from A-Co’s financial and legal advisors is: “No, as long as the loan to the investor does not materially, adversely affect the prospective

synergy gain.” Thus, like the boards of all Russell-3000 companies, after a due diligence evaluation, A-Co’s board would probably be obligated to choose the offer that maximized A-Co’s wealth.

As long as inclusive capitalism is not taught along with the other economic approaches mentioned above, that would end our story. Corporations would be largely limited in ways to acquire additional capital by using discretionary revenue, retained earnings, borrowed money or sale of stock to investors wealthy enough to pay for it with cash, assets, or secured credit; and capital acquisition would accrue to the vast majority of people primarily in proportion to their existing wealth. However, after inclusive capitalism becomes as widely taught as the other approaches, people will have an additional understanding of how a more inclusive approach to capital acquisition might work and how a more broadly distributed prosperity might be more profitably achieved. And of course, the “people” would include not only the teachers and their current students, but also former students who have become the directors, officers, legal and financial advisors, trustees, etc., of the Russell-3000 corporations (including lenders, insurers, and mutual fund companies, and mainstream media companies), charitable foundations, think-tanks, policy institutes, labor unions, and public servants in all branches and levels of government having responsibilities related to economic prosperity, equal opportunity, and justice, pension funds, and private investors.

To explain how the principles of inclusive capitalism would (for the first in the history of capitalism) provide vast numbers of people entry into the board room (represented by financially sophisticated fiduciaries just as richer people are) to make competitive offers for shares of creditworthy corporations like A-Co (offers that must be evaluated with due diligence regarding their corporate wealth-enhancing potential), Section A explores the terms and wealth-enhancing potential of the ownership-broadening offer in the aggregate (i.e., economy-wide) as though (1) all Russell-3000 companies are presented with an ownership-broadening offer (described below), (2) every year, each individual corporation is free to employ the ownership-broadening approach to finance whatever (including no) portion of that corporation’s capital wealth-maximizing acquisition requirements, and (3) some of those corporation are able to capture a sufficient portion of the potential increased gain in consumer demand for their products that results from their capital ownership broadening to make their ownership-broadening financing the most competitive alternative. Section B explores how on the

microeconomic level capital ownership-broadening corporations might capture a sufficient share the increased consumer demand caused by their ownership-broadening to render the offer competitive with other financing alternatives.

4 AGGREGATE ANALYSIS

After inclusive capitalism is widely taught, so all the major decision-makers in the institutions mentioned above along with a substantial portion of the general public understand that broadening capital acquisition with the earnings of capital is an additional means of enhancing future consumer demand, per-capita growth, efficiency, and fuller employment, a mutual fund company like Vanguard, Fidelity, or TIAA-Cref (always eager and competing for more customers) might approach A-Co with a synergy gain perhaps greater than all of those mentioned above. For example, a representative of TIAA-Cref might make the following presentation to A-Co's board of directors:

The potential synergy gain TIAA-Cref brings to A-Co is the pent-up appetite for A-Co's products and services that your (1) employees, (2) customers, (3) neighbors (those living in cities near A-Co facilities and in company towns in which A-Co is the, or one of the, major employers, and (4) welfare recipients living in areas where A-Co sells its products (welfare recipients that are presently being supported by taxes on the income of A-Co, its shareholders, and its employees). (The people included in these four categories will be referred to as the ownership-broadening beneficiaries, or simply the beneficiaries.) Just as A-Co, Bill, Warren and the others can borrow funds with secured capital credit to invest directly or indirectly in A-Co's creditworthy investments, acting as an investment trustee for A-Co's ownership-broadening beneficiaries, TIAA can arrange the same sort of financing. A-Co's prospective lender has already determined that A-Co's planned use of the loan funds is creditworthy; in light of the synergy gains offered by Bill and the others, the capital credit insurers apparently also agree; and if TIAA's synergy offer is yet more competitive, it will make A-Co's capital acquisitions yet more creditworthy.

Presently in terms of their current consumer income, the vast majority of these potential A-Co beneficiaries are trying to survive economically on wages and welfare alone in a capitalist economy in which production is becoming increasingly more capital-intensive. Without a widely they are

aware with offers of consumer credit but benefit of competitive offers of capital credit shared understanding of inclusive capitalism, they have not had competitive access to credit for capital acquisition with the future revenues and earnings of capital the way that richer people routinely do (even as they sleep). TIAA can structure the capital acquisition financing in a way that would steadily increase the earnings of A-Co beneficiaries and also enhance the rate of return on A-Co's assets, discretionary revenues, and income and reduce its taxes.

Based on the assumptions specified below, Fig. 1 illustrates the potential wealth-enhancing, growth-sustaining features of an ownership-broadening economy and shows the increasing number of years of annual ownership-broadening acquisitions that will have paid for themselves over time so that additional income on those shares can be donated to the beneficiaries. Figure 1 assumes:

1. A seven-year cost recovery period for capital investment. (The same principles apply for a longer period.)
2. In every year, some number (N) of an economy's creditworthy companies have profitably utilized ownership-broadening financing to acquire some percentage (X) of their capital investments.

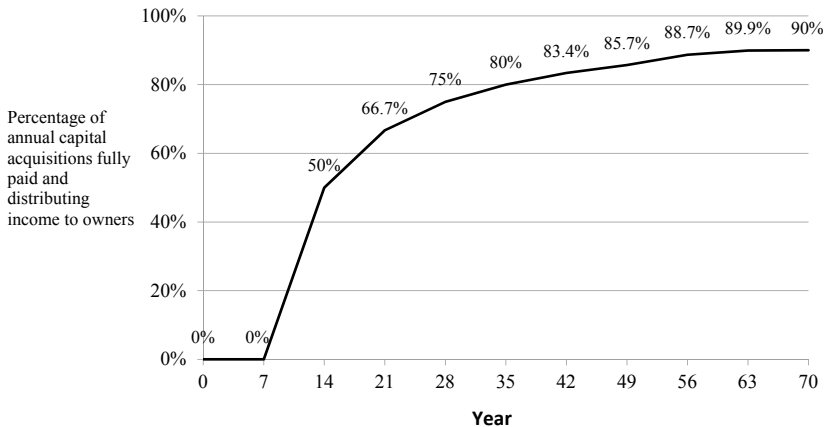


Fig. 1 Potential wealth-enhancing, growth-sustaining features of an ownership-broadening economy

3. The capital credit insurance is profitably priced to repay the lending banks for those financings that fail to repay their acquisition loans so that X is net of capital investment failures.
4. N, X, and the rate of return (R) on capital remain constant throughout the period (with growth, N, X and R would increase).
5. The shares issued are “full return” shares”: the corporation is required to pay to the trustee (in this instance TIAA) the full return on those shares (net of depreciation and reserves for research and development).
6. Because the corporation has no use of that return, there is no federal or state corporate income tax on that full return.
7. The trustee is required to pay the dividends first to satisfy the acquisition debt obligations to the lender and then to distribute the (taxable) income to the beneficiaries.

The broadening distribution of capital acquisition and income will increase over the years and thereby provide the basis for binary economic growth. Each year after the initial cost recovery period, an additional year of binary capital will have paid for itself and will be distributing capital income to poor and middle-class people. Consistent with the assumption of a seven-year capital cost recovery period, Fig. 1 shows the steady growth in annual capital acquisitions. In the eighth year, the first annual acquisition of capital will have paid for itself and will begin paying its full return to the new owners. In the ninth year, the second annual capital acquisition will be fully paid for and will therefore begin paying its full return to the new owners. In fourteen years, 50%, and in the twenty-eighth year 75%, of the annual capital acquisitions will have paid for themselves and will be paying their full annual return to the new owners, and so on. In the long run, the linkage between supply (in the form of the incremental productiveness of capital) and demand (resulting from the widespread market distribution of capital income to consumers) approaches 100%. The more the binary financing that is undertaken, the greater the distributional growth effects. If the rate of return on capital investment increases (as the principles of inclusive capitalism predict would occur in an ownership-broadening economy), then the curve shown in Fig. 1 would rise more steeply and approach the specified percentages sooner.

5 MAINTAINING MARKET SHARE IN A GROWING ECONOMY

To maintain market share in the projected growing economy, based on their capital investment planning horizon, producers will have to increase production and productive capacity *before* binary income begins to be distributed to its new owners. Because present demand for capital goods is positively affected by anticipated future demand for consumer goods, the broader distribution of capital acquisition and capital income should be reflected in increased employment of labor and capital within producers' capital investment planning horizon. With a capital cost recovery period of seven years, and a capital investment planning horizon of four years, market incentives for increased capital investment and labor employment by producers of consumer goods might materialize for some producers in the fourth year. Furthermore, the producers of capital goods needed by the producers of consumer goods to increase their productive capacity may experience market incentives for increased capital spending and labor employment as early as the first year.

6 ADDITIONAL BENEFITS OF INCLUSIVE CAPITALISM FINANCING

Beyond increasing capital income for poor and middle-class people, some additional beneficial effects of a broader distribution of capital acquisition that will enhance the prospects of sustainable economic growth, and that may be immediately reflected in the prospects of a binary economy, are:

1. **Reduction in Welfare Dependence and Welfare Expense:** As capital income is more broadly distributed to welfare-dependent people, government transfer payments can be reduced.
2. **Increase in Tax Revenues:** As capital income is more broadly distributed to individual taxpayers, they will pay more in taxes thereby increasing government revenues.
3. **Reduction in Tax Rates:** With the reduction in welfare dependence and the widely experienced increase in taxable income, there is the basis for a reduction in tax rates while maintaining and even increasing government revenues.

4. **Tax benefits for Ownership-Broadening Corporations:** Participating corporations whose shares (1) provide binary beneficiaries with additional taxable income, or (2) allow for reduction in welfare payments, may be given a tax credit or deduction representing some portion of the increased government revenues and/or reduced government spending occasioned by the earnings distributed to binary beneficiaries as dividends on the binary stock of the participating corporations (e.g., every dollar dividend paid to a welfare beneficiary might reduce welfare payments by fifty cents and earn the corporation that distributed the dividend a twenty-five-cent tax credit).
5. **Enhanced Corporate Profitability:** With enhanced corporate profitability, wealth, and share-value, and with lower need for government spending, the financial soundness of private- and government-sponsored retirement plans (and therefore retirement security) will be enhanced.
6. **Enhanced Sovereign Credit Ratings:** Financial data used to assess sovereign creditworthiness will improve, including (1) government revenues, expenditures and debt and (2) GDP. In light of the sustained effect of ownership-broadening financing set forth above, the creditworthiness of the sovereign debt of countries that employ the binary approach will increase.
7. **More and cheaper financing for start-ups:** As poor and middle-class people are provided a more competitive means of acquiring the least risky, most insurable, capital acquisition, well-capitalized people will have incentive to move further out on the investment risk curve, thereby providing more financial capital for entrepreneurial activities, the development of new technologies, start-up and smaller companies.
8. **Less risky and expensive, more insurable, and profitable investment:** The growing capital-based consumer demand generated by binary financing will make more capital investment creditworthy and profitable and less risky, and therefore more insurable, less expensive, and more profitable.
9. **Reduced amplitude of boom and bust cycles:** With a broadening distribution of capital ownership and income—so that the supply generated by technological change and increased investment will be increasing and balanced by a corresponding increase in

demand—the amplitude of the booms and busts of business cycles will be reduced.

10. **Reduced systemic risk**

7 FROM MACRO- TO THE MICROECONOMIC, INDIVIDUAL CORPORATE LEVEL: SOLVING THE FREE-RIDER-FIRST ACTOR-COORDINATION-COLLECTION PROBLEM

However, even with the prospect of these widely shared benefits, a problem that might be understood as a combined first-actor, free-rider, coordination, and/or collective-action problem (hereinafter, “free-riding” or “the free-rider problem”) would remain that inhibits ownership-broadening binary financing because there is no guarantee (and good reason to doubt) that the projected aggregate benefits from ownership-broadening capital acquisition would be sufficiently captured by a capital ownership-broadening corporation to make ownership broadening the most wealth-enhancing compared to other financing techniques. For example, suppose A-Co. manufactured automobiles and would find the ownership-broadening technique the most corporate wealth-enhancing approach but only if it could capture sufficient gains from the consequences of doing so. If A-Co were “encapitalize” its employees, customers (who previously bought its autos), neighbors, and select welfare recipients, those beneficiaries would likely spend their discretionary capital income at least initially on immediate needs and wants of food, clothing, shelter, utilities, communication, health care, entertainment, and to the extent they bought autos—they might prefer autos made by A-Co competitors. Thus, companies that chose not to broaden or only minimally broaden their share ownership would “free ride” on benefits of more broadly distributed consumer demand created by other corporations engaged much more substantially in ownership-broadening.

Consider this problem from the perspective of four types of corporations: (1) producers that have an ongoing relationship to their customers either by contract or by convenience such as telephone, power, water, internet, airlines, insurance, and financial companies including banks; (2) producers of staples, household supplies, clothing, and other goods and services of the types typically bought by the corporation’s employees, neighbors, and the general public (including welfare recipients) such

as national grocery stores, retail stores, restaurants, service stations; (3) specialty producers of more expensive products (e.g., A-Co's autos); and (4) producers of capital goods for industries, governments, and very wealthy people—goods that employees, neighbors, and welfare recipients are not likely to purchase (e.g., airplane manufacturers). There is reason to believe that with cooperative planning among all four types of major corporations, and some government assistance, free-riding can be effectively addressed.

The free-riding for all of the foregoing producer types would be mitigated by any tax credits (not subject to free-riding) given to ownership-broadening corporations whose dividends on binary shares yield increased government tax revenues and reduced welfare payments. There would also be a mitigating direct benefit (not subject to free-riding) resulting (1) from motivation, productiveness, loyalty, and gratitude that would likely be engendered among employees from being able to acquire dividend-paying shares of stock with non-recourse credit on the strength of their employer-company's earning capacity and (2) from the good will that might be engendered from the public toward corporations willing to broaden their share ownership by way of the ownership-broadening trusts. The free-riding would also be somewhat mitigated by the encapitalization of customers in proportion to their patronage of the goods and services produced by the participating corporation with dividends paid to the customers in the form of credits against future purchases. Such ownership-broadening might be reasonably expected to attract customers from competing producers that do not offer such inclusive benefits.⁸ The free-riding would also be mitigated in company towns and city neighborhoods in which the greater wealth of "neighbor" beneficiaries results in benefits to the ownership-broadening, participating corporations such as (1) lower property and/or other local tax rates, (2) improved neighborhoods, schools, and hiring conditions, and (3) lower crime and insurance rates.

Another way of mitigating free-riding might be by way of cooperative coordination among "complementary producers." For example, because "frequent flier" miles earned on one airline become more valuable when

⁸ Somewhat like many frequent-flier programs, the ownership-broadening trusts could include customers who have a continuing relationship with corporations like energy utilities, telephone, internet, and insurance companies, major retailers, and banks. Like credits for mileage flown, dividends can be paid in the form of credits against future purchases.

they may be used to travel to destinations not served by that airline, cooperating airlines have negotiated formulae for sharing the benefits and costs of patronage. Similar incentives for cooperation exist economy-wide among the complementary producers of food, clothing, shelter, health care, transportation, communication, entertainment, and other goods and services that poor and middle-class people would purchase more of if they had the capital earning capacity to do so. The expected benefits of an economy characterized by growing production-based consumer demand, tax credits, reduced welfare dependence and tax rates become greater as the ownership-broadening approach becomes more widely understood and implemented in a coordinated fashion. If the principle of binary economic growth is widely taught and given credence, then it would seem that many major corporations would benefit from its widespread implementation; and it would be in their rational interest to promote coordinated implementation. No major economy is without trade and business associations that regularly meet, plan, lobby, and act in concert to improve the business climate for their profit-seeking activities. Through existing channels of communication, A-Co may negotiate similar arrangements with the complementary producers mentioned above.

The most difficult cooperative challenge exists with respect to the type four producers like airplane manufacturers. Except for the gains from tax benefits and encapitalizing employees, such producers will not likely be aided by the techniques discussed above. However, an additional anti-free-riding technique may be employed to aid the type four producers and also the other three: Without any change in state or federal law, corporations have wide latitude in specifying the terms of the shares they issue. Thus, in addition to the full return features discussed above, ownership-broadening corporations could issue shares subject to the following terms: (1) The full return dividends will be paid in cash to satisfy the acquisition debt obligations the lender; (2) thereafter such dividends will be paid to the ownership-broadening trust in the form of transferable credits usable to purchase products of the issuing corporation or its designate(s); (3) at the election of the beneficiaries, (a) transferable certificates for the credits will be issued to the beneficiaries who could sell them in private- or government-sponsored exchanges and/or (b) acting as a fiduciary for the beneficiaries, the trust would use best efforts to sell those credits for cash to would-be customers of the issuing corporations or its designates. The producer-issuers, their designates, and their beneficiaries could together receive the benefit of ownership-broadening reduced by some negotiated

discount. In this way, the beneficiaries may receive less in value than the cash value of the increased demand they bring to the ownership broadening producer, but they will have acquired an ongoing share of the full return of corporate capital with no personal cash investment and no risk of personal liability for investment failure.

8 BINARY ECONOMIC GROWTH AND ENVIRONMENTAL SUSTAINABILITY

An in-depth consideration of the synergistic relationship between inclusive capitalism and environmental sustainability is beyond the scope of this chapter. A few observations follow:

1. Binary economic growth brings with it the potential for environmental degradation.
2. But it will also make greener technologies and environmental preservation more affordable, environmental regulation more politically feasible, and voluntary population control more likely.
3. The long-term solution to environmental sustainability generally requires technological advance to produce affordable greener technologies.
4. Systemically, such technological advance which generally reduces labor content per unit of production and requires therefore greater need for (1) more pay for less work, (2) redistributed income, and/or (3) broadening capital acquisition with the earnings of capital.
5. Environmental sustainability requires sustainable earning capacity (Hall et al. [2019](#)).

9 GREATER GROWTH WITHOUT REDISTRIBUTION

Binary economic growth does not require redistribution. Having been taught that there is an additional plausible principle relevant to the analysis of per-capita growth, neoclassical efficiency, and fuller employment, market participants are free to include or disregard it in determining their economic behavior. All transactions faithful to the principles of inclusive capitalism are voluntary. The principles of inclusive capitalism merely

reveal plausible ways to render more equal and competitive the opportunities and benefits of capital acquisition that are (1) created, well-supported, and facilitated by government-maintained and protected financial legal and physical infrastructure and (2) routinely employed to facilitate to benefit a small percentage of people primarily in proportion to their existing wealth production people primarily in proportion to their existing wealth but (3) presently not open as a practical matter to most people. This deeper understanding of capitalism will enable market participants to price for themselves the value of broadening capital acquisition. When usually considering the various offers set forth above, A-Co's fiduciaries would be obligated to select the most wealth-maximizing (i.e., competitive) alternative. On that basis, if A-Co were to select Warren's offer, the other offerors could not complain of a redistribution of any of their property rights. A-Co would properly inform disappointed offerors that they simply did not make the most competitive offer. The same would be true if A-Co chose TIAA-Cref's ownership-broadening offer as the most competitive offer.

According to the law of private property, existing ownership does not include the absolute right to acquire additional ownership, but only *the right to compete* for additional acquisition via voluntary exchanges. This applies to all would-be purchasers, including corporate shareholders who might prefer that the corporation whose shares they own would acquire the capital assets with retained earnings or borrowed money even if it would be less profitable to the corporation than acquiring the same assets with the sale of shares at fair market value to investors who presently own no shares.

Regarding certain "extraordinary transactions," governing corporate law usually requires shareholder approval. If an ownership-broadening transaction approved by A-Co's directors is deemed extraordinary, shareholder approval sometimes requires a majority or super majority of the shares voted. If shareholder approval is required to complete a corporate transaction, shareholders can vote their selfish preferences (including for alternatives that do not maximize corporate wealth), but all shareholders would be required to abide by the required majority shareholder vote if required and by the decision of the directors if not required. (Many existing shareholders are institutional investors like the Ford Foundation, dedicated to eliminating inequality in all of its forms.) Charitable foundations an employee retirement system may come to favor ownership-broadening financing.

Thus, neither A-Co's existing shareholders nor other would-be purchasers may properly complain of redistribution if A-Co's board properly determined that the ownership-broadening sale to the constituency trust was the most competitive alternative. Real redistributions do occur when corporate shares are sold in contravention of specific property or contractual rights, or for less than fair value, but otherwise a sale of corporate shares to non-shareholders to serve a wealth-enhancing corporate purpose violates no rights of existing shareholders.

Accordingly, when duly approved by the governing corporate process, the promised benefits of ownership-broadening capital acquisitions for poor and middle-class people and the resultant binary economic growth are not achieved by taking anything away from others or by violating any existing property or contractual rights. All shares acquired by the constituency trusts for the binary beneficiaries are fully paid for at fair market value by the earnings of the capital acquired. Dividend income earned by the binary shares (used either to repay the share acquisition loan obligations and/or to provide capital income to the binary beneficiaries) will not be paid unless all antecedent costs. The earnings received by the binary beneficiaries are earnings of *their* shares; they are not the redistributed earnings of others.

10 GOVERNMENT OWNERSHIP-BROADENING POLICIES

The basic logic underlying the binary benefits that plausibly flow from ownership-broadening binary financing springs from the confluence of (1) the principles of inclusive capitalism, (2) widely accepted principles of corporate finance, (3) the corporate wealth-maximizing duties of corporate fiduciaries, and (4) the economic self-interest of investors. Depending on the magnitude of binary growth, these principles alone might sufficiently incentivize substantial, profitable, ownership-broadening capital acquisition with the earnings of capital. Nevertheless, to facilitate such capital acquisition, several government facilitative policies actions would be helpful and desirable.

First, facilitative government action would be to eliminate the corporate tax on corporate income paid to the ownership-broadening trusts to enable the trustees first to repay the share acquisition loans and then to pay dividends to binary beneficiaries. This tax relief can be wholly justified on grounds of both economics and justice. Because the corporations have no use of the income that it is require to distribute to the trustees,

there is no reason to tax it on the corporate level. Moreover, taxing that corporate income would retard the repayment of the acquisition debt and reduce the growing capital income paid to the beneficiaries, and thereby reduce the benefits of ownership-broadening outlined above.

It is also noteworthy that there are many “second-round benefits” that existing capital owners receive that are denied to people who own no capital: e.g., access to the pre-tax (untaxed) earnings of capital by way of investment tax credits, deductions for research and development, depreciation (often accelerated), offshore (usually capital) income, executive compensation, and other strategies for “zeroing out” corporate income. These “second-round benefits” ways greatly assist existing shareholders to acquire, maintain, and preserve additional capital with pre-tax corporate revenues. They benefit people by way of capital ownership once they have acquired capital but are denied to people who presently have little or no competitive access to the “first- round ” of capital acquisition with the earnings of capital that would enable them to become owners. These substantial second-round accrue to shareholders a largely in proportion to existing wealth. These many ways provide little or no direct benefit to people with little or no capital ownership. Taxing the corporate income on shares acquired by ownership-broadening financing would not only reduce competitive access of poor and middle-class people to the “first round” of pre-tax capital acquisition with the earnings of capital, but would also perpetuate the denial of the second-round benefits and thereby would have the effect of increasing the severe disparity that results from denying poor and middle-class people the competitive economic opportunity to acquire capital with the earnings of capital that richer people routinely enjoy.

Second, to help diversify the investment risk of ownership-broadening beneficiaries, the trustees could be allowed to diversify the investment risk of their beneficiaries by transferring some of the shares to a “mutualized” account in which beneficiaries from multiple ownership-broadening employers would own a diversified portfolio of such transferred shares.

Third, to facilitate the availability and reduce the cost of private capital credit insurance, the government might establish a national ownership-broadening capital credit reinsurance entity modeled after the FHA home loan reinsurance program. This reinsurance entity might or might not be backed by the full faith and credit of the government.

Fourth, to bring down the cost of credit for ownership-broadening financing, a nation's central bank might monetize ownership-broadening loans until they are retired.⁹

To benefit from the advantages of government reinsurance and monetization, qualified binary financing might be restricted to the economic basics (the essential needs) such as food, clothing, shelter, healthcare, education, and energy) and restrictions might also be based on ecological concerns.

Moreover, as with any government-facilitated program that extends opportunity to people, eligibility and antidiscrimination rules for determining beneficiary participation would be needed. Likewise, rules governing the qualification and duties of ownership-broadening trustees, lenders, and capital credit insurers would be seemingly desirable.

11 CONCLUSION: A NEW ROLE FOR BEHAVIORAL ECONOMICS

This chapter has presented a principle of per-capita growth, neoclassical efficiency, and fuller employment not found on these subjects in the widely shared scholarship on the history of economic thought:

A broader distribution of capital acquisition with the future earnings of capital creates the rational expectation of a broader distribution of discretionary capital income in future years (to people with a higher propensity to consume) and therefore greater incentive to employ more labor and capital in earlier years.

⁹ An in-depth discussion of monetization of ownership-broadening capital acquisition is beyond the scope of this chapter. With a default real growth rate of 2% for the US economy, to avoid deflation and too much inflation the Federal Reserve targets the money supply to produce a mild 2% inflation rate by purchasing (monetizing) US government bonds through its Open Market Committee, thereby adding to the money supply. It could reduce that monetization (of past government spending) and instead monetize capital ownership-broadening bank loans. This practice would liberate such financing from the past financial saving representing the value of antecedent work of labor and capital, and would likely reduce the financial cost of such finance to an effective interest rate in the range of somewhat below and slightly above prime. For a description of the financial and economic aspect of central bank monetization of ownership broadening-financing, see "Beyond Austerity," supra note 6, at 2002–2003, and "Unutilized Productive Capacity, Binary Economics, and the Case for Broadening Capital Ownership," supra note 6.

If widely taught along with the “received economic wisdom” regarding these subjects, and if given credence, this principle will change the economic behavior of market participants and the likely distribution of financial incentives, economic opportunities, and capital wealth. Just as experiments show that teaching the principles standard economics persuades economics majors to regard more selfishly (than non-economics majors) the propriety and efficacy of narrow monetized self-interest, so too will the teaching of inclusive capitalism promote a more rigorous and holistic perspective that comprehends the growth-enhancing economic efficacy, justice, and morality of inclusion that flow from this principle. It will provide the understanding to enable all people democratically (individually) to participate in the evaluation of the economic consequences of broadening capital acquisition with the earnings of capital.

A growing number of economists, academic in other disciplines, and members of the public have come to appreciate its foundational significance in that it:

reveals how business corporations may voluntarily choose to broaden their share ownership to include poor and middle-class people, enhance the earning capacity of those people, improve corporate profitability as well as shareholder wealth, and lay the structural economic foundation for sustainable growth. (Arestis et al. 2021)

Thus, it provides competitive entry into the board rooms of the largest, creditworthy companies by sophisticated, well-capitalized financial fiduciaries (that presently represent people and entities primarily only in proportion to their existing wealth) empowered to also act for poor and middle-class people (not only as a matter of justice, morality, charity, and corporate social responsibility, but as a matter of competitive right). Precisely how this entry affects human and institutional behavior and its effect on values and prices presents a rich array of research opportunities for behavioral economists, social psychologist, political scientists, and others.

It is in fundamental harmony with systemically important principles favored and advanced by John Tomer regarding (1) behavioral economics, (2) socio-economics, and (3) the principles of the scientific method (which always require the questioning of fundamental assumptions and an openness to alternative theoretical approaches.

On September 29, 2017, John write, “Put me down as favoring inclusive capitalism.” John would be pleased to have others join him.

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John Tomer's Reconceptualization of the Concept of Human Capital

John B. Davis

I INTRODUCTION: JOHN TOMER AS A SCHOLAR, HUMANIST, AND CRITICAL THINKER

John F. Tomer was an active scholar and researcher, a critic of standard neoclassical economic thinking, a socioeconomist and social economist, a behavioral economist, and a caring person who spent a life dedicated to improving people's well-being through his efforts to broaden and humanize economic theory. He made many contributions to current progressive thinking across his long career. His central focus and the principle theme in his work were the concept of human capital. His organizing frame was human development. In this chapter, I review and discuss the nature and breadth of John's contributions and comment on further possible paths forward his work might inspire.

From the beginning of his career, John was committed to investigating and extending the concept of human capital. His PhD thesis at

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Rutgers University examined how the human capital concept could be applied to the ways in which businesses organized themselves and how this influenced overall economic growth (Tomer 1973). His first book made popular a new concept of organizational capital seen as a special type of human capital (Tomer 1987). Whereas traditionally economists had believed that firms only produced more goods and services when they increased their labor and capital, John demonstrated that output could also be increased without addition of labor and capital when firms improved how they were organized. From this, it followed that across all firms in an economy increases in organizational capital contributed to countries' annual rate of economic growth (Tomer 1981). John's perspective, he recognized, is embedded in Harvey Leibenstein's x-efficiency theory (Leibenstein 1966), wherein how the firm is organized and the preferences of all firm members affect firm productivity.

John went on to develop a broad understanding of human capital that included the concept of social capital and a new concept of personal capital. In his last book, he brought together his thinking on these subjects over many years and applied it in a wide-ranging way to the problem of human development, including the problem of human obesity (Tomer 2016). The human capital concept, he argued, possessed many under-appreciated dimensions whose understanding and investigation could improve our understanding of the economy and the social dimensions of the economic process. Seeing what they involved, he argued, required that one go beyond the boundaries of standard mainstream economics and its inadequate conception of people and society. Consider, then, how a critique of this thinking began with rethinking what the standard human capital concept involved.

2 'STANDARD HUMAN CAPITAL: A CRITICAL VIEW'

The title of this section is one Tomer used in his last book. It signals that his contributions to our thinking about the human capital concept began with a critical evaluation of the traditional, mainstream formulation. At the very beginning of his studies in his PhD. Dissertation, the stimulus for John's thinking about what economics needed was Gary Becker's highly influential *Human Capital* book (Becker 1964). Becker's book when it first appeared had a revolutionary effect on economists' thinking, because he applied the capital concept, thought then only to be embodied in physical things such as machinery and equipment, to

human beings, and also because initially many commentators saw the application of the concept of capital to human beings to violate something fundamental about what people were thought to be. Becker's argument, however, was more modest than it seemed, since all he had argued in applying the capital concept to people was that people acquired education, experience, and skills, something everyone accepted, and since this raised their earnings, doing so functioned like businesses adding machinery and equipment to improve their earnings. The idea that capital could be 'embodied' in people soon was taken to be only metaphorical and accordingly ceased to be objectionable to most commentators.

Yet while Tomer accepted the idea that capital be embodied in people, he also thought that the standard human capital concept did not do justice to the many ways in which people could be changed by different kinds of investments in them. Becker's basic idea was an important innovation, but its formulation in conventional neoclassical terms meant that conveyed a narrow conception of human development. He began by explaining this in terms of the difference between cognitive and noncognitive types of human capital.

Insofar as standard HC [human capital] is concerned with education and training, it implies that HC investment has an individual, cognitive, and machine-like nature. That is, HC investment is a process that involves putting cognitive inputs into individual humans in order to raise individual outputs. Standard HC theory ignores for the most part the possibility that HC investment might contribute to noncognitive human development or changes in human relationships. It also ignores the importance of human relationships as a factor that might contribute to capacity increasing HC formation. (Tomer 2016, p. 5)

The chief problem with the standard HC concept, then, is that it is based on a narrow view of individuals as socially isolated beings and a limited understanding of human development that associates it strictly with cognitive development. Consequently, what was instead needed was a broad, social theory of HC investment that also included attention to the importance of noncognitive human development and all that this involved. People's noncognitive development derived from their interaction with others and their social relationships and also from people's personal psychological development.

One pathway forward in developing a broader theory, then, was to add a social capital concept to HC theory. The social capital (SC) concept had been proposed relatively soon after Becker's human capital concept and was soon an important subject of investigation in sociology. Some economists thought it a meaningful extension of the HC concept, but most did not (e.g., Solow 2000), and it never became widely accepted in economics. However, Tomer's early thinking about organizational capital involved a form of social capital. Social capital is understood to reside in trust relationships characteristic of different forms of social interaction—in businesses, families, communities, and institutions (see Bourdieu 1986; Putnam 2000). Organizational relationships in firms also depend on trust. Social capital also functions like HC in that investments in it increase the fruits of economic activity. Nonetheless, the emphasis on trust and social relationships does not fit well with standard theory's explanation of individuals as always engaged in self-regarding calculation and reasoning.

Another pathway forward in developing a broader theory of HC was to add a concept of personal capital (PC), a concept not systematically developed in economics and often confused with HC. For Tomer, however, personal capital like HC is embodied in the individual, but is noncognitive in nature. "Personal capital relates to an individual's basic personal qualities and reflects the quality of an individual's psychological, physical, and spiritual functioning" (Tomer 2008, p. 19). A person's personal capital certainly interacts with their cognitive HC as it is embodied in learned skills and experience, but it also refers to a distinctive capacity people develop associated with what kind of person one is. Thus, a person's emotional intelligence is an important aspect of their personal capital and like HC in the standard sense contributes to their success in whatever activities they undertake (Tomer 2003). Other forms are a person's moral capital, or what others see as their moral character, and a person's emotional and intellectual capital, following the work of Daniel Goleman (see 1995).

If we then contrast these SC and PC concepts with Becker's more limited HC concept, an important difference between them is that the former can be seen to be forms of intangible capital compared to Becker's tangible HC. Yet how people acquire SC and PC is also observable, though not in the same ways and in the same sorts of settings Becker emphasized. SC and PC involve intangible forms of HC, then, not because we cannot explain their acquisition, but because it occurs in less

simple settings with more complicated causal relationships that operate in the relatively straightforward classroom and factory floor settings.

Tomer's broad theory of HC, then, includes both cognitive or tangible and noncognitive or intangible forms of HC. This expansion is important for understanding his view of human development. If the standard HC view gives us a traditional economic understanding of human progress tied to the idea of raising productive capacity and economic growth, Tomer's broader HC theory gives us a socioeconomic understanding of progress framed in terms of improvement in human relationships and personal growth. Let us turn to that understanding.

3 HUMAN CAPITAL AND HUMAN DEVELOPMENT

To understand the motivations behind Tomer's thinking in his development of HC concept, it is important to see what was involved in his view of economics' purpose in society being to advance human development. Human development can of course mean many things, and even economists trained in standard neoclassical thinking may claim it as a motivating concern. Yet for most of them, to the extent that they employ the idea, it refers to economic welfare, which is defined in terms of individual utility maximization. That is, welfare is a subjectivist concept involving preference satisfaction, and higher levels of preference satisfaction, which efficiency judgments recommend, are what most standard economists understand as human progress.

Tomer had a far richer understanding of human development (HD), then, that drew on both the humanities and other sciences.

First, it incorporates the perspective of developmental scientists whose field of study broadly encompasses HD in physical/biological, cognitive, and psychosocial domains/behaviors Second, the HD concept is inspired by the humanistic psychological perspective of Abraham Maslow (1943) ... notably his hierarchy of human needs Third, it is informed by research on neurodevelopment Fourth, the HD conception here has been influenced by Ken Wilber's (see e.g., 2001) conception of how humans develop in an unfolding series of stage and levels from lower order to higher order along many dimensions or lines. (Ibid., p. 20)

Building on Maslow's famous pyramid representation of a human hierarchy of needs, Tomer then lays out his own pyramid design of

human development with three developmental pathways: “(1) educational and cognitive development, (2) psychosocial development, and (3) brain development (or neurodevelopment)” (Ibid., p. 20). Rather than Maslow’s two-dimensional pyramid, Tomer’s is a three-dimensional solid with three sides, each of which corresponds to one of these three developmental pathways (see Ibid., pp. 20–24).

Note the ways in which this conception goes beyond the neoclassical conception of welfare. The emphasis on need takes it beyond the standard emphasis on desires and preferences. The different pathways of development concern different distinct aspects of human nature rather than just one. The reliance on what the humanities other sciences contribute to understanding human development goes well beyond economics’ customary self-isolation as a science. Indeed, Tomer’s whole focus on development brings a dynamic understanding to the subject of how people can be better off that is missing from the economics’ comparative static type of methodological reasoning. If that latter approach, then, employs a relatively simple, one-dimensional type of analysis, being only concerned with increasing people’s preference satisfaction, Tomer’s framework is multi-dimensional and complex, possessing multiple, interacting aspects of human development. In a word, Tomer takes human development seriously and accordingly does not hesitate to draw on the full range of theoretical and empirical resources the humanities and other sciences provide for its investigation.

From this perspective, development means starting somewhere and getting somewhere else. That is, over time people go through different interacting processes of development. That overall development can consequently be more or less successful depending on how many factors affecting the conditions of people’s lives interact with one another. Nonetheless, certain human development sequences have been clearly identified, one of which underlies Tomer’s insistence that we distinguish cognitive and noncognitive types of HC accumulation. Thus, childhood psychology has shown that moving from childhood to adulthood people first develop primarily on noncognitive levels and then undergo a shift from those more noncognitive types of development to greater involvement in more cognitive types of development. This has led to one of the important early lessons learned about formulating policies strategies for promoting human capital investment, namely, that additional attention needs to be given to how children learn and develop in becoming adults.

As Tomer's critique of Becker's emphasis on a cognitive conception of HC accordingly demonstrates, not paying attention to the importance of early childhood noncognitive development runs the risk that societies will neglect making HC investments that underlie the cognitive HC investments Becker describes. Becker's HC investment strategy largely targets adults for whom cognitive human development is indeed increasingly important. Yet those types of investments come on a foundation of early life HC investments of a different type, as now recognized, Tomer notes, by many developmentally oriented economists (see, e.g., Heckman and Masterov 2017). We should realize, also, that while some, particularly higher income families will be still successful in supporting their own children's noncognitive development by making in-household HC investments, many other families with lower incomes and thus less household resources will be unable to make these investments. The "result has been a very substantial increase in educational and income inequality" (Tomer 2014), now seen as a serious problem in many societies. At the same time, that many societies have under-invested in these forms of HC points toward opportunities for advancing human well-being likely to have high rates of return.

Yet Tomer did not restrict his critical thinking about HC and human development to standard theory's omission of noncognitive HC investment. His knowledge of behavioral economics made clear to him that neoclassical economics does not clearly understand how people's acquired cognitive HC as well. Neoclassical economics of course extols human rationality and assumes that people make rational decisions. This would consequently also apply to their decisions regarding HC investments in education and training. However, as Tomer reminds us, people regularly err in their decision-making and are in the words of Daniel Ariely "predictably irrational" (Ariely 2009). There is a bright side to this, however, in that once we recognize that people are often not rational, this tells us "what we can do to remedy these errors" in order to "raise human decision-making capability" (Tomer 2016, p. 39).

This starts, then, with producing an inventory of types of decision-making errors people commonly make. Following behavioral economists Herbert Simon, Daniel Kahneman, and George Loewenstein, essentially they are that "our minds make many cognitive errors ... have limited cognitive capacity to deal with the complexity of the real world ... [and] often fail in decision making when strong negative emotions have been aroused" (Ibid.). The consequences of these limitations are that we often

“fail to get what we want ... [and] focus on trying to what is not really and truly in our best interests” (Ibid., p. 58). Our rationality is bounded, and this creates opportunities for HC investment that will assist us in achieving what is” (Ibid., p. 58).

Overcoming how the problem of bounded rationality thus required we go beyond standard thinking about rationality. Tomer saw this as a matter of setting aside neoclassical emphasis on instrumental rationality or rationality of means and a substitution of a rationality of ends or a true rationality. Thus:

The ultimate rationality of ends, *true rationality*, occurs if one has transformed one’s actual preferences, and thus, comes to choose entirely in line with one’s true preferences. An element of true rationality is present when people are making progress and acting in accord with their true preferences. (Ibid., p. 56)

But what are people’s true preferences? Tomer’s rich view of what human development involves and understanding of what we can learn from behavioral economics research both depend on answering this question. His answer is that they are the preferences that a ‘smart’ person would have. But what, then, is a ‘smart’ person in economic life? I turn then to what this means, and begin by distinguishing Tomer’s view from recent dual selves models in mainstream economic theory that identify people with their true preferences.

4 THE ‘SMART’ PERSON IN ECONOMICS

Dual selves models in mainstream economics are a response to what has been called the ‘reconciliation’ problem. The problem is that, if behavioral economics provides new foundations for positive economics, showing people are often not rational, positive and normative economics are no longer obviously consistent with one another, and therefore somehow need to be reconciled (McQuillin and Sugden 2012). In neoclassical theory, no such reconciliation was needed since people were believed to always act rationally, and policies then aimed at promotion preference satisfaction on that basis. Yet if agents’ preferences exhibit various decision biases and heuristics, and individuals do not always act rationally, then it is unclear what policy recommendations should target. Should it be the satisfaction of the preferences agents would have were they rational

or should it be the satisfaction of the preferences people actually have? Related to this is the dual interest theory concept pioneered by John's colleague Gary Lynne (see Lynne 2020).

One mainstream response to this problem, then, was to adopt a two-tier understanding of people's preferences by arguing that people possess both rational and less-than-rational preferences, and treating their rational preferences as their true preferences (Bernheim and Rangel 2007, 2008). The goal consequently was to base normative economics on people's rational preferences and somehow set aside their less-than-rational preferences—what has been termed a “preference purification” program (Hausman 2012). The means of doing so was to elicit or discover their rational preferences, or determine what things they would prefer were they not subject to the various decision-making errors they were prone to making in ordinary circumstances. This was then to be the basis of a new ‘behavioral welfare economics’ that was essentially the same as the traditional welfare economics (Bernheim and Rangel 2009).

A problem with this was that eliciting people's rational preferences and setting aside their less-than-rational preferences entailed some sort of learning process in which a person moved from a psychological state to no psychological state at all (Kahneman 1996; Sugden 2015). Not only did this make little sense, but there was no psychological evidence that people ordinarily underwent this sort of process of discovery.

The other main response to the reconciliation problem gave up the distinction between rational and less-than-rational preferences, and substituted a *Homo Sapiens* conception of the person for the neoclassical *Homo Economicus* conception (Thaler 2000). Then, normative economics would target people who failed to make rational choices, but ‘choice architects’ would design choice settings in such a way as to ‘nudge’ people to make rational choices—a strategy labeled libertarian paternalism. The justification for this was that such policies were that they would “make choosers better off, *as judged by themselves*” (Thaler and Sunstein 2008, p. 5; original emphasis). Yet this encountered the same problem the “preference purification” program faced; namely, all the evidence was that people's preferences were the less-than-rational preferences commonly observed, and little suggested that they would prefer more rational choices of standard theory.

Tomer, then, also sought a ‘true rationality’ that results when one has transformed one's actual preferences to be in line with one's true preferences, but he departed from both the dual selves *Homo Economicus*

approach and libertarian paternalism *Homo Sapiens* view in characterizing the rational person as a ‘smart’ person. A ‘smart’ person was rational and less error-prone than the individual behavioral economics investigated, and was an individual who developed her rationality over a life-time of personal development along the different developmental pathways he describes in his account of human development (Ibid., p. 63). Thus, for Tomer, a person’s true preferences are the preferences people would have under two conditions: (a) they are preferences not subject to the different types of decision-making errors people commonly make, but also, and more importantly (b) they are the preferences an individual would have were they able to fully develop as person they are capable of becoming.

The ‘smart’ person view of the individual, then, represents a distinct response to what we have learned from behavioral economics—one based in a multidisciplinary understanding of what human life potentially involves (see Altman 2017, 2020). The developmental aspects Tomer draws upon were influentially developed by the famous developmental psychologist Erik Erickson (e.g., Erickson 1982). For Erickson, Tomer points out, every stage of human development is grounded in an earlier stage, so human development is cumulative in nature. However, when earlier stages are missed, an individual’s personal development may be distorted and impaired. Whether, then, people undergo a development that brings out their fullest capabilities depends on how their lives transpire, and surely, this depends in an important way on their relationships to others throughout their lives. Indeed, when the circumstances of people’s lives negatively affect their personal development, we have what Tomer calls “socioeconomic dysfunction” and “socioeconomic stuckness” (Ibid., pp. 81–82).

What does this involve? Tomer emphasized many factors operating on a micro-level that impact individuals in childhood, education, and adulthood, but from an economy-wide perspective the overriding problem operating across them all is economic inequality. Thus, he calls for ‘a New Behavioral Economic Model Explaining Inequality’ (Ibid., p. 94), the essence of which is that human capital investments of the different kinds he distinguishes in his account of human development are distributed more equitably across society so as to exclude no one and be fully available to all.

The next section, then, builds on Tomer’s inequality focus by saying more about the nature of social inequality, and in particular by exploring how certain types of social structures may reinforce and function as

barriers to realizing the human development goals he hopes can be achieved by more equitable human capital investments.

5 SOCIAL INEQUALITY OF SOCIAL GROUPS

Inequality in economics is generally measured according to differences in income across individuals or households, ignoring differences in their social characteristics. Yet sociologists compare people not simply as individuals but according to their gender, race, ethnicity, class, religion, sexual orientation, where they live, place of origin, etc. These social characteristics are then used to explain people's different social group identities. People of course have multiple social group characteristics or social identities, so they are then identified according to clusters of such characteristics or identities they possess, for example, being female, black, and living in an urban area; being male, Hispanic, and Catholic; etc.

An important question when we are interested in income inequality, then, is: what more do we learn about it when we look at it through the lens of individuals' social group characteristics? Measurement of income inequality, then, proceeds by ranking individuals across income classes, for example, from the highest decile, to the next highest decile, and so on down to lowest decile. When we distinguish groups of individuals according to their social characteristics, we also find that clusters of such characteristics can also be ranked in terms of income. For example, taking just gender and race, white men as a group on average have higher income than black women as a group on average.

This tells us something important about how policies that aim at increasing human capital ought to be targeted. Thus, on the reasonable assumption that low income individuals have lower levels of human capital and are more likely to benefit from additional human capital investments than high income individuals with higher levels of human capital, paying attention to differences in people's social characteristics provides important information regarding where society should make such investments. Accordingly, human capital investment policy ought to target social groups that are persistently disadvantaged in society.

A great strength of Tomer's analysis of human capital, we saw, is that he goes well beyond the training and education emphasis of mainstream human capital theory to introduce and explain the importance noncognitive or intangible forms of human capital. Social capital and personal capital for him are different from cognitive or tangible human capital in

that they depend on aspects of human life that cannot be easily explained in terms of individual calculation of a person's advantage. Social capital is built on trust relationships between people. Personal capital is the product of individuals' emotional and moral development. Both thus depend in important ways on the communities that people live in and other people with whom they tend to have long-term relationships.

Suppose, then, that persistently disadvantaged social groups in society rely especially on investments in human capital associated with noncognitive or intangible forms of human capital. Lacking the access that higher ranked social groups have to formal training and education, they rely on developing the forms of human capital that their communities and families create. It follows that human capital policy, in order to achieve the greatest gains, ought to target these forms of human capital and the social groups that depend on them.

Note that these conclusions assume social group rankings are stable over time. Yet it is often assumed that most market societies promote social mobility and that over time individuals' social characteristics do not determine the incomes they earn and the human capital they accumulate. Thus, economic inequality is measured in terms of income inequality of individuals or households.

However, there is considerable evidence that intergenerational income mobility in most market societies is low, meaning that people with particular sets of social characteristics earn the same sorts of incomes in the long-run rather than moving up or down across income classes. Thus, contrary to the view some have that racial inequality is not an enduring feature of U.S. society, Darity and Mullen have shown there exist long-standing income and wealth disparities between white and black individuals in the U.S. dating back more than three hundred years (2020, chap. 2). Chetty and his colleagues, using specific measures of intergenerational income mobility, have shown for the period 1989–2015 that African Americans have substantially lower rates of upward mobility and higher rates of downward mobility than white Americans (Chetty et al., 2018). Regarding inequality by gender, which some women's recent upward mobility suggests may have decreased, statistics for the U.S. shows that wage and income differentials between women and men remain significant and have not decreased significantly over time (U.S. Department of Labor 2014).

Thus, social group rankings, or rankings of social characteristics clusters, appear to reflect enduring social economic relationships in many societies, and fully understanding economic inequality accordingly depends upon understanding what makes those relationships persist. That is, if social stratification is fundamental to how economies work, we should ask what mechanisms are there within those economies that reinforce and sustain it? Tomer's critique of mainstream human capital thinking and extension of that thinking to overlooked forms of human capital, then, points us toward two mechanisms that tend to reinforce and sustain social stratification.

First, his argument that standard human capital theory is too narrow is based on its exclusive emphasis on cognitive, tangible education and training investments. Such investments, then, are likely to be made by individuals with greater access to formal, high-quality educational institutions and training. Those individuals who have this access are also likely to possess more highly ranked social characteristics, such as being white and male. Consequently, the mainstream treatment of human capital tends to formulate public policy that aims at increasing human capital in terms of greater opportunities for formal educational investments that favor higher ranked social groups.

Second, consider Tomer's emphasis on social capital and personal capital as overlooked dimensions of human capital development. If investments in formal education and training are less available for individuals likely to possess less highly ranked social characteristics, such as being female and black, they may rely more on what their communities offer in the form of social capital investments and on what family members can provide in the form of personal capital investments. Consequently, what Tomer recommends in paying greater attention to these noncognitive and intangible types of human capital is paying greater attention to the needs of individuals most likely to rely upon them.

Tomer does not frame his recommendations regarding human capital investment in terms of a social stratification analysis. He nonetheless does frame his discussion of economic inequality in terms of groups of people's unmet needs, and we can argue that what types of needs go unmet in many societies reflects recognizable relationships between social groups. Thus, it seems fair to say that a social stratification type of thinking is implicit in some form in his thinking. This seems to give greater power to his conclusions about extending the human capital concept beyond its traditional treatment.

6 HUMAN CAPITAL VS. CAPABILITIES

Tomer's early doubts about the standard human capital concept had roots in his deep interest in human development. When the concept was first advanced, others had similar doubts about it, thinking it was contrary to our intuitions about what human beings are to say that capital, a natural science concept that historically referred to tools and equipment as physical things, could be embodied in people. Yet most other critics lacked further understanding of what human development involved, and so the human capital concept as Becker had originally explained it was soon widely adopted in economics. In contrast, Tomer, in thinking of human capital in firms as organizational capital, did not begin with a concept of capital as physical tools and equipment. Organizational capital derives from relationships between people, and thus investments in human capital were investments in things people can do when acting together to achieve shared goals.

The difference here, then, is the difference between a concept of capital as a thing and a concept of capital as an action. Alternatively, the difference is between thinking of human development as the (net) production of more things as opposed to thinking of human development as gains in improving social relationships. Both perspectives are meaningful, but the problem with the thinking of many early critics of the human capital concept was that it only included the first perspective and often failed to acknowledge the second. Let us consider further, then, what the latter perspective includes in regard to what it tells us about human development.

When we think of capital as action, or as the result of action, we also think of individuals in economics as agents. Though the term 'agent' is commonly used in economics, the standard utility maximization view of individuals emphasizes states of individuals, or different levels of preference satisfaction, so the idea of being an agent that actively does things contributes little. Should we emphasize people's agency, as Tomer wishes to do when he describes them potentially as 'smart' persons, we instead focus on what people may be able to do rather than what states they may be in.

This focus on agency and action is central to thinking of people in terms of their capabilities, as in the capability approach of Amartya Sen, Martha Nussbaum, and others. Tomer acknowledges this approach and its relevance to thinking about human development in his recent book

(Tomer 2016, p. 203), but does not rely on it in his own discussion of human development. Yet the idea of people's capabilities, what they can be and do, is essentially what he is interested in when he criticizes the original concept of human capital. Thus, social capital and personal capital, his main extensions of the concept of human capital, are not very well understood when we think in terms of higher states of preference satisfaction investments in them would make possible. Rather, investments in social capital and personal capital change people's capacities for action, or their ability to do things and become different kinds of people—'smart' people as he says.

The human capital concept is nonetheless a powerful means of explaining human development, even if for most economists how it conceptualizes people limits those explanations to Becker's emphasis on cognitive and tangible sorts of investments. When we therefore go beyond this in the way shown by Tomer to direct our attention to noncognitive and intangible sorts of investments in people, we begin to be able to see other dimensions of human development framed in terms of human potentiality that might be better conceptualized as expansion of people's capabilities. Tomer has certainly pointed us in this direction, always thinking as a socioeconomist and social economist rather than as mainstream economist.

7 JOHN TOMER AS A BEHAVIORAL SOCIOECONOMIST

One of the chief faults of mainstream economics is its positivism and inability to see how values underlie economic thinking. This biases it to think of human capital in a physical way and to reduce economic agents to utility maximizers. John Tomer, clearly, started from a different view of the nature of economics as a science. His concern with human development—an idea largely missing from mainstream economics—presupposes a set of normative ideals regarding people's human potential, or the good to which they can aspire. This reflects his interest in Buddhist economics (Tomer 2017). People do not simply maximize utility but seek to become certain types of beings and live their lives in meaningful ways.

However, the challenge John discovered early in his career in deciding to become an economist was that the field offered quite little in its analysis of economic behavior that addressed his belief in people's human potential. His strategy, then, was to show, in the ways he redeveloped the human capital concept, that the standard view of behavior in economics

could be expanded and redirected to better capture how people acted and what their goals are. This meant he was particularly interested in what behavioral economics had to offer to economics, since that field began with a wider conception of people's motivations than the standard neoclassical approach employed. Thus, John was also a behavioral economist. At the same time, his views in important ways also transcended much of behavioral economics since it can be argued that behavioral economics is also vulnerable to the charge of positivism and thus also fails to sufficiently appreciate the role that values play in our thinking about people in economic life. If we, then, see his sustaining interest in human development as the chief anchor of his work across his career, it seems fair to characterize him as a behavioral socioeconomist. It is surely an estimable label to crown a person's career.

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PART III

Aspects of the Human Firm



John Tomer's Human Firm: How Behavioral Economics Has Helped Us Understand the Firm

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1 INTRODUCTION

In 1987, John Tomer published his first book, *Organizational Capital: The Path to Higher Productivity and Well-Being*, which compiled his ideas on organizational capital dating back to his 1973 dissertation. In that book, he focused on how the accumulation of organizational capital affects and helps explain worker effort, cooperation within the firm, cooperation between the firm and entities external to the firm, firm

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productivity, worker well-being, and economic growth. In 2016, John Tomer published his last book, *Integrating Human Capital with Human Development: The Path to a More Productive and Humane Economy*. In that book, he focused on the importance of understanding how the development of human capital in the individual interacts with the individual's biological and psychological development in terms of an individual reaching his or her full potential. Permeating all of John Tomer's work is the idea that we can learn more about how human capital accumulation has impact by taking a broader view of human capital.

In 1999, John Tomer published *The Human Firm: A Socioeconomic Analysis of its behavior and Potential in a New Age*. By using the term "human firm," Tomer (1999, p. 195) emphasizes that the firm at its core "consists of a group of people" and is embedded in a society, another group of people. In his opening to the book, Tomer (1999, p. 1) notes that "the human dimensions" (e.g., sociological, psychological, ethical, managerial) are left out of the traditional neoclassical theory of the firm. Tomer (1999, p. 1) explains that he writes this book because these human dimensions help explain why some firms develop to their potential but others do not, why some individuals self-actualize but others do not, and why society may achieve its potential but why it may not.

Here, we honor John Tomer by reviewing his life's work on organizational capital and human capital, focusing on how extending the theory of the firm to make it more human has enhanced our understanding. We begin by defining organizational capital as Tomer viewed it, while also including perspectives of other scholars. We then present how Tomer perceived the influence of organizational capital on organizational behavior. To put Tomer's work in context, we then review related key industrial organization ideas by Ronald Coase, Oliver Williamson, Herbert Simon, Richard Cyert, and James March. We then return to reviewing Tomer's work, focusing first on his emphasis that human firms have social goals that extend beyond profit maximization, focusing second on his emphasis that a firm is a place where individuals can and should self-actualize, and focusing finally on implications for government policy. We conclude with some summary thoughts on John Tomer.

2 ORGANIZATIONAL CAPITAL

John Tomer (1999, p. 2) defines organizational capital as “a kind of human capital in which productive capacity is embodied in relationships among people.” Relationships connect people within the firm and connect the firm to society. Investments in organizational capital improve relationships. Like accumulations of other types of human capital and physical capital, the accumulation of organizational capital improves productivity. However, Tomer (1987, 1999, 2008, 2016) emphasizes that organizational capital accumulation can generate improvements beyond productivity. It can enhance social performance and increase worker well-being by bringing out “the best in human nature.”

Tomer (1987, 1999) relates organizational capital to Leibenstein's (1966) X-inefficiency concept. A firm is X-inefficient when it is not producing up to its capability. There is slack, a difference between potential and actual output. Consistent with Leibenstein, Tomer claims slack is a normal state of affairs because business practices are less than ideal and because worker effort is less than its potential.

Tomer (1987, p. 147) emphasizes “the organizational capital concept directs attention to relationships, something economists typically ignore.” He spent most of his career fleshing out what we can learn by not ignoring organizational capital. His doctoral dissertation focused on examining a conjecture of Dennison (1967) “that advancements in management knowledge contribute to economic growth as much as advancements in technical knowledge (Tomer, 1987, p. 40).” In his dissertation, Tomer developed a measure of organizational capital and used Dennison's methods to estimate the impact of organizational capital on economic growth, demonstrating a significant impact. Specifically, he estimated that roughly 0.3 percentage points of the U.S. economies rate of economic growth are attributable to organizational capital.

Because organizational capital is embodied in relationships, it is a form of social capital. However, Tomer (1999, p. 196) emphasizes organizational capital is a special type of social capital. Most social capital develops as an evolutionary process unfolds, without intention as relationships develop. However, within an organization, relationships “more likely have been developed intentionally,” implying it can be intentionally accumulated.

Tomer (1999, 2008) describes organizational capital as hard and soft, which roughly corresponds to tangible and intangible. Examples of hard

or tangible include finance relationships and organizational structure. Examples of soft or intangible include motivations, values, commitments, enthusiasm, fairness, kindness, harmony, and compassion. Tomer (2008) emphasizes that economists have appreciated and studied the hard, tangible types of organizational capital more than the soft, intangible types. Tomer speculates that economists have focused more on the hard and tangible types because they are more comparable to physical capital, which is easier to measure and identify its effects.

Tomer provides a number of examples to illustrate his understanding of organizational capital. He identifies “a change in organizational structure that changes the channels of communication” as an example of “pure organizational capital accumulation” of the hard or tangible type (Tomer 1987, p. 27). In contrast, he identifies a worker learning to operate a machine as an example of “pure human capital accumulation” that is hard or tangible but not organizational (Tomer 1987, p. 26).

Because Tomer put much effort into identifying and delineating the impacts of various soft or intangible types of organizational capital, it is worth providing examples of those. Economists have much appreciated and significantly studied human capital in the form of education, but Tomer (2008, p. 82) emphasizes that the following non-scholastic competencies also contribute to success: goal setting, patience, ability to communicate emotions, initiative, ability to respond in unclear situations, and moral development. Tomer (2008, p. 84) identifies emotional intelligence as another important non-cognitive element of organizational capital. This is the capacity to recognize your own feelings and feelings of others. It also includes the ability to motivate yourself, to manage your own emotions, and to manage the emotions that arise in relationships.

Virtues are also a key element of organizational capital. “Smart people are virtuous”,

(Tomer 2016, p. 76), so smart organizations will seek to develop virtuous behaviors. A virtue is a habit of the heart, a settled good way of behaving (McCloskey 1999). Referencing McCloskey (1999), Tomer emphasizes the importance of having a balance of the four classical virtues—prudence, courage, temperance, and justice—and the three Christian Virtues—faith, hope, and love. Virtuous behavior may evolve unintentionally, but normally it must be intentionally developed (Tomer 2016, p. 200). Parenting is most common intentional force that instills virtue, but business culture can also develop virtues as they encourage or enforce particular ways of behaving. Virtues contribute to a happy life

individually, but they also can significantly enhance firm performance. For example, Tomer (2016) lauds McCloskey (1999) for recognizing the development of a virtuous business culture can reduce or eliminate opportunistic behavior. Opportunism is often individually prudent, but the motivation to act opportunistically (and injure others in the process) can be over-ridden when prudence alone is balanced with a sense of justice, some temperance, and some caring (i.e., love) for others.

The ability to make and keep commitments is another significant element of organizational capital. Sen (1977, p. 329) indicates the key “characteristic of commitment” is it “drives a wedge between personal choice and personal welfare.” Williamson (2010, p. 684) notes “credible commitments (often) take shape as economic actors consciously agree upon mechanisms that provide added assurance.” Tomer (1987, 1999, 2008, 2016) emphasizes the key type of organizational capital accumulation as identifying commitments people within a firm can intentionally make to each other, and to entities outside the firm, that can be made part of the firm culture. Williamson (2010, p. 684) also identifies “a history of good experience with a trader” as something that facilitates the ability to make and keep a commitment, because positive experiences provide “a positive reputation effect.” This illustrates that a firm cannot entirely control the accumulation of organizational capital.

Many other scholars have used the term “organizational capital.” It is useful to consider their definitions to put John Tomer’s perspectives in a broader research context. Liu and Chen (2009) usefully decompose organizational capital into elements that are power oriented, norm oriented, and knowledge oriented. Power-oriented capital includes the formal relationships of the organization that determine how the firm deploys power. Norm-oriented capital refers to the informal conventions and procedures that evolve within an organization that end up guiding daily behaviors. Knowledge-oriented capital refers to ways the firm diffuses and shares knowledge within the organization. Sullivan (2000) similarly defines organizational capital as including structural, procedural, relational, and informational elements. Weng’s (1999) definition also has multiple elements, recognizing organizational capital as determining resource deployment, facilitating resource-sharing, cultivating good employee-behavior, establishing organizational culture, and allocating power. Eriksen and Mikkelsen’s (1996) definition emphasizes the importance of information gathering, particularly the technological, procedural, and routine information needed to coordinate firm activities.

3 ORGANIZATIONAL CAPITAL AND ORGANIZATIONAL BEHAVIOR

Organizational behavior has developed into a separate discipline of focused study because of the general recognition that individual behavior within an organization depends upon the characteristics of the organization (Tomer, 1987, p. 2). Tomer (1999, p. 8) emphasizes investments in organizational capital influence the firm's capabilities for (1) good decision making, (2) socially responsible behavior, (3) entrepreneurial behavior, and (4) organizational learning. In this section, we flesh out the connection between organizational capital and firm capabilities.

John Tomer viewed adjusting relationships within the firm as one of the key ways a firm can accumulate organizational capital. Organizational relationships influence productivity because they impact worker behavior (Tomer 1987, p. 147). One strategy is to adjust organizational capital factors, so the utility for the worker is highest at the maximal level of effort (Tomer, 1987, p. 52). Tomer (1987, p. 153) viewed the conditions that make work alienating as being rooted in workplace relationships. Tomer (1987, p. 154) suggests employers can reduce alienation and enhance productivity by making the workplace more humane, more a place where workers can self-actualize. Tomer (1999, pp. 13–14) perceives there is a special opportunity to develop organizational capital when an employee first joins a firm. At that time, a new employee is especially able to develop a sense of commitment and absorb what it means to be a good citizen in the organization.

Because the firm is a human organism with a socio-political-economic nature, its capabilities depend heavily upon investments in intangible capital (Tomer 2008, p. 226). Tomer (1999, p. 14) recommends that firms move away from thinking of themselves as machines toward thinking more holistically, and he indicates a more holistic, human firm is developed by placing more emphasis on soft, non-cognitive factors in contrast to hard cognitive factors. In particular, Tomer (2016, p. 60) recommends that firms provide personal capital development for employees, developing their non-cognitive capacities, as key for improving worker productivity.

Tomer (1987, p. 70) recognizes the Japanese management style as a good model for how to create an employer and employee relationship that yields higher productivity. The common firm commitment to employing the employee for a lifetime is key. It saves employee acquisition and training costs by keeping turnover low (Tomer, 1987, p. 72). The

trust shown in employees allows employees to take risk and provides the firm to react to changes more flexibly in its environment (Tomer 1987, p. 82). More generally, Tomer (1987, p. 78) recognizes that much of the Japanese management style involves Akerlof (1982) type gift exchange, providing workers more motivation to provide more effort.

Acs and Fitzroy (1989) recognize Tomer's (1987) contributions to understand the firm from the organizational capital perspective. They identify long-term employment, flexible teamwork, and job rotation as management choices that yield productivity benefits, especially when production is complex. Like Tomer, they recognize the plant-level union and cooperative non-adversarial bargaining in the typical Japanese firm as being preferable to the low-trust collective bargaining that occurs in Western firms (Acs and Fitzroy, p. 313). The commitment to long-term employment allows firms to vary hours and redeploy employees internally in response to business cycles, rather than responding with layoffs. It also encourages workers to take the time to develop specific skills and team relationships.

An aspect of the Japanese management style noted by Tomer (1987, p. 74) is that it creates "an implicit psychological contract between worker and employer." Replacing more structured explicit contracts with less structured implicit contracts is an act of trust by the employer. Employees will tend to reciprocate positively, which reduces non-cooperation (Tomer 1987, p. 84). The less restrictive environment provides employees with greater opportunity for self-actualization at work (Tomer 1987, p. 85). Implicit contracts also allow organizations to manage complexity and uncertain change more flexibly and hence more effectively (Tomer 1987, p. 76). This flexibility, trust, and developed shared values and goals lower transactions costs, which allows a larger, less specialized firm to compete with smaller, more specialized firms connected by markets.

Tomer contended that the U.S. lost much of its competitive edge to Japan because it did not sufficiently embrace worker participation (Tomer 1987, p. 112). Changes in organization that increase worker participation are examples of additions to the stock of organizational capital. Key elements of worker participation include influence, feeling a part, the opportunity to make a real contribution, and the experience of working cooperatively (Tomer 1987, p. 87).

Tomer (1987, p. 112) suggests firms may hesitate to provide for greater worker participation because it introduces additional risk. As Acs and Fitzroy (1989, p. 313) note, the flexibility of U.S. firms to hire

and fire provides a flexibility that especially facilitates innovation. Moving toward the Japanese model provides more opportunity for worker participation within a firm, but less opportunity to bring in new talent and remove dead wood. Thus, as with other inputs that can increase productivity, increases in worker participation are subject to diminishing returns, so the optimal degree of worker participation will tend to vary across firms.

Tomer (1999, p. 9) labels an ideal model firm as a Z-firm, apparently named out of respect for the Theory Z management approach. The Z-firm is highly competitive and highly socially responsible because of strong investments in organizational. Summarizing its capabilities, Tomer (1999, p. 195) describes the Z-firm as a “human firm,” capable of

- i. effective decision making;
- ii. overcoming internal inefficiencies (e.g., lack of worker effort, and opportunism);
- iii. flexibly adapting to changes in its environment;
- iv. innovation;
- v. strong economic performance;
- vi. aligning interests of different stakeholders; and
- vii. social responsibility, environmental responsibility, and customer responsibility.

4 INDUSTRIAL ORGANIZATION: COASE

Referring to Alfred Chandler, Tomer (1987, p. 136) describes creating an organization as the “key entrepreneurial act.” The economics profession recognizes Ronald Coase for initiating the “attempt to discover why a firm emerges ... in a specialized exchange economy” (Coase, 1937, p. 390). Williamson (2010, p. 675) recognizes Coase (1937) for viewing the “firm and market” as “alternative methods of coordinating production,” and Williamson credits Coase for observing “the decision to use one mode rather than the other should not be taken as given (as was the prevailing practice) but should be derived.” Williamson (2010, p. 686) describes his “transaction cost economics project” as having “its origins in the puzzle posed by Coase in 1937: What explains the boundaries of the firm?” Tomer (1987, p. 17) describes “the motivation of the individual within an organization” as being “best understood as a transaction

between that individual and the organization.” Because Tomer’s conception of the firm fits well within the conceptions of Coase and Williamson, we review the perspective of Coase (1937) in this section and Williamson (2010) in the next section, raising aspects of Tomer’s work when doing so is relevant.

Coase (1937, p. 387) distinguishes the coordination performed by the economic system from the coordination performed by a firm—the economic system he describes as an “organism,” specifically distinct from an “organization.” As an organism, the economic system “works itself,” with the “direction of resources is dependent directly on the price mechanism.” In identifying the price mechanism as the “integrating force in a differentiated economy,” Coase (1937, p. 398) claims, “It is perhaps the main achievement of economic science that it has shown that there is no reason to suppose that specialization must lead to chaos.” Outside the firm, price movements direct production, which is coordinated through a series of exchange transactions on the market (Coase 1937, p. 388).

Within a firm, the entrepreneur, who coordinates production by directing it, replaces the coordination the market provides outside the firm. Coase (1937, p. 393) describes a firm as a “system of relationships which comes into existence when the direction of resources is dependent on an entrepreneur.” Much of the focus of Tomer (1987, 1999, 2008, 2016) is on how these relationships influence the outcomes of the firm, outcomes for individuals inside the firm, and outcomes for society.

Coase (1937, p. 405) suggests we can measure the marginal product of the entrepreneur by identifying specifically what the entrepreneur chooses to remove from the market and place within the firm. Coase (1937, p. 404) asserts, “The question always is, will it pay to bring an extra exchange transaction under the organizing authority?” The entrepreneur should bring transactions within the firm until “the costs of organizing within the firm [is] equal either to the costs of organizing in another firm or to the costs involved in leaving the transaction to be ‘organized’ by the price mechanism.” From this Coasian perspective, the organizational capital accumulation of interest to John Tomer has impact by changing the cost of organizing within the firm.

Coase (1937) provides insights about what will make organizing additional transactions within a firm more attractive. “Inventions which tend to bring factors of production nearer together, by lessening spatial distribution, tend to increase the size of the firm” (Coase, 1937, p. 397), and Coase mentions the telephone as a specific example. Coase (1937, p. 392)

notes that “the entrepreneur has to carry out his (coordinating) function at less cost, taking into account the fact that he may get factors of production at a lower price than the market transactions which he supersedes, because it is always possible to revert to the open market if he fails to do this.” Thus, all changes that improve managerial technique will tend to increase the size of the firm (Coase 1937, p. 397). Coase (1937, p. 393) even mentions the fact that governments often treat transactions organized within a firm preferentially as a reason why a firm may exist or be larger than it would be otherwise.

Offsetting factors that tend to make a firm bigger are factors that limit the size of the firm. There may be decreasing returns to organizing additional transactions within the firm (Coase 1937, p. 394). He specifically mentions efficiency will tend to decrease because the growing number of transactions would tend to be either different in kind or in different places (Coase 1937, p. 397). Coase (1937, p. 394–395) recognizes entrepreneurs are boundedly rational creators of inefficiency when he indicates the entrepreneur may fail “to place the factors of production in the uses where their value is greatest.” Also, the supply price of one or more of the factors of production may rise as the firm gets larger (Coase 1937, p. 395).

Tomer (1987, p. 136) claims organizations form and innovate to exploit new technologies. He further contends organizational innovation is as important as technological innovation in terms of providing new products to consumers. Dew et al (2008, p. 42) concur, noting that a startup differs from an existing firm in that the start tends to face “design problems” more so than operational “decision problems.” Designing involves producing novelty. It may involve designing a new product that creates an entirely new market, but it surely involves shaping the firm so there is a product-market fit. Dew et al. (2008, p. 56) contend, “We need to understand entrepreneurship as a dual design project, that of simultaneously designing firms and markets.” Tomer (1999, p. 8) points out that investments in organizational capital can increase capacity for entrepreneurship.

Because there are many factors that influence whether or not organization within a firm can outperform the coordination outside the firm provided by the market’s price mechanism, Coase (1937, pp. 388–389) concludes that the amount of vertical integration will vary greatly from industry to industry and from firm to firm. Within the firm, the contract (explicit or implicit) is operational tool, whereby employees agree “to

obey the directions of an entrepreneur within certain limits” (Coase 1937, p. 391). Outside the firm, the price system directs. Inside the firm or outside, a key aspect of the direction is to obtain the productivity that comes from the division of labor. Within the firm, the entrepreneur “plans and organizes consciously,” while the specialization outside the firm results without conscious planning from the incentives provided by the price system (Coase 1937, p. 389).

5 INDUSTRIAL ORGANIZATION: WILLIAMSON

Oliver Williamson (2010, p. 676) interprets the “real message” of Coase (1937) as being “study the world of positive transaction costs,” and Williamson went on to win a Nobel prize for doing it. Coase (1937, pp. 390–392) does directly state that “the main reason why it is profitable to establish a firm would seem to be that there is a cost of using the price mechanism,” and he presented a number of reasons why there are positive transaction costs when obtaining productive inputs directly from the market:

1. Discovering the relevant prices;
2. The costs of negotiating and concluding a separate contract for each market exchange transaction.
3. The premium that must be paid, especially for labor, to compensate the input for the risk it incurs that it will go unemployed (and this is why labor tends to prefer a long-term rather short-term contract).

Williamson (2010) associates Nobel Laureates Ronald Coase, James Buchanan, and Kenneth Arrow with his view that the discipline of economics has overemphasized the “lens of choice” and underemphasized the “lens of contract.” Coase recognized the transaction costs of forming contracts as key to understanding firm formation. Buchanan recognized that the mutual benefit of voluntary exchanges is one of the most fundamental of all understandings in economics. Arrow recognized that the costs of operating in competitive markets explain long-term contracting and vertical integration.

For determining whether placing transactions within a firm sufficiently economizes on transaction costs, Williamson (2010, p. 680) identifies “the critical dimensions of transactions are complexity, the condition of

asset specificity, and the disturbances to which a transaction is subject.” Williamson’s transactions cost project, in a nutshell, involves using cost differences to explain contract forms, firm structures, and the extent to which markets coordinate versus a firm hierarchy. He summarizes his theory by concluding “simple market contracting” will arise “if the assets are generic,” but organizing within a firm hierarchy will be advantageous when a “bilateral dependency (and the resulting risk of costly maladaptation)” arises because of asset specificity and there are potential disturbances to the transaction (Williamson 2010, p. 678).

Williamson’s asset specificity and Tomer’s organizational capital are closely related. To illustrate, Tomer (2008, pp. 36–37) notes that the social capital that develops as relationships form within a firm “enhances economic growth by building trust which reduces transaction costs.” Referencing Tomer, Acs and Fitzroy (1989, p.311) note that workers who accumulate specific skills require long-term employment prospects and an “equitable” share of firm-specific rents. Firm-specific skills are a significant example of Williamson’s asset specificity. Williamson (2010, p. 680) notes “the basic regularity that is associated with transactions that are supported by investments in specific assets is that these assets cannot be redeployed to alternative uses and users without loss of productivity.” To summarize, the accumulation of organizational capital simultaneously increases productivity and the degree of asset specificity, which enhances the attractiveness of organizing production within a firm.

Williamson’s expressions of types of asset specificity provide insight regarding the types of organizational capital formation that increase asset specificity. He identifies the following forms of asset specificity: physical, human, site specific, dedicated, brand name capital, and episodic (Williamson 2010, p. 680). He notes human asset specificity regularly arises as employees learn by doing during contract implementation. Williamson (2010, p. 680) emphasizes that “significant organizational ramifications” follow from the “different hazards” that “accrue to different forms of asset specificity.” To the extent that the human capital is organization specific, the risk of being separated from each other increases to both the firm and the productive input.

Williamson (2010, p. 681) notes contracts supported by specific assets will tend to be incomplete because those writing contracts are boundedly rational and cannot foresee all contingencies that might arise. Market contracts would be more subject to mal-coordination when significant

disturbances occur. When the stakes are high, the losses from mal-coordination are great. In such circumstances, an incomplete contract within a firm will facilitate adaptations that can reduce losses that disturbances can cause. As one example, Williamson (2010, p. 685) notes that a firm can mediate disputes between internal units at a lower cost than would be incurred in court for disputes between different market participants. Organizational capital, in the form of relationship within the firm, stressed by Tomer (1987, 1999) can facilitate adaptation and dispute resolution within firms.

6 SIMON AND FIRM DECOMPOSITION

Herbert Simon (2002a, p. 599) notes that “complex systems in our world today, and in particular, the living systems, all share the property of nearly complete decomposability.” A complex system is decomposable if it is a hierarchy of subsystem components. Within the hierarchy, a component is relatively independent of other subsystem components and components at a given level in the hierarchy interact more with other components at that level than with components at other levels. Simon (2002a, p. 599) describes decomposability as “an exceedingly powerful architecture for effective organization.” In this section, we relate decomposability to some of John Tomer’s perspectives on organizational capital.

Simon (2002a) explains why decomposable systems are especially fit. First, a designer can more readily assemble a more complex system from fewer subcomponent parts than from many, especially when the design process is subject to disruptions. Second, the relatively rapid return to equilibrium of lower level subsystems allows the higher-level elements of the hierarchy to more adapt effectively relative than a system that is not decomposable.

Egidi and Marengo (2002) expound upon Simon’s decomposability by noting we can think of decomposability as the process of breaking up a more complex problem into simpler sub-problems. This allows us, boundedly rational humans, to solve problems we could not otherwise solve. They envision the evolution of a firm as “a process of deepening the sub-problem decomposition, with an endless division of problems and tasks into sub-problems and sub-tasks, and a process of recombining sub-problems and sub-tasks into modules” (Egidi and Marengo 2002, p. 9). Like Simon, Egidi and Marengo emphasize systems that are decomposable and less vulnerable. By limiting interactions and information flows

between different parts of the system, damaging events tend to confine themselves to sub-parts. Like Cyert and March, Egidi and Marengo (2002, p. 10) emphasize the need of firms and “every adaptive system [to] be able to bear a high rate of mistakes without losing its functionality,” and decomposability provides this capability.

Fredrick Hayek (1945) emphasizes that the economic problem society faces is as much a “use of knowledge” problem as a “resource allocation” problem. “Economic problems arise always and only in consequence of change,” Hayek (1945, p. 523) contends. Further, Hayek (1945, p. 524) contends, “The economic problem of society is mainly one of rapid adaptation to changes in the particular circumstances of time and place.” Hayek (1945, p. 527) describes the price system as a “marvel,” a “machine for measuring change,” that effectively leads people to reallocate resources in the right direction for society by only conveying the essential information about societal change. The price system will tend to outperform central planning as a coordinator of economic activity because it allows individuals who possess particular time and place information to make the decisions and because it “induces people to do the right things with anyone telling them what to do,” a very efficient machine (Hayek, 1945, p. 527). Referring to the price system, Hayek (1945, p. 528) quotes Alfred Whitehead: *“Eminent people ... [claim] we should cultivate the habit of thinking what we are doing. The precise opposite is the case. Civilization advances by extending the number of important operations which we can perform without thinking about them.”* By effectively managing information, the price system extends cooperation and facilitates specialization, enhancing productivity.

Like Hayek, Simon (2002b) emphasizes the need to address the scarcity of attention relative to the mountain of data available today, but while Hayek focused on the economic system Simon focused on the firm. “Efficient specialization [within the firm] ... involves limiting the exposure of one component to other components and limiting communication” (Simon 2002b, p. 612). There are relationships between units, but each unit is relatively independent. Effectively using information involves balancing communication and isolation. In an effective organization, communication will occur more often and more rapidly between units at a given lower level in a hierarchy, while communication between lower and higher units will occur less often and can be more prolonged (Simon 2002b, pp. 612–613). This allows activities at lower levels

to proceed nearly independently, without much need for higher-level intervention, conserving the most valuable resource—attention.

Considering how firm management has evolved over time, John Tomer (1999, p. 12) contrasts the “old paradigm” with the “new paradigm.” The old paradigm involves seeing the firm as a machine, so understanding the firm involves understanding its component parts. The new paradigm sees the firm more holistically, and understanding it involves understanding the interconnectedness between the different firm components and between the firm and the outside world. The old paradigm firm disproportionately uses rules and bureaucracy to gain efficiencies from more predictable interactions and greater specialization (Tomer 1987, p. 15). Tomer recognizes the usefulness of the ideas of Coase, Hayek, Simon, and Williamson in terms of understanding why firms form and decompose and in terms of understanding why specialization occurs in markets coordinated by the price system. However, Tomer also sees potential in the new paradigm for looking beyond the price system to understand societal cooperation and coordination, and for looking at decomposition to understand how cooperation and coordination yield benefits within the firm.

7 INDUSTRIAL ORGANIZATION: CYERT AND MARCH

Cyert and March (1963) critique the traditional theory of the firm and offer an alternative. They identify two major difficulties with the traditional theory: (1) presenting profit maximization as the sole firm motivation when it is more commonly just one among many goals, and (2) not explaining many of the characteristics commonly associated with firms, like organizational complexities, controls and control problems, standard operating procedures, budgets, and levels of management (Cyert and March 1963, p. 8). They describe their task of creating an alternative theory as including “an explicit emphasis on the actual process of organizational decision making” (Cyert and March, 1963, p. 19). More than 40 years later, Augier and March (2008) take a retrospective look at the “Behavioral Theory of the Firm” expressed by Cyert and March (1963). Augier and March (2008, pp. 2–3) identify the central concepts of the theory as including the ideas that:

1. The firm is an adaptive political organization where different individuals and groups inside the firm will have different goals that may conflict;
2. Decision making is boundedly rational because of human and institutional limitations;
3. Firms satisfice relative to its aspirations (i.e., goals);
4. Firms are learning organizations and adapt aspirations and operations in response to experiences;
5. Attention is a key resource the firm allocates;
6. Organizational slack is key to providing the ability to adapt and to manage conflicting aspirations within the firm;
7. Most decisions are not calculated but are established by rules, routines, and business practices;
8. Proactive decisions tend to be problem oriented, focused on coping with conflict within the firm, avoiding uncertainty, searching, and learning.

John Tomer's "socioeconomic model of the firm" is consistent with the behavioral model of Cyert and March (1963). Like Cyert and March, Tomer (1999, p. 8) criticizes the neoclassical theory of the firm for abstracting from learning and assumes the firm is boundedly rational, relying upon learning to provide capability for good decision making. Each individual within a firm "attends to only a rather small subset of his demands" (Cyert and March 1963, p. 35). Because attention is limited, firm opportunities remain unrealized until the firm focuses attention on them (Cyert and March 1963, pp. 35–36). Like Cyert and March (1963, p. 33), Tomer (2016, pp. 47–48) notes much of business is carried out using established business practices, and emphasizes that business practices accumulated as organizational capital will tend to reduce decision errors. With his emphasis on relationships, Tomer (1987, p. 20) notes that training within the firm is a process of socialization, about how to act within the firm, reflective of the Cyert and March perspective that the firm is a political coalition. Tomer (1987, p. 27) contends it will tend to require more social learning for workers to understand how to adjust to the new rules than technical learning for workers to understand how to adjust to a new machine.

Tomer (1999, p. 14) views global competition as a force that makes it especially necessary for firms to be flexible and adaptable. Tomer's interest in the Japanese style of management, in viewing the firm as

less hierarchical and more holistic, stems in part from his belief that the older hierarchical model of the firm is less suited to the newer globalized world (Tomer, 1987, p. 20). In this regard, Tomer is skeptical of Simon's (2002a) emphasis on decomposition, but especially accepting of the Cyert and March (1963, p. 99)'s view of the firm as a system designed for adapting to uncontrollable "shocks." Tomer (1987, p. 132) refers to Alvin Toffler's description of the information revolution as the third wave of change impacting the world, following the agricultural (first wave) and industrial (second wave) revolutions, and contends that organizational capital will become increasingly important in the third wave as changes in information technology make organizations less standard and less mechanized.

Acs and Fitzroy (1989, pp. 309–310) note that both Leibenstein and Tomer perceive firms will experience Cyert and March type conflicts in the form of prisoner's dilemmas. Imperfect competition, mobility costs, and asset-specific investments generate an enterprise-specific surplus, the slack referred to by Cyert and March. Acs and Fitzroy identify changes in technology and demand composition as factors increasingly favoring a more flexible firm that includes semi-autonomous teams where workers cooperate to solve emerging problems. In line with Tomer's perspective, Acs and Fitzroy (1989, p. 310) contend knowledge-sharing and group incentive pay will tend to be more effective than centralized decision making and purely individualized pay, and peer pressure to perform allows productivity to be maintained with less close supervision. However, conflicts between parties within the firm can reduce the surplus. Maintaining a surplus also typically requires trust among the parties, which may be lacking. Hence, modern firms must often cope with prisoner dilemma relationships.

Tomer (1987, pp. 64–65) emphasizes that ethics and organizational conventions can overcome prisoner's dilemmas. Positive relationships, Tomer emphasizes, are governed by implicit psychological contracts, and the firm can shape such implicit contracts with intentional training. Key to training designed to overcome a prisoner's dilemma is valuing cooperation, which Tomer (1987, p. 58) defines as "working with others toward a common end." Williamson (2010, pp. 678–679) contends "opportunism is the operative condition" when an individual or group deviates from the established routines and pursues its own interest. Acs and Fitzroy (1989) emphasize that economists have tended to view principal-agent thinking as the approach firms can use to address prisoner's dilemmas, with the

principle designing a contract that removes the dilemma by aligning the goal of the agent with the principle. Tomer (2008, pp. 37–38) emphasizes firms can also invest in social capital in the form of norms and sanctions, so prisoner’s dilemmas are resolved by the strengthening in psychological contracts of the tendency to cooperate.

Tomer (2016) emphasizes that firm success is dependent upon employee accumulation of personal capital. By changing the organizational structure or operating rules, the firm can change characteristics of the average worker so people match up better with jobs (Tomer, 1987, p. 27) Referencing Gigerenzer and Goldstein (1996), Tomer (2016, pp. 52–53) emphasizes that a key part of developing personal capital within a firm is identifying heuristics individuals can use that suit different circumstances. This allows firms to adapt, as emphasized by Cyert and March, in a fast and frugal way.

8 SOCIAL RESPONSIBILITY

In his book, *The Human Firm: A Socioeconomic Analysis of its Behavior and Potential in a New Economic Age*, Tomer (1999, p. 6) distinguishes his “socioeconomic firm” from the standard “neoclassical firm.” He describes the neoclassical firm as less embedded in society and more focused on economic considerations, while the socioeconomic firm is more embedded in society and less focused on economic considerations. The socioeconomic firm has values beyond profit, including commitment to the community and to other external relationships.

In Tomer’s human firm model, external forces influence the firm, for better or worse, and the firm influences society, again for better or worse. Tomer (1999, pp. 7–8) recognizes two types of external forces influencing the firm, macro and micro. Macro-forces include societal norms, societal values, government policies, and more. Micro-forces include trade associations, suppliers, consultants, standard business practices, and more. Firms influence society through their products, but Tomer emphasizes firm connections to society go beyond providing products.

Comparing his socioeconomic firm to the neoclassical firm, Tomer (1999, p. 6) notes that the socioeconomic firm is not isolated from the community like the neoclassical firm. Recognizing a firm in a community is theoretically pleasing because it “gives the firm additional ways to positively impact the community, additional ways the firm may be usefully

restrained by the community, and additional opportunities to increase firm productivity and sustainability” (Tomer, 1999, p. 6).

Tomer’s (1999, p. 9) ideal human firm recognizes the values of the society in which it is embedded and is socially responsible relative to societal values. Profit is not the sole motive of the socially responsible firm. Instead, the firm is motivated to be a good social citizen that is willing to sacrifice profit to some degree for social responsibility. Building firm aspirations and goals that are consistent with societal aspirations and goals is, for Tomer, a key type of organizational capital accumulation. Accumulating this type of organizational capital can be profitable because it reduces the likelihood government will regulate the firm and thereby reduce its profitability (Tomer 1999, p. 8). The social responsibility developed by the ideal human firm thus provides a non-governmental solution to negative externalities (Tomer 1999, p. 9).

The Conscious Capitalism (2020) movement is pursuing a vision John Tomer presented long before the movement started. The fundamental philosophy underlying the movement is “Businesses should exist for reasons beyond just making a profit” (Conscious Capitalism 2020). Armed with a “higher state of consciousness,” those managing businesses with this philosophy recognize “the interdependencies that exist across all stakeholders, allowing them to discover and harvest synergies from situations that otherwise seem replete with trade-offs.”

9 SELF-ACTUALIZATION FROM WORK

John Tomer’s (1999, p. 2) human firm does not just pursue profit, but also seeks to be a place where those who participate in it can self-actualize. However, profit maximization and self-actualization goals need not conflict. When a task provides self-actualization along with pay, there is a higher motivation to perform (Tomer 1987, p. 17).

The principle-agent framework is a significant tool in economics for modeling conflicting incentives that may arise and for studying how employers can better motivate workers within firms by changing the organization to goals better align, but Tomer (2008, p. 61) contends the best performing work systems will not be comprised of the typical principal-agent relationships. Rather than owners always being the principals who design environments for their worker-agents, Tomer contends firms will be more successful if they provide workers some scope for being principals, so workers can self-actualize by proactively making

the firm successful. The ability of the worker to have some control provides deeper, intrinsic motivation, therefore increasing productivity. Tomer (2008, p. 58) criticizes the standard principal-agent framework for assuming workers will only be motivated by external incentives, not recognizing that the work environment can be arranged so workers are intrinsically motivated.

An employer can facilitate worker self-actualization and other firm goals by investing in the personal capital of workers. Tomer (2008, p. 19) describes personal capital as human capital embodied in individuals that is highly non-cognitive and non-physical. Personal capital includes knowledge possessed by individuals, but more broadly also reflects the person's psychological, physical, and spiritual functioning (Tomer 2008, p. 21). It is well known that differences in worker earnings can be explained by differences in human capital accumulation, but Tomer (2008, p. 44) notes earnings differences also can be explained by non-cognitive personal capital differences, especially differences in drive, desire to be on top, achievement orientation, and self-efficacy.¹ Higher performing individuals obviously will help the firm succeed. However, a key aspect of human capital, and personal capital, is that it is inalienable and inseparable from the person who accumulates it (Tomer 2008, p. 80). This implies the firm will tend to lift up the worker individually as it intentionally invests in worker personal capital with the goal of firm success.

Emotional intelligence and self-control are two types of personal capital that are especially valuable, both for the individual and for firms. As you develop emotional intelligence, you become more able to recognize your own physical and emotional problems, manage your own emotions and impulses, express your emotions and feelings, relate well with others, and solve personal and relational problems (Tomer 2016, p. 28). The value of self-control relates to the fact that your brain develops automated responses, but these responses are not always healthy. Self-control involves a second brain capability—the ability to cognitively recognize a stimulus for a bad response and over-ride the automated behavior (Tomer 2016, p. 28).

¹ A characteristic like achievement orientation may well have cognitive elements, but Tomer often uses the term non-cognitive to distinguish characteristics like achievement orientation from a more pure, traditional form of human capital accumulation, like years of education or hours of training.

More generally, Tomer describes a person with good personal capital accumulation as a person with “good” personality traits, where a good trait is roughly defined as one that promotes more successful behavioral outcomes. “Personality traits are enduring patterns or thoughts, feelings, and behaviors that reflect one’s tendency to respond in particular situations (2016, p. 30).” Tomer (2016, p. 31) points to the success of the Perry Preschool Program to illustrate good personality traits can be proactively developed. The implication of firm investment in the development of good personality traits in its employees will not only benefit the firm but also will help individual employees self-actualize.

Coase (1937, p. 392) notes that Frank Knight made “the distinguishing mark of the firm” the fact that it guarantees fixed incomes to its employees while the firm carries the burden of receiving “the residual, and fluctuating, income.” In exchange for reducing the uncertainty of the worker’s income stream, the firm obtains the power to direct the work of the employee. Thus, for Frank Knight, the existence of income uncertainty, and the ability of the firm to reduce that uncertainty in exchange for control over work, is a major factor explaining why firms exist (Coase 1937, p. 400). Reducing the variability of the income stream is one key way firms indirectly help workers self-actualize. With a steady income relatively secured, workers can turn their attention to other aspirations.

John Tomer views the firm as a key element, among others, in producing well-being in a society. He describes a life well-lived is “a life rich in meaning and personal growth, a life that reflects one’s humanness and one’s membership in a community, and, finally, a life built from some sort of conscious thought and reflection as to its content and purpose” (Tomer 2008, p. 145). He identifies four primary roadblocks to life success: (1) incomplete brain development, (2) emotional repression stemming from bad experience(s), (3) inadequate development of emotional intelligence, and (4) development of bad rather than good personality traits (Tomer, 2016, p. 34). Parenting and schooling are primary tools through which these roadblocks are removed, but Tomer also saw the social system and firm as tools for removing roadblocks.

In terms of a supportive social system, Tomer (1999, pp. 202–203) describes a “human capitalism” and ideal capitalism that assists people in achieving their potentials. This ideal system includes hard and soft factors. The hard factors are tangible and measurable, including incentives, organizations, regulatory controls, and education. The soft factors are intangible and often immeasurable, including spirit, leadership, vision,

ideals, morals, and ethics. Tomer contends a social system works best when the hard and soft attributes balance and complement each other.

In terms of a supportive firm, Tomer (2008, p. 150) notes Sen's view is that well-being comes from doing and being. Because people must earn a living, much human doing occurs at a workplace. While we can view the firm as a place workers go to obtain an income so they can then do and obtain well-being, John Tomer encourages us to recognize that the work workers perform in the firm can provide significant self-actualization and well-being. Tomer's perspective is well aligned with one of the elements of the Conscious Capitalism (2020) creed. Conscious capitalists "help evolve our world so that billions of people can flourish, leading lives infused with passion, purpose, love and creativity; a world of freedom, harmony, prosperity, and compassion."

10 GOVERNMENT POLICY

Tomer (2008, p. 219) indicates the goal of government policy relative to firms should be "to develop the capacity of human firms." Government should conceive of firms as organisms that compete and cooperate within a complex social network. Tomer (1999, pp. 11–12) additionally indicates government should encourage firms to develop their internal capabilities, inform firms of special opportunities, reduce undesirable social influences on the firm, and increase desirable social influences on the firm.

Analogous to market failure, Tomer (1999, p.13) proposes firms can experience socioeconomic failure. This occurs when a bad external influence causes the firm to be less competitive than it could be, leading the firm to emit a negative externality on society. Moreover, firms can under-allocate resources to organizational change. This occurs when positive externality spillover benefits to society that can come from organizational change, an example being the improved psychological health of workers (Tomer, 1987, p. 55). Tomer (1987, p. 55) envisions a role for government policy in the form of extrinsic inducements for firms to make organizational changes that will provide spillover benefits to society.

Tomer (1987, p. 129) contends organizational policy is an overlooked aspect of industrial policy. In particular, Tomer (1987, p. 115) asserts appropriate government organizational policies can enhance cooperation within firms and between larger economic entities, thereby reducing costs of non-cooperation and capturing benefits of increased cooperation.

Tomer (2008, p. 230) especially acknowledges opportunities that enhance the environmental sustainability and environmental responsibility of firms.

However, Tomer (1999) does not see heavy-handed government regulation as the solution; rather, he suggests government should act more like a coach. Because firms (and other organizations like non-profits) are learning mechanisms, they can learn to better cooperate and become more socially responsible (Tomer 1999, p. 198). Government as coach can help align firm goals with society's goals (Tomer 1999, pp. 200–201), and government coaching can move organizations toward a learning culture when such a culture is lacking (Tomer 1999, pp. 198–199). By enhancing cooperation and getting firms to adopt socially oriented goals, government coaching can not only enhance firm competitiveness, but also it may reduce the need for regulation to address negative externalities and help capture positive externality spillover benefits (Tomer, 2008, p. 220).

In the third wave information revolution, Tomer (1987, p. 145) emphasizes the need for firms to “informat” more so than “automate.” To fully capture the benefits of the massive amounts of information now available, firms need human resource strategies that emphasize the participation of all individuals within the firm (Tomer 1987, p.146). Just as governments foster the development and diffusion of new technologies, so Tomer perceives they can foster the development and diffusion of organizational improvements.

11 CONCLUSION

Oliver Williamson (2010, p. 674) notes that the chief mission of neoclassical economics is to understand how the price system coordinates the use of resources, not to understand the inner workings of real firms. Pursuing the suggestion of Coase (1937), Williamson extended the understanding of the inner workings of the firm by exploring what we can explain by recognizing transactions costs. John Tomer recognized that the work of Williamson and others, which did focus on explaining the inner workings of firms, relies disproportionately on the standard economic assumption that extrinsic material incentives motivate people. Alternatively, John Tomer focused most of his effort on seeking to see what we can understand about the firm by recognizing how people respond to a variety of motivators.

Scholastically, we can think of John Tomer as applying the law of diminishing returns to the study of human capital. Other scholars had

largely fleshed out the implications of tangible human capital and extrinsic material incentives. John Tomer recognized that the returns from further studying these implications would not be as great as from studying the implications of intangible human capital and intrinsic incentives.

Tomer (2008, p. 146) also calls for moving economics toward what he labels the “human functioning approach.” Well-being, he contends, is a “good cluster of high level human functionings.” These include appreciation of one’s life purpose, wisdom, accomplishment, orientation to serve others, degree of harmony and peace, joy, commitment, mental clarity and balance, discipline, and life integrity. It is interesting that this generic description of well-being largely describes John Tomer, the person who many of us knew. John was a high functioning scholar and a good man. It is a pleasure to honor John by reviewing some of his work here. Those of us who knew him are better for knowing him.


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Community Embeddedness, Consumer Voice, Corporate Social Responsibility

Morris Altman 

1 INTRODUCTION

For Tomer (Altman 2003; Tomer 1987, 1999, 2008, 2015), most firms do not realize their potential, which would occur if they were both ethical and socially responsible and maximized their productivity given their available resources. A firm that realized this specification of its potential represents what Tomer would consider to be the ideal firm. For Tomer, a socially responsible firm is closely intertwined with the notion of corporate social responsibility. He also maintained that there is a positive relationship between being ethical and, relatedly, socially responsible, and the firm's productivity. Realizing the potential embedded in this positive relationship facilitates achieving Tomer's benchmark of the ideal firm. He argues that rational firm owners and managers should make decisions that

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are consistent with the ideal firm. The latter should also involve incorporating any externalities into its decision-making process, which is part and parcel of a socially responsible firm. I would argue that the big public policy and social welfare or well-being question is: if the ideal firm is achievable, then why have most firms not realized their potential? A clear effect of firms performing below their potential is a less ethical society and a lower level of socio-economic well-being for its population.

In conventional economics, market forces would drive firms into behaving efficiently at least in terms of maximizing productivity. Tomer's prior assumption is that the latter does not typically take place in spite of the fact the ethical and socially responsible firm is the relatively more productive firm and is an achievable ideal. This view of the persistently economically inefficient firm flows from Leibenstein's (1966) x-efficiency theory, where it is argued that firms are typically not nearly as productive as they can be given their conventional factor inputs. Tomer also maintains that market forces do not drive firms into behaving ethically and in a socially responsible manner. Non-market factors are required to achieve this end.

Tomer argues that firm leaders can be nudged into making their firm more ethical firm and socially responsible by the communities in which they are embedded, by their firm's shareholders, and also by the fear of government forcing them to behave more ethically and socially responsible in the near future. In the latter case, government bureaucracies will make decisions for the firm which firm leaders might believe could be better or more efficiently made by themselves if only they can pre-empt government intervention by becoming more ethical on their own. In other words, the social and institutional environment, which includes a credible threat by government to eventually force ethical behaviour on the firm, can be expected to induce firms into behaving ethically and in a socially responsible manner. Firms can also be coached into becoming more ethical by government, by demonstrating to firm owners the benefits of being ethical or socially responsible. All of this nudging induces the firm into behaving more rationally, that is a more ethical and socially responsible manner.¹

This chapter addresses the question of why firm decision-makers would choose not to transform their firm into ethical and socially responsible

¹ Tomer relates being ethical and socially responsible to being rational in that this contributes to increasing the firm's efficiency.

entities. In contrast to Tomer, I argue that rational firm decision-makers should *not* be expected to behave ethically or socially responsibly especially if they are motivated by profit maximization or cost minimization and if they *believe* (mental models) that efforts to become more ethical and socially responsible will make their firm less competitive. Therefore, I underline the importance of the mental models (Altman 2014; Denzau and North 1994) adopted by decision-makers with regards to the effect of being more ethical and socially responsible upon profits and average costs. This speaks to the potential importance of coaching (as Tomer puts it), which can provide decision-makers with more accurate mental models on the net economic impact on the firm of engaging in ethical and socially responsible behaviour. More, broadly, this speaks to the importance of education in affecting the mental models and, therefore, the decisions made by firm leaders.

Moreover, I argue, building upon an extended x-efficiency theory of the firm, drawing upon the original insights of Leibenstein (1966), that even when productivity and ethical behaviour is positively and causally related this does not necessarily mean that being ethical will yield higher profits and lower unit costs of production, which is implicitly assumed in Tomer's narrative. Becoming ethical and socially responsible typically incurs costs which can offset the productivity benefits of becoming ethical and socially responsible. Hence, rational profit maximizing firm decision-makers need not choose to convert their firms into ethical entities given that there is no economic (profit, cost) imperative to do so. Even if being ethical and socially responsible does not cause competitive harm to the firm, doing the right thing may not be enough to motivate rational profit motivated decision-makers to change their behaviour. This is particularly the case when decision-makers are not imbued with a strong sense of moral sentiment and empathy. And, there is no empirical basis upon which to ground the assumption that the typical firm decision-maker is imbued with a strong sense of moral sentiment and empathy.

Unlike Tomer, I do not assume irrational decision-makers (when they fail to become more ethical and socially responsible). Rather, I model why *rational* decision-makers will *not* choose to transform their firms into ethical and socially responsible firms. I also model the conditions under which rational decision-makers will chose to engage in such a transformation. Critical to this chapter is modelling the conditions under which consumers and firm stakeholders will advocate for and nudge firms towards being more ethical and socially responsible. Of significance here

is the importance of mental models adopted by firm decision-makers, as well as by consumers, firm stakeholders, and government. The role of imperfect and asymmetric information in affecting decision-making is also addressed. As Tomer argues, the credible threat of government policy can also play an important role in transforming firms towards becoming more ethical and more socially responsible. But, I argue, this very much relates to whether government decision-makers believe that Tomer's ideal firms are consistent with being competitive and economically sustainable over time. There is a critical interaction between mental models, the preferences of all decision-makers, power relationships across economic agents, and the extent to which ethical and socially responsible firms are economically sustainable. Finally, I argue that the extent to which a firm is embedded in its community can affect the extent to which it behaves in a socially responsible manner. A community embedded firm, as compared to one where the firm is controlled and owned by non-local individuals and organizations, is less likely to succumb to public stakeholder pressure to behave in a more socially responsible manner.

2 BEING ETHICAL AND THE CONVENTIONAL ECONOMIC WISDOM

A useful starting point for addressing Tomer's narrative of the ethical and socially responsible firm is Friedman's (1970) classic narrative on what should be considered as ethical behaviour by firm decision-makers, which is very much vested in conventional economic theory. Friedman's key point is that any decision that results in damaging the firm's competitive position, reducing its rate of return, or reducing dividends paid to shareholders is a product of unethical behaviour by the firm's decision-makers, by its leadership. It represents a betrayal of the firm's stakeholders (firm owners), who the firm's decision-makers have a moral obligation to represent. These owners would typically be interested in maximizing profits. Therefore, improving working conditions, increasing real wages, reducing the firm's environmental footprint should be deemed unethical if it causes economic harm to the firm. But it is these types of behaviours that Tomer, amongst others, argue are critical ingredients of an ethical and socially responsible firm.

Friedman writes in his now classic 1970, New York Times article, how one should define ethical behaviour for firm leaders in market embedded, profit-oriented firms:

In a free-enterprise, private-property system, a corporate executive is an employee of the owners of the business. He has direct responsibility to his employers. That responsibility is to conduct the business in accordance with their desires, which generally will be to make as much money as possible while conforming to the basic rules of the society, both those embodied in law and those embodied in ethical custom. Of course, in some cases his employers may have a different objective. A group of persons might establish a corporation for an eleemosynary [charitable] purpose—for example, a hospital or a school. The manager of such a corporation will not have money profit as his objective but the rendering of certain services.

Friedman (1970) elaborates on the above by quoting from his book, *Capitalism and Freedom* (Friedman and Friedman 1962): "...there is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud."

Friedman maintains that members of a firm's executive can engage in costly ethical behaviour at their own expense, but not at the expense of the firm that employs them to maximize profits, share value, or dividends. Also, such ethical behaviour can be consistent with alternative organizational forms such as charitable organizations where non-profit maximization objectives take priority. Friedman does not mention member-owned organizations or co-operatives wherein member concerns and benefits are first priority. But I would argue that for all organizational forms, inclusive or charities and co-operatives, the firm or organization must be economically sustainable. Costs can't exceed revenue over time, unless their losses are covered by subsidies. It is also important to note that Friedman accepts the conventional view that being ethical and engaging in socially responsible behaviour incurs costs which cause economic harm to the profit-oriented firm. Tomer rejects this assumption and in so doing challenges an underlying premise of conventional economics that being profit-oriented is inconsistent with a firm being and, more broadly speaking, socially responsible.

Tomer's rejection of the conventional narrative is consistent with that of other economists who argue that capitalism is compatible with ethical behaviour and that ethical behaviour can have positive effects on the firm's overall economic performance (M. Altman 2020). A most recent pro-ethics narrative is presented by McCloskey (1996), who argues that with the flourishing of markets there should be the flourishing

of ethical behaviour within firms and society at large. This is a function of ethical behaviour (it is assumed) being embedded in bourgeois values. However, there is evidence to suggest that ethical and socially responsible behaviour is not inevitable under capitalism even though it is not damaging firms and their competitive position. It is important to explain why this is case, especially if one assumes that decision-makers are rational.² Why would rational decision-makers not take advantage pursuing further economic efficiencies through more ethical and socially responsible behaviour? It would appear that this would be (irrationally) equivalent to leaving big bills lying on the sidewalk (Olson 1996).

3 MODELLING ETHICAL AND SOCIALLY RESPONSIBLE FIRMS AS SUSTAINABLE AND COMPETITIVE ORGANIZATIONS

Tomer's narrative on the ethical and socially responsible or his ideal firm can be incorporated in an extended x-efficiency model of the firm (Leibenstein 1966; also Frantz 1997) which I've developed elsewhere (Altman 1996, 2001, 2005, 2006, 2012, 2017, 2019, 2020). A key point made by Tomer is that ethical and socially responsible behaviour contributes to firm productivity through its impact on the firm's level of x-efficiency. The latter refers to the extent to which the firm is maximizing productivity given its traditional factor inputs and given technology. In the x-efficiency narrative one important variable affecting productivity is the level of the quality and quantity of effort input, which is assumed, based on the evidence, to be a variable. In a sense, this is what Tomer's narrative implies wherein ethical and socially responsible behaviour serves to increase the level of effort inputs towards some optimal/maximum level. Relatively, unethical and socially irresponsible behaviour results in less of than optimal or x-inefficient levels of productivity. This runs contrary to the conventional economic wisdom that firm decision-makers, in the pursuit of profits and their self-interest to maximize their material benefits, and paying attention to competitive market forces, will assure that all economic agents within the firm will be working as smart and as

² As previously mentioned, Tomer assumes that decision-makers can be and often are irrational because they don't subscribe to the development of the ideal firm which is, for Tomer, the ethical and socially responsible firm.

hard as they can. A less stringent assumption stemming from this narrative is that effort inputs are fixed at some high level and not subject to change. If effort inputs are maximized or fixed, they can be assumed away as a variable input in the production function.

One way of connecting the conventional model with Tomer's narrative and x-efficiency theory is to clearly stipulate the relationship between effort inputs, the cost of inputs (one of which is the cost of being ethical and socially responsible), average costs, and productivity. Leibenstein's (1966) cost narrative is illustrated in Eq. 1 for a very simple model of the firm with one factor input. AC is average cost, w is cost per unit of input (here the cost per hour of labour), and Q/L is labour productivity (derived from Altman 1996, 2005, 2017). When effort input is reduced, labour productivity (Q/L) diminishes and this increases average costs. The reduction in productivity is a measure of an increase in the level of x-inefficiency. The increase in average cost makes the firm less competitive. Leibenstein argues that x-inefficiency is the norm, especially where such higher cost firms are protected by imperfect (less competitive) product markets and government policy such as tariffs and subsidies. Tomer argues that being more ethical and socially responsible should make the firm more productive, and this can be related to the firm becoming more x-efficient (increasing Q/L) (see also M. Altman 2020). But *ceteris paribus*, this should result in lower average cost as per Eq. 1. This point is not made explicit in the Tomer narrative. My modelling raises the fundamentally important question as to why, if ethics and social responsibility is good for business, all profit-seeking firms do not converge towards ethical and socially responsible organizational forms.

$$AC = \frac{w}{\left(\frac{Q}{L}\right)} \quad (1)$$

What one must recognize and incorporate into one's modelling is the fact that becoming and then remaining more ethical and socially responsible comes at a cost. In Eq. 1, this cost can be proxied by w . Hence, increasing a firm's ethical and socially responsible dimension increases w and, thereby, average cost. Only if the productivity effect of becoming more ethical and socially responsible offsets the costs of so doing will average cost not increase. On the hand, becoming less ethical and socially responsible should reduce productivity, which can actually have the net effect of increasing average cost. This fall in productivity could be the

result of firm members retaliating against their firm's unethical behaviour by reducing their effort input, thereby making the firm less productive. It is possible that the productivity effect of becoming more or less ethical and socially responsible will simply offset the associated change in cost: changes in Q/L will always offset changes in w . If this latter scenario holds true, then becoming more ethical and socially responsible does not yield a competitive advantage, nor does becoming less ethical and socially responsible.

Appreciating that decision-makers, firm leaders have some choice as to whether or not to become more or less ethical and socially responsible and remain economically sustainable, allows us to address a number of important theoretical and policy issues raised in Tomer's narrative. From a theoretical perspective, one can explain why there is no economic imperative for firms to become more ethical and socially responsible (M. Altman 2020). Moreover, to the extent that firm leaders have some choice with regards to becoming more or less ethical or socially responsible, one can better identify why a firm would choose to be relatively unethical and less socially responsible and what type of policies can shift a firm to a more ethical and socially responsible equilibrium. Some of these points are illustrated in Diagram One.

Average cost is mapped against the level of ethical and socially responsible behaviour and related firm characteristics. Acon represents the conventional economics-Friedmanite view of the world. Increasing the extent to which the firm is ethical and socially responsible results in increasing average costs. This damages the firm's economic position, and it would be unethical for firm leaders to do so when the firm leaders are responsible to firm owners, unless the firm owners are happy to absorb these additional costs (owners have a preference for being more ethical and socially responsible). Also, *ceteris paribus*, one would expect that such high cost firm would fail to compete unless supported by government. What is consistent with Tomer's narrative as well as that of McCloskey is ATM, wherein average costs decrease as the firm becomes more ethical and socially responsible. Tomer makes the case, as discussed above, that the more ethical and socially responsible firms are or should be more productive (in part by reducing the extent of x -inefficiency), and this increase in productivity more than offsets any associated costs of becoming more ethical or socially responsible. If this were the case, then any rational firm decision-maker would choose to become ethical and socially responsible. Moreover, these more progressive firms would

be more cost competitive and should drive out of the market the less ethical and socially responsible firms.

As McCloskey argues the spread of capitalism should coincide with the eventual dominance of progressive firms—there is a form of ethical imperative towards an ethical and socially responsible capitalist society. However, an unequivocal ethical imperative does not appear to exist—there appears to be no such dynamic equilibrium. This particular point is illustrated in line segment ad, wherein there exist different levels of ethical and socially responsible behaviour consistent with a unique average cost (based on Altman 1996, 2009, 2017, 2020). Along ad, one has a type of multi-equilibrium with respect to different levels of ethical and socially responsible behaviour and related characteristics consistent with a particular average cost. Past point d (and c) further increases in ethical and socially responsible behaviour will increase average costs (dBE), which is consistent with the conventional economic model. However, if increasing the extent to which the firm is ethical and socially responsible induces technical change (M. Altman [2020], this shifts our average cost curve from BE to BETC, and this illustrates an increase in the multi-equilibrium possibility set. There is no ethical imperative here, but there is a range of ethical and socially responsible possibilities which may or may not be taken up by firm leaders. Therefore, choosing not to transform their firms into Tomer’s ideal (ethical and socially responsible) firm would be consistent with rational profit maximizing behaviour (Fig. 1).

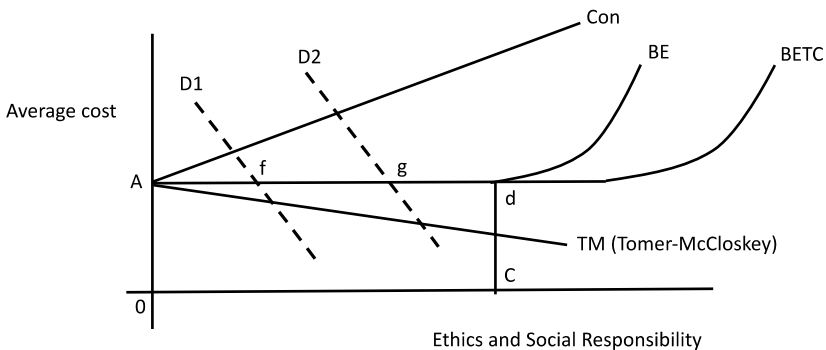


Fig. 1 Ethics, social responsibility and X-efficiency

4 DETERMINING A FIRM'S ETHICAL AND SOCIALLY RESPONSIBLE EQUILIBRIUM

Given the possibility that being more or less ethical (up to a point) will not damage a firm's economic position, there are multiple factors that could induce firms to be more ethical and socially responsible. I would highlight the importance of mental models in determining decision-makers choices given their preferences. I would also underline the importance of the quality of pertinent information available to consumers with regards to the extent to which producers of goods and services are ethical and socially responsible. Also, of importance, is the ability of consumers to understand the available information on the extent to which firms are ethical and socially responsible. This is especially important in the real world of bounded rationality where information is costly and asymmetric and the deception of consumers is a very real possibility. This supplements Tomer's focus on coaching and credible threats as a means of inducing firms into becoming more ethical and socially responsible.

One reason why a firm's leaders would choose to remain relatively unethical would be the mental models that they adopt or with which they are instilled, to made rational business decisions (Altman 2014). If one believes in the conventional theory of the firm, then being ethical and socially responsible is a costly proposition, yielding, higher average costs, lower rates of return, and lower dividends, and even lower share values. Even if this mental model is a false mental model, an incorrect representation of reality, it can still drive firm leaders to make decisions that are socially sub-optimal and as well as being sub-optimal from the perspective of the firm's employees (Altman 2014). In this case, improving the information set available to firm leaders with regards to the economic viability and sustainability of more ethical and socially responsible firms and improving their understanding of this information can result in their adopting more truthful mental models. This would shift the demand by rational profit maximizing firm leaders for more ethical and socially responsible firms.

This underlies the potential importance of business education for business leaders affecting their demand for more ethical and socially responsible firms. This type of education can be incentivized through government action (such as coaching), but also by the type of education provided by universities and their business schools and economics

departments. Tomer argues that government can coach firm leaders on the benefits of becoming more ethical and socially responsible. Of course, this overlaps with the overall importance of education in affecting firm leaders' and owners' decision-making through its impact on the decision-makers' mental models. I would also argue, that of critical importance, is government support for firms willing to invest in the start-up costs required to make their firms more ethical and socially responsible.

Providing firm leaders with a more truthful mental model can shift the firm's equilibrium position towards point *d* along line segment *Ad* in Diagram One. One can illustrate this point with a leader's demand curve for a more ethical and socially responsible firm shifting from *D1* to *D2*, moving the firm from equilibrium *f* to *g*. This would be the case for firm leaders, decision-makers, and owners as well, who have a preference for their firm being more ethical and socially responsible if this causes no harm to the firm's bottom line and, of course, its competitive position.

Note, that in this case there is no change in the preference function of firm leaders. They actually prefer more ethical and socially responsible firms. But this preference is only realized when their mental model changes, in this case as a function of more accurate information and business education. This is an important point, since I am not arguing that individuals' preferences have to change if one is transitioning to more ethical and socially responsible firms. In this case, it is the change in mental models, which is motivated by education and coaching that changes the demand for more ethical and socially responsible behaviour within firms. It is not the change in the preferences of decision-makers.

But this shift in the demand curve will not occur even if firm leaders are informed by correct mental models if they don't have a preference for more ethical and socially responsible firms. This can relate to the utility that some firm leaders might obtain from having more power (which yields positive utility) relative to their employees and society at large, which they might perceive diminishing in the context of a more ethical and socially responsible firm. If firm leaders and owners have such a relative power related preference function, the fact that their firms becoming more ethical and socially responsible has no negative impact on their firm's competitiveness and profitability, is of no consequence. Their preference function yields a socially sub-optimal equilibrium. It is this socially sub-optimal equilibrium that serves to maximize the utility of such firm leaders and owners. In this case, for firms governed by such decision-makers, one would have to go beyond education to transform firms into

more ethical and socially responsible entities even if it is common knowledge that being ethical and socially responsible is economically sustainable in a competitive market economy.

It is when one is stuck in such a sub-optimal equilibrium that methods of nudging firm leaders and owners to transform their firms into becoming ethical and socially responsible becomes critically important. Going beyond the importance of false and true mental models in affecting decision-making, one should consider the points raised by Tomer on the significance of consumer behaviour and social factors affecting decision-making as well as the fear of government intervention as motivating factors in driving more ethical and socially responsible behaviour.

One way to model the role of consumer behaviour is to assume that firm decision-makers are narrow profit maximizers and that they also have a strong preference to maintain their relative positioning with respect to their employees and the wider community. They are happy to maximize their utility at some sub-optimal, relatively low level ethical and socially responsible equilibrium. But consumers with a preference for ethical products can express their preference for the output of firms producing more ethically and socially responsibly by purchasing such output. This requires that consumers can identify this output. This point is critically important in the real world of imperfect and asymmetric information (Akerlof 1970; H. Altman 2020). If this is achievable and the output of ethical and relatively non-ethical firms sells at the same price point, this provides a competitive advantage to the relatively more ethical and socially responsibly firms. Actualizing pro-ethical consumer preferences incentivizes the most unethically oriented firm decision-makers to transform their firms into more ethical and socially responsibly entities. Otherwise, their firms' market share, profits, dividends, and share value will diminish. In this case, the unethically oriented preferences of certain business leaders can't be actualized in a sustainable manner. Market forces will force their firms into becoming more ethical and socially responsible.

In the extreme, if all consumers had pro-ethical preferences, under the conditions outlined above, with ethical firms producing at the same price point and the same average cost as relatively unethical firms, all unethical firms will go bankrupt or be transformed into ethical and socially responsible organizations. If the consumers would be willing pay a somewhat higher price for the output of the more ethical firms (where they produced at a higher average cost), this would only strengthen the hand of the more ethical and socially responsibly firms (Altman 2016; M.

Altman 2020). However, to the extent that being ethical and socially responsible dramatically increases average costs then it is less likely that most consumers would be able or willing to make such a sacrifice in real income. But this is an empirical question.

Given the above, one reason for the lack of convergence towards firms becoming ethical and socially responsibly would be the consumers not having in hand easily available, understandable, and trustworthy information on the extent to which the goods and services they are wanting to purchase are being produced by relatively ethical or unethical firms. Imperfect and costly information serves to protect relatively unethical firms and those that are not socially responsible from the wrath of pro-ethical consumer preferences. This would represent a form of market failure wherein consumers are not able to realize their pro-ethical product preferences on the market. Government can help correct this market failure by legislating for ‘ethical’ product labels so that consumer can discriminate between firms with respect to how ethical and socially responsible they are. This enhances the extent to which consumers objectively can exercise freedom of choice in the market.

Also related to significance of consumer preferences affecting the extent of a firm’s ethical practices and the extent of its socially responsible behaviour is the increasing importance of the ESG (environmental, social, and governance) related consumer activist groups. These groups can more effectively lobby corporations to change their behaviour than individual consumers. This can be done by affecting investments in the firm and by lobbying against the purchase of goods and services produced by firms that lobbies deem to be ‘dirty’ firms. This has been of particular importance with regards to corporations whose investments and/or outputs impact on the environment. In other words, ESG lobby group can affect a firm’s profitability by impacting both investment in the corporation and consumer demand. A profit-oriented firm can be expected to adjust its behaviour in the face of such lobbies to secure its profit targets and, relatedly, its position in the market. There is strong evidence that firms are investing heavily to meet ESG targets and that such investments have not harmed these firms bottom line, especially with regards to value creation (Henisz et al. 2019; Mooney 2021; Williams 2021). These investments also help maintain firms’ market share.³ ESG lobbying is just another

³ However, there is no clear and unequivocal evidence that firms’ bottom line is necessarily improved if they invest significantly in ESG. Much depends on how consumers

important instrument available to affect the extent of a firm's ethical and socially responsible behaviour and even that of firms dominated by the most narrow profit-oriented considerations.

Community embeddedness can play an important role in incentivizing firm leaders and owners in to becoming more ethical and socially responsible. In this case, I would argue that even if firm decision-makers are narrow profit maximizers and have a strong preference to maintain their relative positioning with respect to their employees and the wider community, they might modify their behaviour (choices) towards a more ethical and socially responsible behaviour, if this increases their firm's competitive position in the community within which they are embedded. This narrative is most pertinent with regards to the issue of negative externalities and where the firm is more dependent in local-community markets and financial support. In this case, community awareness of how ethical the firm is, is of critical importance. Also of significance is the bargaining power, the community has relative to the firm.

Community embeddedness as a factor affecting firm behaviour also becomes more significant when firm leaders and owners reside in the community where their firm is located (Clark and Soulsby 1998). In this scenario, locally domiciled leaders' and owners' utility would be affected by local dissatisfaction with a firm generating negative externalities within its community. This would be especially the case when community members understand that firms internalizing negative externalities will not negatively impact these firms' competitive position. If firm leaders are domiciled external to where their firms are located there may be no loss in utility associated with the firm refusing to internalize negative externalities.

The domicile of firm leaders and owners can also be important in deciding whether or not to shut down a firm that's competitive but only marginally so. Here too, the firm leaders and owners' utility can be negatively affected when shutting down a marginal firm if they are domiciled locally. In theoretical economics, there is a shut-down rule, but there is also a point at which a rational profit maximizing firm decision-maker is indifferent to keeping the firm open or shutting it down. It is at this point of indifference where the location of firm leaders (the community

react to the knowledge that firms are not performing ethically and in a socially responsible manner. And this depends on the information consumers have in this domain and how well they understand this information.

embeddedness of a firm) can play an important role in determining if a marginally competitive firm is shut down.⁴

Tomer place some weight on firm leaders and owners changing their behaviour under the credible threat of government intervention with regards to the ethical practices inside their firms and the extent to which these are behaving in a socially responsible manner. This would suggest the importance of government making explicit what are acceptable dimensions of relatively unethical practices and the limits to behaviour that is not relatively social responsibility and what are the consequences on not enacting suggested government provisions. It is important that this notion of credible threat needs to be operationalized to be meaningful in relation to specific policies and incentive environment. Moreover, it is important to recognize the efficiency costs that might flow from any centralized bureaucratic provisions imposed or recommended for firms and localities in general where individualized provisions might be more effective and efficient. Still, the credible threat argument can be important where the preferences of decision-makers are not predisposed to more ethical and socially responsible behaviour.

5 CONCLUSION

John Tomer argued that the ethical and socially responsible firm is the ideal firm, and it should be more productive than the less ethical and socially responsible firm. Hence, rational decision-makers should choose to transform their firms into more ethical and socially responsible organizations. Since this choice is typically not made, firm leaders' behaviour is not quite rational (quasi-rational perhaps) and society ends up with sub-optimal x-inefficient outcomes. Hence, Tomer argues that firms should be nudged into being transformed into more ethical organizations through coaching (largely by government) and through the credible threat of government intervention if firm leaders do not undertake this transformation on their own.

⁴ In the short run, where price is less than average variable costs, the firm should shut down. But when price equals average variable costs, and this calculation is never precise and is subject to change even in the short run, firm leaders may or may not shut down the firm. The firm leaders might be indifferent to shutting down the firm if their utility is unaffected by their decision. However, if utility is affected by the domicile of the decision-maker, this can tip the shutdown decision in favour of keeping the marginal firm open and giving it time to restructure itself into becoming a more profitable entity.

I build on Tomer's core arguments, embedding them in an x-efficient behavioural theory of the firm narrative with rational decision-makers. I also introduce the notion of mental models and the importance of informed consumer choice as additional key determinants of the extent to firm which firms become more or less ethical and socially responsible. This compliments Tomer's emphasis on coaching as a determinant of the extent to which a firm is ethical and socially responsible. Finally, I introduce the notion of how community embeddedness can positively influence rational decision-makers towards transforming their firms into more ethical and socially responsible organizations.

Unlike in Tomer's narrative, I present a multiple equilibrium model wherein both ethical and unethical firms are competitive even though the ethical and more socially responsible firm is more productive. This productivity advantage is often counterbalanced by the increased cost of being more ethical and socially responsible. This helps explain why, even within the framework of rational decision-making, Tomer's ideal firm need not dominate the marketplace. In this case, changing the mental models of decision-makers such that there is an appreciation of the competitiveness of the more ethical firms can serve to shift the decisions of decision-makers with a preference for more ethical and socially responsible behaviour towards transforming their firms. Even decision-makers who prefer ethical firms will not move in this direction if their thinking is dominated by mental models that predict that more ethics and social responsibility are very bad for business. This focus on mental models compliments Tomer emphasis on coaching whereby coaching affects which mental model is adopted.

But I also introduce the importance of consumer demand in driving firms into becoming more ethical and socially responsible when consumers are provided with accurate and easily accessible information on the ethical and socially responsible pedigree of firms (their supply chain) selling goods and services. This would be the case even when firm leaders have a strong preference for not transforming their firms into more ethical and socially responsible organizations. If the market demands more ethical and socially responsible firms, then even very profit-oriented and very anti-communitarian firm leaders are incentivized to transform their firms. Otherwise, their firm might very well earn the wrath of the market, making them less profitable and even unprofitable. Community embedded can play this same role.

Overall, Tomer's ideal firm can be realized when profit maximizing or profit-concerned decision-makers have the ability and the incentive to transform the firms under their charge into Tomer's ideal, ethical, and socially responsible firms. But decision-makers must also have an accurate understanding of how being ethical and socially responsible affects their firms' bottom line and competitive position.

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John Tomer, X-Efficiency Theory, and Behavioral Economics

Roger Frantz

1 INTRODUCTION

Tomer shared many ideas with Leibenstein's philosophy and writings. More than this, Tomer appreciated Leibenstein's contributions to economics. I will show these things in some of Tomer's articles published between 1998 and 2012 and relate each article to some point made by Leibenstein.

2 LEIBENSTEIN'S X-EFFICIENCY (XE) THEORY

XE theory contains a few major elements. In his seminal article, Leibenstein begins by discussing why a non-allocative form of (in)efficiency

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is important. For one thing, (allocative) efficiency— $P = MC$ —is essential in economics. But empirical evidence casts doubt on the importance of allocative efficiency. Estimates of allocative inefficiency are between 0.001 and 0.0001% of GDP. Despite this doubt, efficiency in some form is important. Leibenstein gave that form the name X-efficiency. X-(in)efficiency is the deviation of a firm from its frontier. One assumption of XE theory is that a person's level of effort varies. Leibenstein says that it is obvious to everyone except some economists that people don't work as hard or as smart as they can. Unless the firm has a dictator who can control every movement of every employee, labor's effort is, to a certain extent, discretionary.

Employees, at all levels of the firm, have their own complex objective function. Keeping their job is one, and on-the-job comfort is another. Employee effort is not allocated only to the firm's pursuit of profits and cost minimization. People don't search for information or solutions to problems as well as they can. These result in the relationship between inputs and output being indeterminate. Second, labor contracts are incomplete. Hours to be worked, tasks to be completed, vacation time and many other aspects of the job can be specified. However, not all aspects can be specified. In fact, it is not in the firm's interests to try to completely specify all aspects of the job. Union people have always known that the way to bring a firm to a halt is to work according to the rules. Incomplete labor contracts give employees some freedom to pursue their own complex objective function which increases costs above minimum, i.e., X-inefficiency.

Third, the production and cost functions are incomplete. This means that there is not a completely determined level of output for each level of inputs. For any level of inputs, the output rate can vary. The production function is thus a band rather than a line. Production is not the result of an engineer's blueprints being carried out to specifications. In *War and Peace*, Tolstoy writes that "Military science assumes the strength of an army to be identical with its numbers. Military science says that the more troops the greater the strength... In military affairs the strength of an army is the product of its mass and some unknown x ... That unknown quantity is the spirit of the army..." (Leibenstein 1976, p. vii). Leibenstein goes on to say that understanding the level of economic output requires more than knowing the "observable inputs" including technology. What Tolstoy calls "spirit" Leibenstein calls effort, both physical

and mental. Incomplete, gaps, discretion, and spirit. These are words which demand filler-words. The fillers became behavioral economics.

Fourth, rationality is often less than 100%/perfect/homo economicus rationality. Leibenstein claims that human beings are “selectively” rational. The basis for this is the psychological makeup of human beings. In *Beyond Economic Man* Leibenstein spells this out. The concept that an individual can contribute to X (in)efficiency arises from an individual’s split or dual personality. Of course, a human personality is not literally split, but the image of a split personality conveys the intuition that individuals are torn—not literally—in their preferences. On the one hand, we want to adhere to standards, to strive for the maximum, and to strive by being calculating and attentive to details. In other words, this aspect of the personality is our rational self, the part of us that uses “tight,” focused, or rational decision-making procedures. Leibenstein refers to this aspect of our personality as the “superego function.” The other tendency is for each of us to “kick back,” to use “loose” decision-making procedures, to follow our “animal spirits.” Leibenstein refers to as the “id function.” It is the id function that leads us to be “unconstrained,” that is, unwilling but not necessarily unable to be calculating, attentive, rational.

XE theory assumes that, on the average, each individual is influenced by both functions in a way that leads to a compromise between the two. That is, each of us forges a compromise between the way we feel we must behave and the way we would like to behave were it not for a sense of obligation to duty or to a set of standards. In other words, each individual strikes a compromise that provides them with a sense of (psychological) “comfort.” Individuals are thus selectively rational. X-E. Leibenstein assumes that, on average, each individual is pushed by their superego to maximize and pulled by their id to kick back and watch the world flow by. That is, each of us forges a compromise between these two forces that provides them with a sense of (psychological) “comfort.” The human personality is thus seen as having two end points. On the one end is an intense concern for constrained behavior—economic man—while on the other end is a complete lack of constrained behavior. The former would be a fully rational person, with others exhibiting “selective rationality.”

Rationality is thus a continuous variable with an “economic person” exhibiting complete constrain concern. The economic person is thus a limiting case: a characteristic of the decision-making procedures used by some people at some times but not necessarily characteristic of all people

at all times. “We assume that basically an individual effects a compromise between his desires to do as he pleases and internalized standards of behavior acquired through background and environment. Thus, we assume that individuals are influenced by others and that their psychology requires them to strike a balance between conflicting desires” (Leibenstein 1976, p. 71). A human being lives within the needs of a dual or split personality.

3 TOMER’S WRITINGS AND X-EFFICIENCY THEORY

(1) In, “Beyond the Machine Model of the Firm. Toward a Holistic Human Model” (Tomer 1998), Tomer says that according to mainstream economic theory organizations are essentially machines, transferring inputs into outputs with maximum efficiency. The machine model is what Tomer refers to as the “core” theory of the firm. According to Tomer, the machine model includes only hard elements, things which are tangible, physical, measurable elements, capable of being expressed in mathematical relationships. However, the machine model leaves out of account “soft” elements such as leadership, vision, passion, ethical principle, character, empowerment, self-realization, commitment, community, and inspiration. These soft elements are considered contrary with the “hard” nature of economic theory. Tomer makes a good point, that if the only important elements are the “hard” elements, then all firms should produce on their frontiers. But, he says, they do not; some companies are great, some average, some mediocre. This is because there is more to efficiency than simply the hard elements.

Leibenstein’s XE theory discusses hard and soft elements without using the words hard and soft. XE theory recognizes that the production function includes labor, capital, and state of knowledge. The production function is not complete, i.e., the hard elements, or inputs, do not produce a maximum amount of output. A given amount of hard inputs will produce a variable level of output. In Leibenstein’s original formulation of the theory, he cited aspects of the organization such as plant layout and organization, waste control, and the handling of materials. All of these things require leadership and vision, soft elements, things which Leibenstein included in his theory but didn’t explicitly mention.

Tomer says that XE theory is an extension of the “core” theory. These extensions add realism by discussing how features of the organization affect efficiency, profits, and competitiveness. XE theory is still a machine

model because it leaves out of account “soft” elements, and because the production function is only relatively complete. But, it is an extension outside the mainstream because it adds another form of (in)efficiency, X-(in)efficiency, to the mainstream’s allocative efficiency. And it recognizes that X-inefficiency is the usual state of affairs. Tomer says that X-inefficiency can be reduced by the firm investing in organizational capital, a form of capital not in the machine model. Organizational capital is intangible human capital which affects the productive capacity of the firm by affecting relationships within the firm. Leibenstein did discuss intrafirm relations with the concept of effort equilibrium, inert areas, APQT bundles, and the role of supervision or management. Intrafirm relation in XE theory has a major effect on work effort, hence productivity and (X)efficiency. But Leibenstein didn’t use the term organizational capital.

Tomer then “goes where no economist has gone before, or after,” advocating for a “holistic model.” In his holistic model, the firm is an “organic integrated whole with a reality greater than the sum of its parts, a model reflecting the new scientific paradigm” (Tomer 1998, p. 281). It includes the soft elements. However, “Many economists will be uncomfortable with the holistic model because it includes ‘higher’ aspects of human behavior that cannot be quantified precisely or reduced to a monetary dimension...” (ibid., p. xxx). One of the “higher” aspects is “our deep inner self: [It] is the us beyond all the things [physical body, five senses, mind, feelings, innate tendencies, etc.] we usually think are the real us.... Spirit...refers to our (and our organizations’) aliveness is the vitality that dwells in our body...[is] the very source of that energy....Spirit refers to our other reality, our real reality, our higher reality—the one which at some inner level we know exists but at times we forget that we know” (ibid., p. xxx). Tomer mentions as an example of spirit in business, *The Soul of a Business* (1993), by Tom Chappell, President and CEO of Tom’s of Maine. Many years ago, in a previous lifetime, I met Tom Chappell, a man who attended the Harvard Divinity School. He was a very impressive human being. Being that as it may, an organization which acknowledges the spirit is one in which no one is shy “to talk about the spiritual or mystical aspects of the team, the craft, the product or service, the persona of the leader, the history and the lore of the activity, the meaning of being able to be part of such a system” (ibid., p. xxx). Neither Leibenstein nor Irving Fisher with his theory of psychic income went this far from the norm.

(2) “Economic Man Vs. Heterodox Men: The Concepts Of Human Nature In Schools Of Economic Thought.” Tomer (2001) says that “Economic man, the man who acts on pure economic motives alone, is the concept of man at the heart of mainstream economics...Heterodox economists, while acknowledging that economic man has served usefully for some purposes, know in different ways that economic man is, because it leaves out too much of human nature, a deficient concept of man” (Tomer 2001, p. 282). Economic man (EM) is self-interested, rational, unchanging, rate, and unreflective.

Leibenstein did not believe that humans were always economic man. He believed in selective rationality, whereby rationality varies between 100%—economic man—and something less than 100%. Leibenstein acknowledged that economic man leaves out part of human nature, that people can be simply lazy, that human emotions can direct the individual away from taking the steps required for complete rationality. This is part of Leibenstein’s discussion of the id and the superego. However, Ken Wilber theory went far beyond anything Leibenstein ever wrote about.

(3) “Beyond the rationality of economic man, toward the true rationality of human man.” Tomer (2008) says that “Economists need to utilize a true rationality conception that includes not only instrumental rationality but rationality of ends. A decision cannot be truly rational unless a person is choosing what is really best considering (1) the long-term consequences of the individual’s behavior, (2) the person’s sense of morality, and (3) what gives the person real happiness” (Tomer 2008, p. 1703).

The nature of rationality was central to Leibenstein. Leibenstein did not believe that objective rationality is the only form of rationality. Objective rationality is the rationality of economic man, the maximization of some function, substantive rationality, the equality of marginal costs and marginal benefits. His preference was what Simon called procedural rationality. In X-efficiency theory a rational decision was based on certain specific procedures. For now, the procedures include making non-reflexive decisions, independent decisions, not deferring decisions because you believe that decisions will be easier in future, making decisions based on a realistic assessment of the environment.

(4) “Brain Physiology, Egoistic and Empathic Motivation, and Brain Plasticity: Toward a More Human Economics.” Tomer (2012) compares the views of the human brain in mainstream and heterodox economics. In mainstream economics, the brain has five characteristics or functions.

First, our sole motivation is self-interest. Other emotions are secondary. People are “altruistic” only if it is in their self-interest to be “altruistic.” Second, people have very high or infinite cognitive capacity. Third, people have no real empathetic motivations. Fourth, rationality is about the use of logic and reason for gaining the best outcome for oneself. Fifth, in the “pure” version of mainstream economics, human capacity is the same for everyone. Cognitive capacity is infinite and empathic capacity is zero. In the not so pure versions, people’s investment in various types of human capital may change some of their human capacities.

The alternative to mainstream economics is the Paul MacLean-Gerald Cory view, also known as Dual Motive Theory (DMT). DMT makes several assumptions. First, People have two dominant motivations, one is ego or self-interest needs, and the other is empathy toward others. Second, people’s cognitive capacities are adequate but limited. Third, people can balance their two main motives. Fourth, rationality means balancing the two main motivations, and using logic and reason to achieve ones goals. Fifth, people have a capacity for empathy, cognitive capacity, integrative capacity (balancing ego and empathy), and achievement capacity, achieving ones goals.

Leibenstein’s discussion of the brain was much more limited to the characteristics of the id and the superego and their effects on behavior. However, in his writings about the prisoner’s dilemma, he wrote about people being both self-interested and empathetic. His theory of selective rationality implies that people’s cognitive capacities are adequate but often limited. People try to balance their desire for working with full rationality, and their need to be “laid back” so that they are “comfortable.” However, Leibenstein never wrote about DMT.

4 TOMER’S BEHAVIORAL ECONOMICS AND ITS RELATIONSHIP WITH XE THEORY

In, What is behavioral Economics? John Tomer compares behavioral economics with mainstream economics. The comparison is made on the basis of six dimensions: (1) narrowness, (2) rigidity, (3) intolerance, (4) mechanicalness, (5) separateness, and (6) individualism.

Narrowness is a restriction of methods and/or its scope of substantive inquiry. Positivism means narrowness because it rejects nonquantitative and literary methods to scientific discovery. The use of rigorous testable hypotheses framed in mathematics means narrowness. Rigidity means a

lack of pragmatism and flexibility in the methods used. Intolerance refers to a hostility or rejection of other disciplines. Mechanicalness means that the people and/or institutions of the economy behavior similar to machines. Separateness means that the research in questions is not connected to or integrated with other disciplines. Individualism implies that the ultimate constituents of the social world are individuals. The individualism of a discipline refers to the fact that individuals are the basis of all activity. Groups and social motivations are rejected.

Narrowness. Tomer says that Leibenstein's research is less narrow than that of neoclassical theory (NCT), but narrower than Simon's research. Tomer sees Leibenstein's relatively non-narrowness in his questioning of the rationality postulate. Tomer seems to say that Leibenstein denies that people maximize. This is not exactly correct. Leibenstein only questioned whether people always are maximizing and always completely rational. Leibenstein also questioned marginal productivity theory. In the 1950's, Leibenstein also worked with Walter Galenson on economic growth and development in lesser and more developed economies. The result was a catalog of inputs explaining differences in international productivity growth. Leibenstein's tendency for generalizations rather than a tight analytical model is expressed when he said that "We do not intend to advance a complete model" (p. 343). The paper is theoretical, utilizing mostly simple graphs and equations.

Leibenstein challenges the use of the (social) marginal productivity principle for allocating investment, and for increasing economic growth and development. Economic theory says that the efficient use of investment funds is achieved when the social marginal product in each alternative use is the same. This will maximize the value of the national product. The principle implies that a less developed economies should use technologies and choose industries which require a lower capital/labor ratio than that used in more developed economies. Leibenstein (and Galenson) argue that the best path uses the best technology on as large a scale of operation possible, and a high capital/labor ratio. Why? Because given high rates of population growth, and; political and institutional instability which hinder technological change, time is of the essence in development. This requires a rapid rate of growth to escape the Malthusian trap, and that is achieved with the best technology, high capital/labor ratios, and large scales of operation. The capital/labor ratio is not the important thing for growth and development. The important thing is the output/labor ratio, the productivity of labor. And this is affected by

several things, including capital per worker; the size of the labor force and the capital stock; the quality of the labor force, i.e., skills, knowledge, energy, adaptability, health, energy, and discipline, and; the organization of labor, a factor which would be central to X-efficiency theory. The list and in the context of economic growth and development sounds similar to the work of Edward Dennison the 1960s and 1970s (1962).

At Princeton Leibenstein's two mentors were Frank Notestein (1902–1983), the demographer, and; Oscar Morgenstern (1902–1977), the co-author of *Theory of Games and Economic Behavior*. Notestein is known for his work on population change, specifically, the demographic transition (DT). DT is the change in population a country goes through from a pre-industrial to an industrial economic state, when population is characterized by high birth and death rates to lower birth and death rates. Notestein was more interested in problem-solving than in engaging in analytical modes of research. Thus, he generalized more than he wrote mathematical papers. Leibenstein wrote his doctoral dissertation under Notestein's mentorship, and his dissertation became his 1954 book, *A Theory of Economic-Demographic Development*. It is a book of pure theory with a few simple equations and graphs, not the tight analytical method of mainstream economics.

Harvey the Austrian. Morgenstern's (Austrian) influence was felt in Leibenstein's 1950 paper on consumer demand, and in his expressing certain beliefs which are part of Austrian economics: the importance of the individual, methodological individualism; the role of science in understanding and prediction, and; subjective rationality vis-à-vis objective rationality.

How are his beliefs related to behavioral economics? They are part of understanding real human behavior. With respect to methodological individualism, Leibenstein says that it is virtually self-evident to non-economists and, at the time. The Austrian philosophy of methodological individualism is what Leibenstein considered self-evident. Focusing on the individual, Leibenstein sees that an organization's goals are the goals of the individuals in the firm because a firm is but a collection of individuals where each individual has a role to play. An organization has no will of its own and will behave only as the individuals working in the firm behave. This implies that individuals have a certain amount of free will on-the-job. The only exception to his ideas of methodological individualism is when the organization is run by a "dictator with perfect control." But

this rarely, if ever, exists. As a result, employees enjoy a certain amount of effort discretion, and this helps explain the firm's direction.

It also implies that more basic to an organization than production is activities, or "doing." John R. Commons said that "transactions" were the basic unit of analysis, and Oliver Williamson said that transactions are at the heart of transactions cost analysis. The Austrians called it "catalactics." In Harvey's view, both the market and the firm are a system of exchange. Interactions create benefits and costs. However, in neoclassical theory, the exchanges are based on full information, i.e., complete production and cost functions and complete labor contracts. Exchanges are effective because communications are effective, because the "market" for human interactions is effective. But incomplete information and imperfect markets create a gap between the potential and the actual output and costs. And these give rise to X-inefficiency.

Prediction and understanding. Leibenstein called the idea that prediction is the only criteria of scientific knowledge as the "romantic" view (Leibenstein 1976, p. 12). The romantic view he held to be simply "a matter of faith or of taste." Leibenstein was an advocate for understanding, a coherent explanation of events, as being another criteria for scientific knowledge. He says that prediction without understanding is "worthless." Explanation without prediction is "sufficient" (*ibid.*, p. 13). Leibenstein agrees with Hayek that prediction in economics is difficult because of too many interrelationships between a very large number of economic and noneconomic variables. The noneconomic variables are particularly troubling because they cannot be understood with (the then) existing knowledge of economics. And the future is truly unknown which makes prediction very difficult. What economists can do is to understand general trends or patterns. Hayek called this the "explanation of the principle."

Tomer says that XE theory is "In principle testable." And, Leibenstein's own contribution has been purely theoretical but others could presumably do the relevant empirical investigations. XE theory did not use mathematical formalism which made it more accessible to many people who were not skilled at mathematics. Therefore, XE was not very narrow.

About mathematical formalism, In the Appendix to Leibenstein's 1976 book, *Beyond Economic Man*, pp. 273–282, Leibenstein and Peter Kalman, along with their students Lee Edlefsen and Kuan Pin Lin,

presented a mathematical presentation of XE theory. “Towards a Mathematical Formalization of X-Efficiency Theory.” The topics covered in the Appendix included psychological and effort spaces, inert areas, and the XE theory of production. Leibenstein doesn’t deny that people maximize; he denies that people *always* maximize. XE theory is not “in principle” testable. It has been tested in over 200 empirical studies.

Tomer says that because XE theory focuses on intrafirm relationship, testing the theory brings with it special challenges. Estimating XE has for the most part ignored the underlying relationships within the firm. These relations are assumed to affect the level of intrafirm efficiency, or X-efficiency which is what the empirical studies estimate. Estimating XE has been done using either a cost or a production function. And, the studies estimating XE use either parametric or nonparametric approaches. The main parametric approach is the Stochastic Frontier Analysis (SFA), while the main nonparametric approach is the Data Envelope Analysis (DEA). DEA seeks to define an optimal or “best practices” production frontier. This goal is accomplished by using data on the observed combinations of inputs used by each firm in the sample and constructing a piece-wise linear optimal production frontier. Specific points along this frontier are defined by the firms within the sample that most efficiently use a given mix of inputs to produce some level of output. The efficiency of individual firms may then be measured by comparing deviations from this frontier. SFA models as a general class attempt to formulate a best practices production frontier that defines what a 100 percent efficient firm’s output would be given a certain input mix. This best practice frontier is hypothetical—it may or may not be the case that any of the firms in a given sample exhibit 100 percent efficiency.

When a cost function is used it takes the form $C = C(w, y, z, \mu, \epsilon)$, where w is variable input prices, y is variable outputs, z is amount of fixed inputs or outputs, μ is that part of the residual representing inefficiency, and ϵ is that part of the residual representing the random error (measurement error and other data problems, and luck, good or bad).

The nonparametric approaches do not allow for random error so the entire residual is assumed to be X-inefficiency. The parametric approaches allow for both X-inefficiency and “noise.” As a result, the nonparametric approaches are likely to report higher levels of X-inefficiency—lower levels of XE—than would the parametric approaches. Among U.S. banks in the studies reviewed by Berger and Humphrey (1997), the average level of XE using nonparametric and parametric approaches was 72% and 84%,

respectively. Using a nonparametric approach, the average firm was 72% as efficient that they can be. The average firm was producing approximately 28% below their production frontier or 28% above their cost frontier. Using the parametric approach, the average firm was 84% as efficient as they can be. They were 16% below their production frontier or 16% above their cost frontier. The average level of XE for various nations between 1990 and 2015 is summarized below. Average XE is 0.763 and 0.757. Therefore, average X-inefficiency, or the deviation from the frontier is measured in two ways. First, $1 - 0.763 = 0.24$, and; $1 - 0.763/0.763 = 0.31$. The average deviation from the frontier for all organizations in all nations and continents is approximately 27%. For the average XE level of 0.757, average X-inefficiency is $1 - 0.757 = 0.24$, and $0.24/0.757 = 0.32$. Average X-inefficiency, deviation from the cost and/or production frontier, is 28%. These studies are discussed in Frantz (2019).

The research on XE often uses frontier analysis, estimating the frontier cost or production function, and then comparing the costs or output rates between the most efficient, frontier, firm with other firms within the industry. The XE level of the most efficient firm(s) is 1.0 and that for the other firms is between 0.99 and 0.0. Frontier analysis is used for many issues including deregulation (Elyasiani and Mehdiian 1992), management quality (DeYoung 1998), problem loans and Granger-causality (Berger and DeYoung 1997), market power (Berger and Hannan 1998) mergers (Peristiani 1997), organizational form, e.g., ownership form (Berger and Meister 1997), and intercountry and/or interindustry efficiency differentials (Ruthenberg and Elias 1996).

Berger and Humphrey (1997) reviewed XE research among financial institutions—commercial banks, S&Ls, credit unions, as well as insurance firms covering 130 empirical studies in North and South America, Europe, Asia, the Middle East, and Africa. Among U.S. institutions, the average level of XE for banks was 0.79, 0.79 for insurance firms, 0.83 for S&Ls, and 0.88 for credit unions.

<i>ESTIMATING LEVELS OF XE</i>	<i>Average XE</i>
<hr/>	
FINANCIAL INSTITUTIONS—1990–2015	
China	0.73
Taiwan & Singapore	0.81
U.S. & W. Europe	0.74

(continued)

(continued)

<i>ESTIMATING LEVELS OF XE</i>	<i>Average XE</i>
Aus., Africa, Lat. Am., M.E., ASEAN	0.77
	0.763
NON-FINANCIAL	
Taiwan—1990–2015	0.83
Various Nations—1990–2015	0.71
Various Nations—1967–1990	0.73
	0.757

Rigidity means that the research is not flexible. It is not pragmatic. It uses the same methods regardless of the type of research being done. XE theory is relatively low on the rigidity scale. Although Leibenstein seems attached to his characteristic mode of analysis, there is some evidence that he has been pragmatic enough to depart from this mode when the situation warrants. Leibenstein research was not flexible because his intention was always the same. That intention was to ask what are the implications when one or more assumptions of ME are changed, and, in particular what are the implications of assuming non-complete rationality for economic theory. In 1950, the year Leibenstein published “Bandwagon, Snob, and Veblen Effects In the Theory of Consumer Demand,” the theory of consumption was dominated by the Keynesian theory of consumption. The Keynesian consumption function is the relationship between aggregate real consumption expenditure and real national income. Keynes did allow for subjective factors in consumption such as attitudes, expectations, showiness, and overindulgence. However, it was argued that in the aggregate these factors would be canceled out by differences among individuals and hence need not be included in the determination of aggregate consumption. Milton Friedman developed the permanent income hypothesis. Franco Modigliani and Richard Brunberg (1990) developed the life-cycle consumption hypothesis. James Duesenberry developed the relative income hypothesis. What all of these theories of consumption have in common is the role of income, whether present or future, absolute of relative. Individuals, individually or collectively, are making decisions about consumption and savings based on income, all of which are relatively easily measured variables. Duesenberry introduces a comparison among people(relative income) as the basis for consumption

and savings decisions. By contrast is Leibenstein's theory of consumption. His 1950 paper was written initially for a seminar at Princeton.

Leibenstein's theory consumption is not based on an objective variable such as income—current or expected future income—but on how one person reacts to what he believes that others are doing. So, objectively measured variables such as income are replaced by subjective beliefs, and by reactions to subjective beliefs. The inner life of a person was brought closer to a main role in an economic theory. Morgenstern's influence would seem to be clear. Thus, his 1950 paper is an early version of behavioral economics, or if you prefer, economics and psychology. In this 1950 article, "Bandwagon, Snob, and Veblen Effects In the Theory of Consumer Demand," Leibenstein discusses three cases when a change in price affects quantity demanded and demand itself. Leibenstein refers to the three cases as the bandwagon effect, wanting to be "in style;" the snob effect, the desire to "attain exclusiveness," and; the Veblen effect, displaying your wealth or trying to convince others of your wealth via conspicuous consumption." All three are cases of the "interpersonal aspects of utility and demand" (Leibenstein 1950, p. 184), or social influences on consumer behavior. Leibenstein credits his ideas with his Princeton mentor, Oscar Morgenstern, who considered cases when the market demand curves are not horizontal summations of individual demand curves, i.e., there is non-additivity between individual and market demand curves. Therefore, Leibenstein describes the purpose of his article as a "reformulation of some aspects of the static theory of consumers' demand while permitting the relaxation of one of the basic implicit assumptions of the current theory." That assumption is the independence among individuals in consumption decisions.

XE Theory. At the University of California, Berkeley, one of Leibenstein's graduate assistants worked with varying degrees of effort. This graduate assistant had effort discretion, one of the basic assumptions of the theory. The graduate student had effort discretion because the labor contract between the graduate student and the Economics department was incomplete. In this case, Harvey did not have complete control over his graduate assistant's every action. One day this graduate student would work with great effort, and the next day he would, as if, sleep walk through the day. After observing this for some time Leibenstein had an aha moment. He wondered whether this pattern of behavior was the pattern expressed by many people other than his graduate assistant. Almost twenty years later Harvey told me about this, and he remembered

every detail of the student's behavior patterns as well as his, Harvey's, reactions. Thus began X-efficiency theory.

In 1966, the year Leibenstein wrote his seminal article on X-efficiency theory, the question was what are the efficiency effects of market power. One answer is allocative (in)efficiency, the deviation of price from marginal cost. Leibenstein asked whether there could be another type of (in)efficiency, affected not by the market structure but by the inner workings of the organization. Is it possible? In 1966, the economics profession utilized a "tight" analytical models and reliance on mathematics and econometrics. Leibenstein utilized neither "tight" analytical models, nor mathematics or econometrics. Leibenstein wasn't engaging in more narrowly focused experiments. He was writing a broader and a more encompassing "vision." Broader is not better than narrower, it is simply different. The question was how non-complete rationality affected organizations. Rationality is considered to be selective, sometimes economic man rational and sometimes something less. This is not the deviation of price and marginal cost but the difference between minimum cost and actual cost, or maximum output from actual output. How far from the frontier is the organization operating? The question Leibenstein asked was always basically the same: how does real human behavior and its effects differ from what neoclassical economics prophesizes.

Intolerance. Although Leibenstein seems attached to his characteristic mode of analysis, there is some evidence that he has been pragmatic enough to depart from this mode when the situation warrants. His judgment is that XE theory is low in intolerance. Leibenstein was very tolerant, in part because he was not-orthodox and hence didn't want to annoy anyone. Having observed non-allocative inefficiencies in lesser developed countries, Leibenstein set out to develop a theory of non-allocative inefficiencies. At the time, mid-1960's, no one ever wrote about non-allocative (in)efficiencies. So, Harvey called them X inefficiencies: X for unknown. The only inefficiency was allocative and known as the deadweight welfare loss. Arnold Harberger, Nobel Prize winner in 1999, estimated allocative inefficiency to be only between 0.001 and 0.0001 of GDP (Harberger 1954). For a \$16 trillion GDP, this is equal to between \$16,000,000,000 and \$1,600,000,000. Each year Americans spend \$18,000,000,000 on specialty coffee, and \$7,000,000,000 on potato chips. Allocative inefficiency is, to use a line from the Godfather, "small potatoes." It is, for all intents and purposes, insignificant. Mundell thus lamented that if inefficiency is insignificant then so are economists!

(Mundell 1962). Fortunately inefficiency is not limited to allocative inefficiency. X-inefficiency—internal inefficiency of the firm—costs higher than technologically necessary costs—has been estimated to be in the area of three percent of the GDP. For a \$16 trillion economy, this is \$480,000,000,000 (An anonymous source reports that when Mundell heard this his blood pressure dropped 15 points.) Harvey, who considered himself to be a neoclassical economist, except, he found it to be too narrow, and too intolerant.

Mechanicalness. The quality of mechanicalness refers to the machine-like ways/behaviors of the institutions and/or participants in the economy. Because Leibenstein has relied heavily on the use of partial equilibrium analysis; XE theory can be considered relatively high on the mechanicalness dimension, but not as high as ME. The somewhat interdisciplinary quality of Leibenstein's research helps reduce its mechanicalness. XE theory was not high on mechanicalness. Leibenstein work was against mechanicalness, the mechanicalness which accompanies complete rationality. The humans in XE theory were not assumed to be completely rational. Hence they didn't act similar to a machine. Their behavior depended on the set of emotions which were flowing through their body. For Leibenstein it was the superego, a desire to be rational, and the id, a desire to be avoid the responsibility required for rational behavior. It also depended on the behavior of those around them. Reliance on partial equilibrium analysis is not related with mechanicalness. In XE theory, the absence of complete rationality in the context of partial equilibrium analysis meant that the result of human behavior was not the automatic equality of price and marginal cost, or the existence of allocative efficiency. It meant the existence of non-allocative inefficiency, i.e., X-inefficiency. In his 1950 article on bandwagon, snob, and Veblen effects, people's behavior is not mechanical, but depends on their psychological orientation to the world. Are they followers, loners, or driven by conspicuous consumption?

Separateness. Leibenstein's general approach involves utilizing key insights from noneconomic behavioral disciplines but not explicitly drawing on noneconomic research. Therefore it is of average separateness. Leibenstein's use of the concept of the id and the superego was an explicit use of noneconomic research. So was the use of the bandwagon and snob consumer behavior, both borrowed from sociology. He borrowed from Yerkes and Dotson's (psychology) Yerkes-Dodson Law, the relationship between pressure and the quality of decision-making. He also borrowed,

from among others, R. L. Opsahl (psychology), Zellig Harris (linguistics), Dov Eden (Management), J. A. Litterer (organizational behavior), Chie Nakane (anthropology), Daniel Nelson (history), David Pears (history), Joshua Ronen (accounting), David Miron (computer science), Amatai Etzioni (sociology), and Ward Edwards (psychology),

Individualism. Leibenstein's analysis focuses very much on the individual, an individual who is self-interested, but generally not fully rational. The "man" is a social man because he is constrained by commitments, social obligations, and conventions, and cooperate. Psychological man is also present because the supergo has a need to for success. Self-actualizing man is, however, not present in Leibenstein's work. Tomer rates XE theory midway in individualism. Leibenstein's use of the inert area game theory shows the need to cooperate. The inert area is all effort levels about which the person is indifferent. That is, the individual is willing to produce with effort levels within the inert area. A little more effort or a little less means nothing to that person. But, at the same time, once they land within the inert area they will tend not to change. Is their effort level an optimal level from the point of view of the organization's efficiency? Maybe. This is one reason why the organization may not operate with 100% X-efficiency.

A group has an inert area. It includes all effort levels within all members' inert area. The group's inert area will be equal to or smaller than that of any one person points within the common inert areas of each group member. The concept of the multi-person inert area also means that relatively low as well as relatively high effort levels will not be part of the group inert area. Thus, the effort level exhibited by the group will approach the average level of productivity of each group member. We may thus think of group effort as a "convention," an agreement.

For Leibenstein the issue was the determinant of productivity, and X-efficiency. In X-efficiency theory, labor has discretion over effort because labor contracts are incomplete. The determination of productivity depends on both the individual and the group. Leibenstein illustrated this using the prisoner's dilemma as an example. The prisoner's dilemma (PD) is a situation in which each individual acts according to his own self-interest and the outcome is not optimal for any one. In Leibenstein's PD model both labor and management have two options: altruistic behavior and selfish behavior. Altruism means that you treat the other the way you want them to treat you. Workers are treated as if they are owners. Workers work with an effort level as if they are the owners. Selfish behavior means

“looking out for # 1.” Workers put out the minimum effort which keeps them employed, and management seeks maximum profits by minimizing costs. Leibenstein shows that: (1) if labor is altruistic and management is selfish, then management wins. (2) If labor is selfish and management is altruistic, then labor wins. If they are both selfish, then both lose and we have the PD. If they are both altruistic then both win and we have a Pareto optimum. Productivity and X-Efficiency are the outcome of individual and group behavior.

5 CONCLUSION

Tomer went beyond anything that Leibenstein ever wrote about. When it came to “normal” economics, Tomer and Leibenstein had many consistencies but some inconsistencies. But when Tomer veered off into humanistic models, he also veered far from Leibenstein. Both however were behavioral economics, a subset of economics which is able to include many different voices. Let us hope that this never changes.

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PART IV

The Behavioural Economics of Healthy
Living



The Behavioral Economics of Healthy and Sustainable Food Consumption

Gerrit Antonides 

1 INTRODUCTION

Food consumption has been driven by other factors than its nutritional value already for a long time. With superior technology and rising income, it has become possible to produce more exciting types of food and also to consume and enjoy it more than ever before. The world food consumption is expected to increase by 50% in 2050 and animal-based food by 70% (Searchinger et al. 2019). Though increasing consumer welfare, this development also creates problems for both individuals and society. In addition to a growing world population and a trend of urbanization, further increasing the demand for food, the production of food has become more voluminous and more intensive, while agricultural resources have remained limited. The one quarter of available land for agriculture on the planet is already fully in use for food production, although this

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land is increasingly degraded due to intensive or unsustainable production methods (Moomaw et al. 2012). These developments are severely threatening world food security. Another adverse effect of animal-based agricultural production is its 14.5% share of global annual greenhouse gas emissions (Gerber et al. 2013). Other effects of increasing food consumption are health problems, inequality in food consumption, and food waste.

Overconsumption of energy-dense food, together with an increasingly sedentary lifestyle, causes an energy imbalance between calories consumed and calories expended, leading to obesity and overweight. In 2016, 39% of the world population aged 18 years or over were overweight (BMI > 25) and 13% were obese (BMI > 30), respectively, 18% and 7% for children and adolescents (WHO 2020a). In the US, 42.5% of the adult population is considered obese (Hales et al. 2020). Overweight and obesity increase the incidence of heart diseases, strokes, type 2 diabetes, and certain types of cancer, possibly leading to premature death and lead to annual public medical costs in the US of \$150 billion (MacEwan et al. 2014).

Although the probability of dying from overweight is larger than in the case of underweight (WHO 2020a), inequality is another issue related to food overconsumption. In 2008, 18% of the global population consumed 39% of grain and 41% of animal protein (Moomaw et al. 2012). Since food import increases in developed countries drives up global food prices, developing countries are adversely affected by the increasing proportion of income spent on food (HLPE 2011). Hirvonen et al. (2020) estimated that 1.58 billion people cannot afford the EAT-Lancet reference diet, which is “a universal reference diet that is healthy for both humans and the planet, minimizing chronic disease risks and maximizing human wellbeing” (p. e59).

Although estimates differ, food losses and food waste in both the food chain and within the household amount to 1/3–1/2 of total food consumption (Stenmarck et al. 2016; FAO 2011). In North America and Oceania, 42% of food is lost or wasted, whereas in North-Africa, non-industrialized Asia, and Latin America, the percentage is less than 20 (World Resources Institute 2019). Also, in North America, industrialized Asia and Europe, over 45% of food waste and loss is caused by consumers, whereas in the rest of the world this percentage is lower than 35. Clearly, in richer countries more food is wasted, especially by consumers.

In the literature, much attention has been paid to health problems due to food overconsumption (e.g., Newton et al. 2017; Poorolajal et al. 2020; Wansink 2006) but relatively little is known about the consumer's choice of sustainable food. Our aim is to provide an overview of factors associated with both healthy and sustainable food consumption without the ambition to provide a complete literature overview. Despite some overlap, factors in consumer decision-making are likely to differ between healthy and sustainable consumption, which is explained in Sect. 2. Section 3 deals with models of consumer decision-making concerning healthy and sustainable food. Section 4 concludes.

2 COMPARING HEALTHY, ORGANIC, AND SUSTAINABLE FOOD CHOICE

Healthy and sustainable food differ in the type of food, the factors influencing their consumption, and the impact on the environment and consumer health. With respect to type of food, healthy foods include poultry, both fresh and processed fish and seafood, fluid milk and cheese, both fresh and processed fruits and vegetables, nuts, and coffee and tea. Unhealthy foods include other types of meat than poultry, eggs, evaporated milk, butter, margarine, and other fats and oils, ice cream, and other frozen dairy products, wheat flour and rice, sugar and sweeteners (Luo and Huang 2012). Unhealthy food usually is more energy-dense than healthy food (Hagenaars et al. 2017).

Almost all healthy and unhealthy foods exist in both organic and nonorganic varieties. Organic has been defined as food produced without use of biocides or chemical fertilizers, without cutting animals' horns, nails, or bills, providing animals with more space to move around in (Bunte et al. 2010), and not genetically modified (USDA 2020), and is often indicated by a food label, e.g., USDA Organic in the US, or the EKO-label in the EU. Although organic food production seems to preserve environmental resources better than nonorganic production, hence producing more sustainable food, the yield per area and time often is less than in nonorganic production (Seufert et al. 2012), hence being less sustainable. The balance of these effects still requires more research. In addition to this, food may differ with respect to transportation distance, packaging, and required land use and resources. For example, beef normally requires 10 times as much energy input to produce 1 kcal of protein than chicken, and almost 6 times as much grain

feed to produce 1 kg of animal product (Pimentel and Pimentel 2003), although different ways of organic farming may require less energy or grain inputs (Broom 2019). Another type of sustainable food consumption is avoiding food waste, which may result from lack of meal planning, impulsive grocery shopping, inadequate food storage, cooking too much, and throwing away leftovers (Van Geffen et al. 2020a).

The impact on the environment does not seem to parallel the impact on human health. Some healthy products like fish and cheese may have adverse effects on the environment, whereas some unhealthy products such as wheat flour and rice may not affect the environment so much. Other products, such as beef, are considered both unhealthy and unsustainable types of food. For this reason, motives for healthy or sustainable food may differ also. Similarly, avoiding food waste by eating leftover food may contribute to sustainability but in some cases may be incompatible with healthy food consumption (Van Geffen et al. 2020b).

Either different factors, or the same factors in different ways, may explain healthy and sustainable food choices, partly because healthy food is known better due to information campaigns and public advice on healthy food consumption, and partly because the choices comprise different motives and objectives (see Table 1). The choice of healthy versus unhealthy food appears to be influenced relatively much by visceral factors and emotions, whereas the choice of sustainable versus unsustainable food is influenced more by cognitive considerations based on information than on nutritional factors.

2.1 *Institutions*

Institutions may provide the legal, economic, and social environment for food consumption. International institutions such as the World Health Organization, the UN Food and Agriculture Organization, International Food Policy Research Institute, the International Association for Food Protection, the European Union and local governments, food authorities such as the Food and Drugs Administration in the US and the European Food Safety Authority, consumer unions, and dietary advice bodies, each take their share in issuing laws, regulations and advice in order to arrange for food security, food safety, healthy food consumption, and environmental protection.

IFPRI provides information about optimal production systems at both global and local levels (e.g., Fanzo et al. 2020). WHO and FAO provide

Table 1 Factors in consumer decision-making on healthy and sustainable food and their typical focus

<i>Factors</i>	<i>Healthy food choice</i>	<i>Sustainable food choice</i>
<i>Environmental factors</i>		
Institutions	Food safety	Production quota
Price	Healthy more expensive	Sustainable more expensive
Type of information	Calories	Sustainability
Availability	Abundant	Limited range
Choice architecture		
<i>Personal factors</i>		
Visceral factors	Taste, nutritional value	
Time preference	Pleasure vs health	Resource depletion vs sustainable environment
Attitude		
Norms	Personal/social	Personal/social
Perceived behavioral control		
Values		
Habits		
Emotions	Stress, compulsive behavior	Regret, pride, guilt

information on microbiological and chemical hazards of food, food control systems, new food technologies such as genetic modification and nanotechnology (WHO 2020b). The EU and local governments issue laws and regulations to control and evaluate compliance with EU standards regarding food safety and quality, animal health, animal welfare, animal nutrition, and plant health. Local governments may also control the price mechanism, such as levying lower VAT on basic food items (e.g., all unprocessed food items in the UK) or higher VAT on unhealthy or non-environmentally friendly food (several countries, including the UK and France, are considering a so-called “fat tax”). Dietary guidelines are issued by local authorities, such as USDA (2015) and EU (n.d.).

Although laws, regulations, and advice provide the context for food consumption, by no means they fully determine what people eat. People’s dietary decisions may further depend on prices, food availability, personal factors, and choice architecture, to be considered next.

2.2 *Price*

One of the main factors studied in economic decision-making is price. The own price of a good generally is assumed to have a negative effect on consumption quantity. The price of another good can have a positive effect on consumption if the other good is a substitute, a negative effect if the other good is a complement, or no effect at all. These effects usually are estimated by own-price and cross-price elasticities indicating by what percentage consumption changes by a percentage change in price. In particular, here we are interested in price elasticities with respect to healthy versus unhealthy food, and sustainable versus unsustainable food.

Zheng and Zhen (2008) found negative own-price elasticities for both unhealthy and healthy food in the US (-0.53 and -0.34 resp.) and Japan (-1.01 and -1.29 resp.), indicating that both types of goods were consumed less if price increased. However, cross-price elasticities were not significantly different from zero, indicating that unhealthy and healthy food were not substitutes of each other. Similar results were obtained in Luo and Huang (2012) for the US. However, Andreyeva et al. (2010) in their meta-study report positive consumption quantity changes of low-fat milk (cross-price elasticities ranging from 0.06 to 0.5) and skim milk (cross-price elasticities ranging from 0.01 to 0.29) with price increases of whole milk. Cornelsen et al. (2015) studied price elasticities of different types of food, including fruit and vegetables, meat, fish, dairy, cereals, fats and oils, and sweets, for countries with low, middle, and high incomes. They find generally negative own-price elasticities higher than -1 , and varying cross-price elasticities across countries with different incomes. For both low-income and high-income countries cross-price elasticities between sweets and cereals (high caloric density), and other types of food, were positive in general, but less so for middle-income countries. This result suggests that in some countries unhealthy food is substituted for healthy food in case of an unhealthy food price increase but not in other countries. Although price may affect the consumption of healthy and unhealthy food, Powell and Shaloupka (2009) found little effect of price on overweight and obesity in their meta-analysis, although in some case the effects were larger for low socioeconomic status and overweight populations.

Regarding the consumption of organic and conventional food, organic fruit consumption in the US is still low and ranges between 2.8 and 12.1% (Lin et al. 2009). Negative own-price elasticities were found for organic

apples, bananas, and grapes, and for all conventional types of fruit. More positive cross-price elasticities were found between organic and conventional fruit than between conventional and organic fruits, suggesting that consumers are more likely to substitute organic fruits for conventional fruits with a price increase in organic fruits than vice versa with a price increase of organic fruits. Bakhtavoryan et al. (2019) find negative own-price elasticities for both organic and conventional flour in the US. In addition, they find a large positive cross-price elasticity between conventional and organic flour and a small negative cross-price elasticity between organic and conventional flour. This result is consistent with the findings of Lin et al. (2009).

2.3 *Information*

Consumer information about healthy and sustainable food centers around dietary guidelines and food labeling. Dietary guidelines may be issued by governments, NGOs, or private institutions. Guidelines may focus on limiting calorie intake, limiting consumption of nutrient-dense food, and increasing food intake variety (USDA 2015), which may be adapted to the local culture, production, and accessibility of food (FAO, n.d.; European Commission, n.d.). A relatively recent development is adding environmental aspects to the dietary guidelines in order to promote sustainable food intake, for example, by recommending eating local and seasonal foods (IOM 2014). The Health Council of the Netherlands (2011) recommended a less-animal based and more plant-based diet which serves to reduce both the risk of cardiovascular disease and environmental impact. Another recommendation is reduced energy intake for overweight people, aimed at reducing both the risk of diabetes, cardiovascular disease, and certain forms of cancer, and the demand for food, thus lowering production and ecological impact.

Food labeling usually takes the form of nutrient declarations on the food packaging. The EU has extensive regulation regarding the contents of the labeling (Purnhagen and Schebesta 2019), including, among other issues, the name of the food, the list of ingredients and their quantities, allergens, quantity, date, storage and use conditions, and nutrition declaration. The regulation is based on a philosophy of “permit but inform,” which is supposedly easier to implement than regulating the contents of the food on the markets. However, although consumers usually can read

and understand the labels (Viola et al. 2016), the risk of information overload and bounded rationality of consumers may reduce the motivation to pay due attention to the labels.

In order to reduce the cognitive effort in reading and interpreting labels, “traffic-light labeling,” indicating low (green), medium (yellow), and high (red) content of unhealthy ingredients (fat, salt, sugar) by colors, has been used (Sacks et al. 2011). Traffic-light labels can be observed at a glance, can easily be interpreted, and lead to 5–14% reductions of unhealthy ingredient intake on average (Emrich et al. 2017), predominantly by avoiding products containing red-marked ingredients. Traffic-light labels have been found equally effective in reducing calorie intake as numeric information in the case of workplace lunch orders (VanEpps et al. 2016).

Healthy food labeling has been supplemented with sustainable food labeling. A variety of sustainability labels exist, including labels for Fair Trade, Animal Welfare, Rainforest Alliance, Carbon Footprint, and the EU EKO-label. Results from a choice experiment shows that consumers tend to choose organic or green-labeled rice more often than rice without such label (Liu et al. 2017). However, field data on the effect of sustainable food labels is still lacking.

2.4 *Availability*

The recommended number of calories needed per day to keep a healthy weight equals 1600–2400 for women, and 2000–3000 for men (USDA 2015). As noticed above, to a large part of the world population this quantity is not available, for various reasons, including droughts, floods, plagues, wars, and inefficient agricultural techniques. A simple measure of food insecurity, based on self-reports, is the household food insecurity access scale (Swindale and Bilinsky 2006; Coates et al. 2007). This scale assesses feelings of uncertainty or anxiety about the food situation, perceived quantity and quality of food, reductions in food intake and their consequences, and feelings of shame over socially unacceptable means to obtain food, in the past few weeks (cf. Namayengo et al. 2018). In addition to calories, a number of different nutrients should be included in a healthy diet, which may be assessed by the household diet diversity score measuring the number of food groups consumed in the past 24 hours (Swindale and Bilinsky 2006). Insufficient nutrient intake may occur for a variety of reasons.

Even in a relatively rich country like the US the availability of healthy food in stores and supermarkets differs substantially across areas with subsequent impact on dietary pattern scores of the residents in those areas. Dietary patterns of unhealthy foods such as fat and processed meats are more prevalent and patterns of healthy food consumption such as whole grains and fruit are less prevalent in areas with relatively many black people, lower incomes and lower education, and among males rather than females (Franco et al. 2009). Walker et al. (2010) show that inner-city areas usually contain less supermarkets where healthy food is available and more small stores where healthy food is unavailable (so-called food deserts). At the same time, food deserts tend to be populated with people with lower income, and black people.

Even when healthy food is available in supermarkets, the price of healthy food may be much higher than the price of unhealthy food (69% higher on average in rural South Africa), leading to relatively high proportions of the household budget spent on food (Temple et al. 2011; Wong et al. 2011). A special kind of food availability is farmers' food reserve after harvest which has been found to be consumed in too large quantities at the expense of other kinds of food (Huang et al. 2020a). By selling more of their own produce, the farmers might have had means available to buy greater food variety than from their own produce.

2.5 *Personal Factors*

Several personal factors may influence people's food consumption decisions, including visceral factors, impulsivity, compulsivity, and time preference, as one cluster of interrelated motivations for eating behaviors.

2.5.1 *Visceral Factors*

Visceral factors include biological states of an organism, such as hunger, thirst, and craving, driving certain behaviors while diminishing cognitive control over decision-making with regard to such behaviors. Feelings of hunger may drive individuals to overeating (Loewenstein 1996), and "mouth-watering" may lead to quite specific food desires, such as fresh-baked bread or coffee. Several circumstances may influence visceral states, including proximity and vividness of sensory stimuli, and how recently the drive was satisfied (Loewenstein 1996). Visceral states may induce impulsivity by enhancing the focus on present wants and reducing attention to the future thus, for example, leading to short-sighted tradeoffs between

immediate and delayed food, binge eating and reduced attention for its consequences. Visceral states may also reduce altruistic behavior (Loewenstein 1996), eventually leading to decreased probability of consuming sustainable food to the extent that sustainable food consumption is driven by altruistic motivations toward future generations.

Visceral states may increase the temporal discounting of food items that are tempting—defined as the visceral attraction to and enjoyment of a reward (Tsukuyama and Duckworth 2010). Different temporal discounting for different food items indicates specific time preference for items within a particular domain, different from time preference of items in different domains, i.e., domain specificity. Domain-specific time preferences have been shown in higher discount rates for beer than candy by beer lovers and higher discount rates for candy than beer by candy lovers (Tsukuyama and Duckworth 2010). Van Beek et al. (2013) adapted the Consideration of Future Consequences scale (CFC)—a verbal type of time orientation scale (Strathman et al. 1994; Petrocelli 2003)—separately for both eating and exercising behaviors, in accordance with the idea of domain specificity. They found that the CFC for eating predicted healthy eating behavior but not exercising, whereas the CFC for exercising predicted both healthy eating and exercising behavior, thus showing partial domain-specific time orientation.

2.5.2 *Theory of Planned Behavior*

To the extent that visceral drives are satisfied by consumption, they may also be related to attitudes toward specific food items. Although attitudes have been defined in different ways (Antonides 1989), the Theory of Planned Behavior (TPB) (Ajzen 2005; Fischbein and Ajzen 1975) has adopted a two-component specification, earlier developed by Rosenberg (1956). Attitude has been specified as a function of expectations that relevant object attributes contribute to certain outcomes, multiplied by evaluations of the relevant outcomes. For example, the expectation that vitamins (as food attributes) in a vegetable (the object) contribute to one's health (an outcome of food consumption), multiplied by how favorable one's health is evaluated, contributes to the attitude toward that vegetable. The expectation–evaluation products are then summed over all relevant attributes of the object to result in the total attitude toward the object. Attitudes are expected to be positively related to the intention to act with respect to the object, e.g., the intention to consume a vegetable. The ability of food consumption to satisfy visceral drives contributes to

the evaluation components of attitudes toward food items, although this mechanism is yet little understood. In addition, many other factors may shape expectations and evaluations, including product information and personal values.

Other concepts in the TPB include injunctive norms, considered below, and perceived behavioral control, reflecting one's perception of the ability or easiness to perform the behavior (Ajzen 2005). Social and personal norms are important factors driving both healthy and sustainable food consumption. Social norms comprise both descriptive norms—perceptions of the quantity and frequency of other people's behaviors—and injunctive norms—perceptions of what behaviors relevant other people find acceptable or desirable (Cialdini et al. 1990; Onwezen et al. 2013a). In general, descriptive norms appear to influence behavior more than injunctive norms (Melnyk et al. 2010). Personal norms reflect feelings of moral obligation to perform or refrain from specific actions (Schwartz 1977; Steg and De Groot 2010; Onwezen et al. 2013b).

Personal norms have been found to be positively related to consumption of fruit and vegetables (Wang and Worsley 2014; Onwezen et al. 2013b), indicating its impact on healthy food consumption. Also, personal norms have been positively related to the consumption of organic food (Koklic et al. 2019; Onwezen et al. 2013b), indicating its impact on sustainable consumption.

Injunctive social norms have been found to be positively related to intentions to consume dairy products, usually considered to be an organic type of consumption (Vermeir and Verbeke 2006). Onwezen et al. (2013a) showed that both descriptive and injunctive norms were positively related to both organic food and fairtrade food consumption, with descriptive norms having stronger effects than injunctive norms.

All three concepts of the TPB have been found to contribute positively to intentions to consume healthy or sustainable food (see, e.g., Aertsens et al. 2009; Onwezen et al. 2013b; Huang et al. 2020b; Dowd and Burke 2013).

2.5.3 *Values*

Values have been defined as desirable transsituational goals, serving as guiding principles in the life of a person (Schwartz 1994), and are considered as relatively stable and independent from different types of consumption. Schwartz's value system comprises ten different domains, which have

been culturally validated across the world (Schwartz 1994), including self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, benevolence, and universalism. Several values have been shown to be related to healthy or sustainable food consumption, either or not via the concept of attitude. Lee et al. (2014) show that values of self-direction, hedonism, security, and benevolence are related to the consumption of healthy drinks (e.g., yoghurt drinks, fruit and vegetable juices, and teas) because of their associations with choosing one's own goals, pleasure and enjoyment, not getting sick, and benefits to the family, respectively. Thøgersen and Olander (2002) show that people's reported importance of universalism—understanding, appreciation, tolerance, and protection for the welfare of all people and for nature—is positively related to their reported consumption of sustainable goods, including several food items. Aertsens et al. (2009) summarize evidence of relationships of all Schwarz's values (except achievement and tradition) with organic food consumption. Shin et al. (2017) show how biospheric values—defined as judgments of phenomena on the basis of costs or benefits to ecosystems or the biosphere (Stern and Dietz 1994; Stern et al. 1998)—influence consumer choice of paying more for an organic menu at a restaurant via pro-environmental attitudes.

2.5.4 *Emotions*

Another personal factor influencing eating behavior comprises emotions (Canetti et al. 2002). It has been found that feelings of boredom, depression, and fatigue are associated with higher food consumption, whereas fear, tension, and pain are associated with lower food intake (Mehrabian 1980). Macht (1999) found an increase in impulsive eating during anger, and an increase in hedonic eating during joy. Lyman (1982) found higher healthy food consumption during positive emotions and higher junk food consumption during negative emotions. With respect to organic food consumption, Verhoef (2005) found that fear tended to stimulate it, possibly because fear may be driven by uncertainty, and health risk (Aertsens et al. 2009). Onwezen et al. (2013a, 2013b) showed that anticipated pride and guilt were positively related to both organic and fairtrade food consumption. Van Geffen et al. (2020b) show that food waste is negatively related to feelings of guilt.

2.5.5 *Habits*

Since habitual behavior is less well-explained by the TPB (Bagozzi 1981), habits have been added to this model. In Verbeke and Vackier (2005), habit was positively related to eating fish; Huang et al. (2020b) found positive effects of habit on consumption of eggs, dairy, fish, and fruit; Russell et al. (2017) found a strong positive effect of habit on food waste behavior. Habits are difficult to change. Opportunities for change often occur with important life events, such as family composition changes, and house or job moves (Verplanken and Roy 2015).

2.6 *Choice Architecture*

One way to influence people choices is to structure the choice environment in a particular way: “A choice architect has the responsibility for organizing the context in which people make decisions” (Thaler et al. 2013, p. 428). Typically, choices can be made using two different systems of thinking (Kahneman 2011). Type I thinking uses one’s intuition and gut feelings, which is fast because deliberation is omitted. It is also often the default type of making choices. Type II thinking is deliberative, using reasoning and weighing positive and negative aspects of decision outcomes. It often comes into play if System I type of thinking shows failures. Since consumers typically do not want to take the effort or time to use System II, they usually resort to System I type of thinking. Most neoclassical economic models as well as the TPB (see above) are based on System II type of thinking since they assume the efficient use of information and deliberation (Antonides 2008). In order to simplify choice, choice architects tend to influence choices by playing on System I type of thinking which includes several choice heuristics, the use of defaults, asymmetry of positive and negative information, and subjective discounting of the future, among many other phenomena.

With regard to healthy and sustainable food choices, choice architecture has been suggested in public policy and marketing as a way of influencing people’s choices (Antonides 2011; Sunstein 2014; Just 2011). Contrast effects—presenting a product in the presence of an inferior alternative—and compromise effects—presenting a product in between products with extreme attributes (e.g., very expensive and very cheap products)—are known to influence people’s choices (Simonson 1999). A very powerful aspect of choice architecture is presenting a default choice alternative. Just and Price (2013) showed that offering fruits and

vegetables during elementary-school children's lunches led to 8% more consumption of these items. Van Dam and De Jonge (2015) showed that negative labeling of another food item led to higher preference for sustainable food than positive labeling of the sustainable food itself, thus pointing to the asymmetry in the effects of positive and negative information.

The increasing fraction of obesity in society shows that people eat too much unhealthy food, meanwhile disregarding the future consequences of such behavior, indicating high impatience for eating. One change in the choice environment that seems to help people to overcome such behavior is commitment to more healthy behavior. Coupe et al. (2019) show that a verbal or written commitment to stick to healthy behavior, witnessed by another person, on average results in more additional weight loss than in weight loss programs without such commitment, both in the short run and over longer time periods. The website *Stickk.com* serves as a tool to make such commitments for a variety of behaviors.

Thaler and Sunstein (2008) and Sunstein (2014) advise to simplify information for consumers in order to help them to make better choices. In this respect, labeling healthy or sustainable food should be quite effective in stimulating consumption of these types of food. Furthermore, warnings, reminders, eliciting implementation intentions (e.g., "do you plan to eat more sustainably?"), and informing people of the nature and consequences of their own past food choices (Sunstein 2014; Tomer 2018).

Some types of choice architecture work against making healthy choices. One such factor is distraction, shown in Shiv and Fedorikhin (1999). Consumers were offered a choice between a healthy fruit salad and unhealthy chocolate cake. Those who were distracted by having to repeat a 7-digit number more often chose the chocolate cake than those were not distracted by having to repeat a 2-digit number, who chose the fruit salad more often. The experiment shows that hampering System II type of choices may lead to unhealthy food choices. An interesting extension of this research is related to preparing a shopping list before buying groceries at the store. Contrary to intuition—suggesting that preparing a shopping list would result in less impulse buying—making a shopping list appears to result in more unhealthy food choices (Rottenstreich et al. 2007). The mechanism behind this finding is that a shopping list is a memory-based choice which tends to deplete one's cognitive capacity, thus hampering the operation of System II and leading to relatively many

choices of chocolate cake and cheesecake. In contrast, shopping in the store is stimulus-based requiring less cognitive resources, thus leading to less unhealthy food choices.

Although choices based on System I type of thinking may not be optimal, in a number of cases they seem to increase people's well-being more than choices based on System II type of thinking (see Antonides and Van Klaveren 2018).

An interesting question is what type of choice architecture is most effective in changing people's behavior with respect to healthy food choices. Cadario and Chandon (2020) aim at answering this question in their meta-analysis of field studies. They distinguish between cognitive effects, such as calorie counts or nutrient information, traffic-light labeling, and prominent placement of healthy options at eye level in the store or on the menu of a restaurant; affective effects, such as vivid descriptions of healthy food, and healthy eating appeals (e.g., "make a fresh choice"); and behaviorally oriented effects, such as default options for healthy food, and size enhancements (either increasing the amount of healthy food or reducing the amount of unhealthy food in the food options). The effect sizes (d) indicate that cognitive factors are the least effective ($d = 0.12$ on average); affective factors are moderately effective ($d = 0.24$ on average); and behavioral factors are most effective ($d = 0.39$ on average; $d = 0.59$ for size enhancements). A meta-analysis regarding choice architecture for sustainable food is still lacking, to the best of our knowledge.

3 A COMPREHENSIVE MODEL OF FOOD CHOICE

Section 2 shows a relatively large number of factors influencing healthy and sustainable food choices. Very few attempts have been made to integrate these factors in a comprehensive model, although several models deal with such factors in a partial way, notably the economic theory of demand, and the TPB. Other models are Wądołowska et al. (2008) comprising food and package characteristics, advertising, price, and sociodemographic factors, and Shepherd et al. (2005) relating health and environmental attitudes to organic food choice. A few models combine economic, social, and psychological variables in explaining food choice, notably Shepherd (1999) and Tomer (2011, 2013).

Shepherd (1999) distinguishes between food-related, person-related, and economic and social factors. Physical and chemical properties of food

and nutrient content lead to both physiological effects (e.g., appetite) and perceptions of sensory attributes (e.g., taste). Price, availability, brand, and social and cultural variables, together with psychological factors (e.g., personality, mood, beliefs) and perceptions may lead to food attitudes. In turn, food attitudes, together with physiological and psychological factors may influence food choice and food intake.

Tomer (2013) distinguishes external factors, including technological changes, market factors, infrastructure related to both food and exercise, and advice from health practitioners, from internal factors, including social capital, health capital, personal capital, and biological factors in explaining diet and life pattern choices, and habits related to food and exercise. Tomer's social, health, and personal capital factors (2013) include a number of variables, such as genetic inheritance, emotional intelligence, self-control and time preference, lifestyle patterns, and choice architecture.

To structure the determinants of food choice behavior considered in Sect. 2, we employ a well-known distinction from attitude theory in social psychology between cognitive, affective, and behavioral components (Rosenberg and Hovland 1960), which was also applied in Cadario and Chandon (2020) and combine this distinction with the external/internal distinction from Tomer (2013) in explaining healthy and sustainable food choices. Then, we impute our variables from Sect. 2 into the relevant categories that emerge from this combination. Table 2 summarizes the model,

Table 2 Structure of food choice determinants

<i>Factors</i>	<i>External factors</i>	<i>Internal factors</i>
Cognitive	Prices Information Labeling	Norms Values Perceived behavioral control
Affective	Vivid descriptions and appeals	Visceral factors Attitude Emotions Time preference
Behavioral	Institutions Availability Default options Size enhancements	Habits
Behavior	Healthy food choice Sustainable food choice	

showing the categorization of factors into external and internal factors, and cognitive, affective and behavioral factors, affecting both healthy and sustainable behavior.

We noticed that healthy and sustainable food need not be the same, although it is possible that they are the same for some types of food. In general, “there is no unambiguous evidence that organic foods are healthier than conventionally produced foods” (Shepherd et al. 2005, p. 352). However, health benefits appear to be prominent in the consumer’s perception of organic food (Shepherd et al. 2005) especially for those who are strongly or moderately environmentally conscious, but not for the so-called pro-self—who find price, healthiness, and taste relatively important (Verain et al. 2016). Hence, the determinants that directly influence healthy food choice may also indirectly contribute to sustainable food choice.

4 DISCUSSION AND CONCLUSIONS

We have provided a broad but non-exhaustive overview of factors involved in healthy and sustainable food choice and categorized them in a sort of comprehensive model. However, since most research takes into account only a few factors to explain a certain type of food behavior, an overview of all relevant factors in relation to multiple food choices is still lacking. Yet, such a meta-analysis seems highly useful, as Cadario and Chandon (2020) have shown in the area of choice architecture regarding healthy food decision-making. Policy makers and practitioners may benefit from such effort by selecting the most promising factors and by developing interventions aimed at changing them to bring about desired changes in healthy and sustainable consumption. Increasing healthy and sustainable food availability and changing the default of unhealthy/unsustainable into healthy sustainable food may directly impact on behavior, which might be the most effective type of intervention. Also, changing habits, possibly at the time of a life event, may directly affect behavior. An overview of different policy instruments aimed at health aspects, organic food, emissions, and food waste is provided in Reisch et al. (2013), including reducing meat, increasing the share of organic and vegetarian food in public cafeterias, and increasing the range of regional food in retail markets, among others. Furthermore, segmentation of the population in terms of light, medium, and heavy users of healthy and sustainable food,

and characteristics of these segments may be useful in order to aim interventions at segments effectively (Verain et al. 2016, 2017). Aertsens et al. (2009) suggest that light and medium user segments have the highest potential of market growth.

Often, the influence of several factors on food behavior is studied, enabling to gauge the size of their effects separately. What is still lacking are studies of factor combinations, e.g., cognitive, affective, or behavioral factors in combination, or internal and external factors in combination. The interaction of factors may be even more powerful than the sum of individual factors (cf. Tomer 2018; Wilkes et al. 2016). Governments and NGOs could develop interventions aimed at several factors together and experiment with different combinations, aimed at segments or parts of the population rather than population wide. Furthermore, monitoring changes in factors, and changes in impact on healthy and sustainable behavior is essential for making progress in the development of interventions (Steg and Vlek 2009).

An implication of the relatively low cross-price elasticities reported in Sect. 2 is that substitution effects have only small effects on both healthy and sustainable food consumption. Government interventions could be aimed more at showing people healthy and sustainable alternatives to unhealthy and unsustainable consumption, rather than focusing on one type of food at a time.

A systematic study of multiple food consumption behaviors is preferred to studies of single food consumption behavior. The latter type of studies tends to neglect alternative choice options, associated with substitution effects. For example, making healthy or sustainable food choices with respect to one type of food may lead to negative spillovers to consumption of other, unhealthy or unsustainable, types of food (cf. Thøgersen 1999), due to moral licensing, i.e., feeling free to act immorally after an initial moral act (Adriaanse and Prinsen 2017). Spillover behaviors and moral licensing have implications for the portfolio of food choices rather than for behavior regarding a single food item.

A problem with the definition of what is healthy and sustainable food remains, despite several definitions provided by governmental bodies and NGOs. Also, such definitions tend to change over time (e.g., milk was considered healthy for a long time which now has been reconsidered because of its relatively high fraction of saturated fat content). Furthermore, the ecological footprint of organic food is often unknown, which

makes it difficult for consumers to decide what to buy. In addition, health and sustainability aspects may be incompatible in certain types of food.

Although we have provided a broad overview of factors influencing healthy and sustainable food behaviors, the most promising factors for policy making are those which directly impact on behavior. These factors comprise laws and regulations provided by institutions, the availability of healthy and sustainable food, the strategic use of default options and size enhancements, and habit changes.

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Obesity, Wellbeing, Freedom of Choice, and Institutional Change

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1 INTRODUCTION

At its heart, this chapter addresses the issue of obesity (Rosin 2008) and, relatedly, healthy living and wellbeing through the prism of a behaviouralist modelling. But we go further and join this up with price theory, the notion of consumer sovereignty, consumer choice, and rational behaviour. We also offer a critical discussion of the role nudging and other alternative policies may play in addressing the health and wellbeing challenges that can arise when people eat “unhealthy” food or “overconsume.” It follows from important points John Tomer raised his narrative on rationality and choice behaviour and the role corporate policy and education play in affecting the choices which may contribute

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to obesity. We also then critically assess the ethics underlying any nudge-based policy adopted to address obesity-related issues (Tomer 2001, 2011, 2013, 2017a, b). We raise ethical concerns about nudging individuals into engaging in certain behaviours recommended by experts as opposed to providing individuals with the means to realize their own self-defined definition of wellbeing when the latter is not harmful to others.

John presents, in non-mathematical form, a multi-factor theoretical analysis of the causes of obesity. But in his modelling, relative price and income are only two variables or factors that determine individual choice behaviour. As well, his model is heavily interfaced with the role an expert has in defining what the ideal level of wellbeing and healthy living is, and in determining how individuals should achieve this particular expert-defined level of wellbeing and healthy living.

John Tomer (2011, 2013, 2017b) is highly critical of individual free choice behaviour which, he argues, leads to the consumption of too much food, especially too much “unhealthy” food as exemplified in the consumption of fast food like the ever popular, very sweet and yummy (for many people) Cinnabons.¹ This apparently utility maximizing choice by consumers is, according to Tomer, an irrational choice, since it is not conducive to healthy living which, for Tomer, should include having and maintaining a non-obese body. A rational consumer should have a very specific set of preferences which ultimately would result in all consumers (once one aggregates across all consumer preferences) making good choices so that obesity should not be the serious problem that Tomer argues it is. And, such choices, he argues, should be the rational consumer’s one true and objective utility maximizing choice.

Related to the hypothesis (and claim) that consumers typically make bad or sub-optimal choices with regards to healthy eating, but also with regards to lifestyle, Tomer (2017b) argues that consumer sovereignty is more of a myth than anything else as consumer choice is easily manipulated by large profit maximizing corporations, intent on selling unhealthy food. Here, John is very much consistent with a worldview put forth by Galbraith (1967; also George 2001; see Altman 2005, for a critique),

¹ For those not in the know, Cinnabons is a classic American pastry containing raisins, brown sugar, and smothered with a cream cheese frosting. It is marketed by the American company, Cinnabon Bakery. It contains 880 calories with 36 grams of fat and 59 grams of sugar.

who argued that consumer demand and even preferences can be consistently manipulated to meet the preferences of corporate leaders very much oriented to selling particular products. But, as with Galbraith's, Tomer's argument must be qualified by the impact of education on decision-making.

Tomer's fundamental argument is that humans tend to consume unhealthy food because they like such food (it's utility maximizing). In a sense, humans are hardwired to do so. Hence, for individuals to be healthier, less obese, have a longer life expectancy, government should intervene to regulate and limit the consumption of unhealthy foodstuffs such as Cinnabons. This argument sits well with the nudging narrative in behavioural economics as developed by Thaler and Sunstein (2008).

In this chapter we model the possible trade-offs between being or becoming healthy (with a focus on obesity) in terms of consumption behaviour (one measure of wellbeing), and what one consumes, and the determinants of consumption, going beyond, but still incorporating traditional price and income variables. We also examine how available options for exercise and healthy food impact on the state of an individuals' health, conditional upon their consumption behaviour. We also examine how education can impact an individual's health with regards to their consumption choices. This relates to Tomer's (2017a) emphasis on Buddhism as a possible solution to overeating and the consumption of unhealthy food. But, more significantly, the importance of education also speaks to the role of misleading information on food content and physical activity in affecting consumer choice in the real world of bounded rationality. We also critically address important ethical issues John raised in his modelling of consumer choice behaviour and his related policy prescriptions wherein relatively free choice (which he regards to be largely a myth) is to be constrained by government policy where experts would nudge individuals to make choices desired by these experts to deliver outcomes which they define as being optimal. These experts are referred to in the literature as choice architects (Thaler and Sunstein 2008).

Thus we build on Tomer's multi-factor approach to the contributing causes of obesity and relatively unhealthy living. But we pay more attention to the conventional economic model and related variables as important possible causes of obesity. We also contextualize behaviour predicted by this model by the different constraints faced by different income cohorts. We also retain the conventional economics default assumption of rational decision-makers or consumers; but these are the rational agents

embedded in the real world of bounded rationality (Simon 1987a, b). These individuals are expected to behave differently from the narrowly unboundedly rational agents of conventional neoclassical theory. This opens the door then to better understanding how rational individuals can make sub-optimal choices given a poor decision-making environment, which can also differ across income cohorts. This includes the different facilities available to individuals, depending on income cohort, to make and implement better lifestyle choices. Finally, we argue that if freedom of choice is an important component of the good life, contributing to an individual's level of wellbeing, then seriously constraining this freedom, even if this is what the experts argue must be done, will reduce an individual's level of wellbeing (Altman 2011; Sen 2000). Rather, for wellbeing to be maximized, this requires providing individuals with decision-making capabilities and an environment such that each individual can achieve her or his version of the good life, even if this yields outcomes that the expert might deem to be suboptimal.

2 TOMER'S PERSPECTIVE ON OBESITY, HEALTH LIVING, AND THE GOODLIFE

We should begin by defining obesity. Simply, obesity is a medical condition where an individual has an extremely unhealthy amount of body fat for her or his height. This is usually determined by one's body mass index or BMI. The BMI is calculated as $BMI = \text{kg}/\text{h}^2$ or, a person's weight in kilogrammes divided by the person height squared (h^2). A BMI ranging over 25 is considered to be overweight, whilst a BMI ranging over 30 is obese. For example, a 50-year-old male who is 6 feet tall or 182 centimetres and 100 kilogrammes or 220 pounds is just crossing the benchmark dividing the medically overweight from the medically obese. It should be noted that these BMI cut-offs may vary slightly for different racial/ethnic groups (Weir and Jan 2021).

Tomer's perspective of the causes of obesity and healthy living are largely contained in a series of articles (Tomer 2011, 2013, 2017a, b). But the basics of his thinking on these issues are clearly articulated in his *Challenge* contribution (Tomer 2011). John specifically highlights the direction of causality with regards to obesity and unhealthy living as going from poor individual choice behaviour to obesity and relatively unhealthy living. He argues that these decisions are made by irrational individuals (Tomer 2011, p. 33) whose individual preferences are also manipulated by

large food processing and distribution corporations. Tomer writes (2011, p. 23):

In general, obesity in the present model is the result of individual decisions to choose poor diets and poor life-behavior patterns (including exercise). Unlike in the rational obesity model, these are not decisions of rational economic men or women... The rising obesity levels are the result of poor decisions by many not-so-rational individuals who have encountered significant changes in food-supplying industries and society overall.

But John attributes a part of the bad choices individuals make to poor or misleading information sets available to them. Hence, individual's choices are affected by their boundedly rational decision-making environment. Tomer (2011, p. 29) argues: "Unlike in the rational obesity model, the individual's decision-making exhibits bounded rationality because the individual's knowledge and ability to process information is quite limited, and the health reality is complex." So, in a sense, this boils down to bad decisions being a function of bad information and the fact that the individuals don't have the ability to properly process good information when it is available. But, then again, John emphasizes these bad decisions are also closely related to consumers' choices being manipulated by large food processing and distribution corporations (Tomer 2011, p. 33). Tomer (2011, p. 37) elaborates:

The essence of the argument is that obesity tends to occur when vulnerable individuals who have low personal capital, low social capital, low health capital, and genes predisposing them to obesity encounter stressful situations, lower prices of unhealthy food and higher prices of exercise, poor advice from health practitioners, and the large and growing infrastructure of obesity.

This being said, it is important to understand what John means by personal, health, and social capital, since these play a vital role in his modelling of choice behaviour.

On personal capital Tomer (2011, p. 38) writes: "A person's stock of personal capital is partly a product of one's genetic inheritance, partly a result of the life-shaping events that one has encountered, and partly an outcome of one's efforts to mature and to grow in non-intellectual ways." This includes emotional competencies, the capacity

for self-control, and the ability to delay self-gratification. The accumulated personal capital stock determines an individuals' ability to resist the aggressive marketing of the food and beverage conglomerates in favour of the consumption of unhealthy goods and to resist increasingly less expensive unhealthy foods. Low personal capital individuals invest (consumption capital) in eating immediately gratifying foods (high in sugar and fast foods) and are conditioned through such investment to come back for more of the same unhealthy foods; they develop "attitudes, behaviors, and habits encouraged by the food suppliers" (Tomer 2011, p. 39). They become emotionally attached hyper-eaters. One problem with this approach John championed, is that the price of healthy foods has fallen along with the price of unhealthy foods (Roser and Ritchie 2013). So it can't be the relative fall in the price of unhealthy foods, *per se*, that is *the* problem.

Health capital refers to (Tomer 2011, pp. 40–41): "... stock [of capital] consisting of the accumulated individual learning that contributes to his or her physical health and some aspects of mental health. These learned behaviours relate to our eating patterns, exercise activity, use of nutritional supplements, use of medicines, use of potentially toxic substances (alcohol, illicit drugs, and so on), recreational activity, and other lifestyle patterns." Basically, for Tomer, health capital refers to education, formal and informal, as they relate to what constitutes healthy living.

Social capital refers to the bonds between individuals. Positive or strong bonds should reduce the probability of making poor health choices that will result in becoming and remaining obese (Tomer 2011, p. 41). People with weak social capital are less able to resist the push by corporations to sell unhealthy food and more easily succumb to the economic incentives (lower prices and faster, less time intensive meals) to consume unhealthy foods and also, as a separate factor, they tend to do less exercise.

Although personal, health, and social capital are, for Tomer, the critical determinants of unhealthy life choices, genetic factors can predispose an individual towards obesity even if the above three variables are optimized. Therefore, his model applies to individuals who do not have this genetic predisposition. But even given having a genetic predisposition to obesity, an individual will live a healthier life with a higher level of accumulated personal, health, and social capital.

John, once again, points to individual choice behaviour, aided and abetted by key external factors, as the core cause of unhealthy lifestyle

choices leading to obesity. To reiterate the importance that Tomer (2013, p. 97) places on individual choice as a core cause of unhealthy living and obesity, this quote is helpful: “For these things to happen [for people to make healthier choices thereby reducing the extent of obesity] would require an important societal change in values. People would have to value their health and healthful living patterns much more than in the past. Moreover, people would have to no longer accept negative opportunistic behavior on the part of food businesses.” Here, John again makes the point that individuals will have to change their preferences and not buy into the rhetoric of the dominant corporations in the food and beverage sector promoting unhealthy lifestyle choices. In the language of conventional economic theory, what Tomer is arguing for is that individuals should change their preferences towards what he believes (as do some health professionals) are most consistent with healthy living and improved levels of wellbeing. Unfortunately, he despairs that individuals do not tend to value healthy living as much as they should.

Getting down to specifics, Tomer (2011, p. 27) argues that the core causes of obesity that require lifestyle changes can be divided into dietary factors and life behavioural patterns. For such changes to take place, therefore, individuals must be prepared to “maximize” utility in a manner consistent with his understanding of what would constitute a healthy lifestyle. Below are the critical changes needed in John’s assessment of the scientific literature on issues relating to a healthy lifestyle.

The dietary factors that require change are:

1. diet high in refined, processed carbohydrates,
2. diet high in bad fats,
3. diet low in fibre, and
4. diet low in antioxidants and high in oxidants.

The life behavioural patterns that require change are:

1. overly rapid eating,
2. eating in the presence of stress, especially chronic stress,
3. sleep deprivation,
4. lack of exercise, and high exposure to toxins that cause an over-loaded detoxification system.

Appropriate change requires that internal factors, given by an individual's personal, health, and social capital, are sufficient to achieve this change in the face of external factors which are largely embodied in the assumed falling relative price of unhealthy food, and, the lobbying and marketing efforts of the food and beverage industry, what John refers to as the infrastructure of obesity. Obviously, he concludes that internal factors have not been sufficient to more than offset the negative external factors so as to reduce the extent of obesity. Individuals have failed to choose a healthy diet and good behavioural patterns (such as sufficient exercise), thereby contributing to their own unhealthy living, negative issues arising from obesity, and a lower level of wellbeing for themselves and society at large.

Tomer (2011, p. 43) argues that his model predicts accurately that lower-income groups, because they are deficient in personal, health, and social capital, should live less healthy lives and should be relatively more obese or overweight as compared to higher-income cohorts. Therefore, one would expect his model to predict that income per capita should be strongly and positively related to the percentage of a population who are obese. But it is still not clear why being poor should result in lower levels of personal, health, and social capital. This is certainly an assumption that requires further empirical examination. But the evidence does suggest, as we discuss below, that there is convergence of obesity rates at the higher levels of per capita income (real GDP) economies between the lower- and higher-income cohorts in those economies (Templin et al. 2019).

In terms of policy, Tomer pays special attention to changing individuals' food consumption and lifestyle behaviour and who they associate with (they should associate with people who have a healthy lifestyle) (2011, p. 44): "The model clearly indicates that low or poor endowments of personal capital, health capital, and social capital are associated with high rates of obesity. It follows that obesity rates could be lowered if people who are relatively poor in the relevant intangible capital were to make significant efforts (i.e. investments) to raise certain of their intangible capacities." Even if external factors do not change, changes in individual choice behaviour will help improve their level of wellbeing, including the extent of obesity. Hence, significant emphasis is placed on the individual bearing responsibility for her or his own level of obesity. Therefore, one has an implicit focus on what Tomer refers to as personal capital. John also supports policy that will affect external conditions, including making it more costly for individuals to make unhealthy choices even if these are their preferred choices.

We argue below that critical to individuals making “poor” lifestyle choices is costly information imperfections that create barriers to individuals making informed health improving choices (see Akerlof 1970, on the importance of asymmetric information). Other health improving choices are made more difficult because of the decision-making environment (including location) within which decisions are made. These obstacles to welfare improving choices, to facilitate individuals’ realizing their preferred preferences, can be affected by government policy (Altman 2010). But John assumes that an individual’s unhealthy choices actually represent her or his preferred choices, a driving point of focus in his narrative. So his stated preference to constrain individuals’ choices, by nudging them to make improved choices based on “expert” opinion, raises important ethical issues on the value one attaches to individual freedom with respect to consumer choice when the latter does not negatively impact on others.

3 THE NEOCLASSICAL MODEL

In the simple neoclassical model, the relative price of all pertinent variables and real income are the key determinants of choice (Grossman and Mocan 2011; Philipson and Posner 1999). The focus is on what John refers to external factors or variables. It is assumed that there is a typical or representative individual whose behaviour one is modelling. It is further assumed that this person has access to all pertinent information necessary to make a rational decision and that this person has the capability to understand and access this information. It is also assumed that the individual can and does project into the future the consequences of her or his choices today. Finally, it is assumed that the individual’s choices reflect her or his true or preferred preferences (Altman 2010). But the latter need not be the case if her choices are based on misleading or false information (with regards to food and beverages and healthy living advice, for example) and, as well, on externally imposed constraints on decisions (availability of exercise facilities, including safe streets and parks, availability of inexpensive healthy foods, and the availability of time, for example). Given these constraints, the individual attempts to maximize her or his utility or wellbeing. John argues that this point of utility maximization generates unhealthy living and obesity. And one reason for the latter is the consumer’s preference for unhealthy but tasty food and beverages. Tomer points out that for some neoclassical economists one reason

for rational obesity is the relative fall in the price of relatively unhealthy food and beverages and the increase in the price of engaging in exercise.

Tomer (2011, p. 25) concludes his discussion of the neoclassical model:

This model emphasizes that obesity is the outcome of an individual's choices and is thus an avoidable condition. The obese person has evaluated the long-term expected benefits and costs associated with his diet and exercise pattern and has chosen a combination that leads to obesity. If these benefits and costs were to change, it would be expected that the individual would change his diet and exercise pattern accordingly. These expected benefits and costs might change because of changes in external conditions or in the individual's preferences.

John is critical of the neoclassical model because it ignores the micro issues related to healthy living and, relatedly, to the rise in obesity. He is also concerned by its assumption of stable preferences. As discussed above, John Tomer pays special attention to how personal, health, and social capital, all affect preferences and choice and, hence, the level and extent of obesity. Furthermore, he argues that consumers are not rational and when they attempt to maximize their utility they end up not living a healthy lifestyle and, therefore, become obese. For this reason, maximizing utility should not be taken as indicative of maximizing wellbeing since wellbeing should be defined externally by experts as opposed to internally by consumers. Left to their own devices consumers will end up causing harm (obesity) to themselves and to society at large (the cost of addressing obesity and related health issues). Thus consumers end up focusing on the wrong variables when maximizing utility. John Tomer's argument related to healthy living and obesity is a more specific articulation than that forwarded by Thaler and Sunstein (2008) in their nudging narrative.

4 SOME FACTS ABOUT OBESITY

It is useful to place Tomer's arguments about obesity in the context of the available data on the subject. Our analytical graphs below are all derived from the OurWorldinData data bank (drawn mainly from Ritchie 2017). We pulled a sample from the available data for developed economies as well as for China and India which are growing rapidly. From 1975, obesity

rates have increased substantively amongst most developed economies, with the United States leading the pack by a wide margin (Fig. 1). These countries had similar obesity rates in 1975, although the United States was somewhat higher. South Korea and Japan, relatively developed economies in 1975, have also experienced a growth in obesity rates and were at about 5% in 2016, compared to the American rate of over 35%. Developing economies, China and India, have very low but rising obesity rates.

There is obviously considerable variation in obesity rates, the causes of which require considerable more analysis. Below the obesity threshold, is the overweight threshold (over 25 BMIs), which incorporates the obesity rates as well. The overweight rate has also grown substantially from 1975 but here the United States is not an outlier as it is for the obesity rate. As compared to other countries in our sample, whilst there is clearly a greater percentage of America's overweight population that is obese, the overweight rates are growing in all of our sample. In China, Japan, and

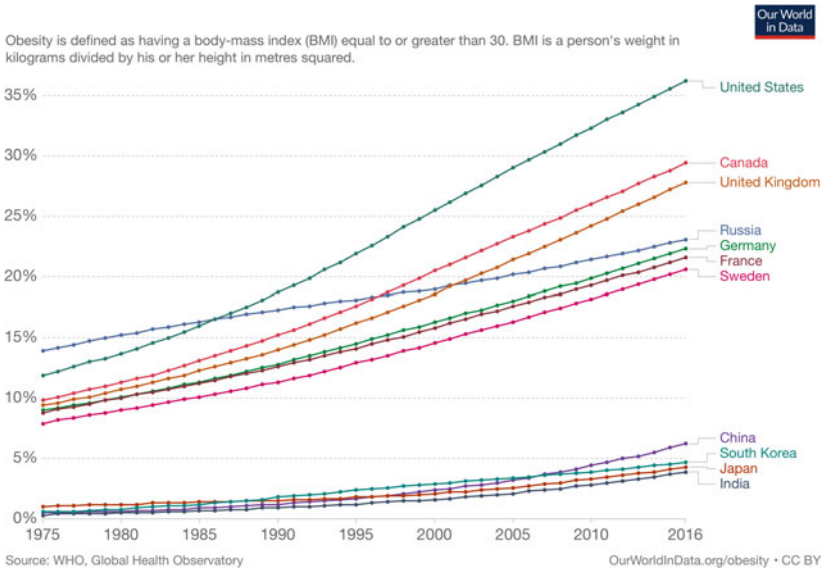


Fig. 1 The share of adults that are obese, 1975 to 2016 (Source: Ritchie, Hannah [2017]. “Obesity”. Published online at OurWorldInData.org. Accessed December 19, 2020, Available at: <https://ourworldindata.org/obesity>)

South Korea, whilst they are still relatively low, they are growing, and India, which is even lower still, also has witnessed some growth in the overweight threshold. Overall, the obese population is still a relatively small percentage of the overweight population (Fig. 2).

On a side note, moderate obesity is found to reduce life expectancy, on average, in the American and European sample, by about 2 years (University of Oxford 2009). However, another study suggests that this average is lower at between 1 and 2 years for the same demographic (Vidra et al. 2009).

Although obesity shortens a person’s life somewhat, one must note that life expectancy at birth has increased quite dramatically even whilst obesity rates have increased. Even from 1975, life expectancy has increased by about ten years amongst the wealthier economies, with the United States lagging behind at eight years. In South Korea life expectancy has increased by 17 years, China by twelve and India by over

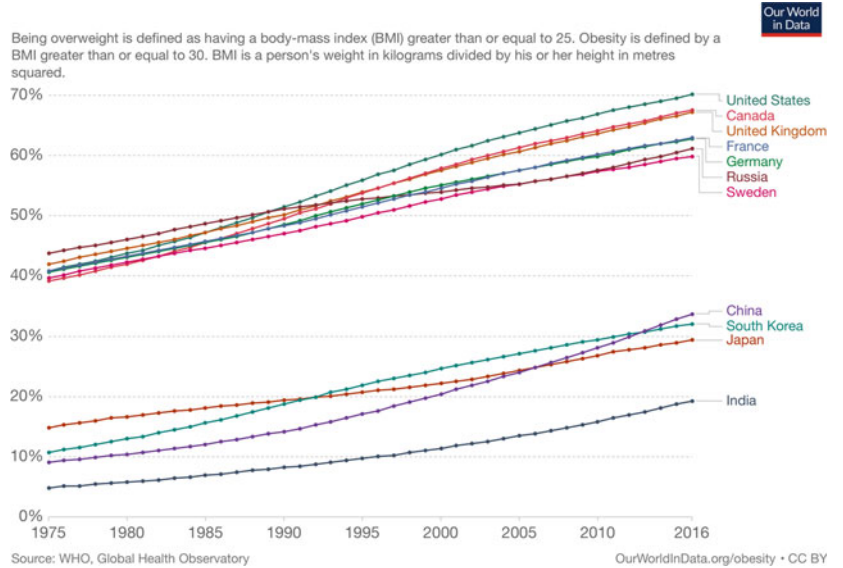


Fig. 2 Share of adults that are overweight or obese, 1975 to 2016 (Source Ritchie, Hannah [2017]. “Obesity”. Published online at OurWorldInData.org. Accessed December 19, 2020, Available at: <https://ourworldindata.org/obesity>)

eighteen years (Fig. 3). Therefore, obesity would simply reduce the extent of the increase in life expectancy by a relatively small amount.

Having said that, the share of deaths attributable to obesity is not trivial, amounting to over 14% in the United States and 12% in Canada. It was closer to 16% in Russia by 2017. It has also increased significantly in rapidly growing less developed economies such as China and India where deaths attributable to obesity have increased to 8 and 6% respectively. But what's important to recognize here is that in the very wealthy United States, where the obesity rate has increased quite significantly, the *percentage* increase of deaths attributable to obesity has been very small. The same is true for other very wealthy economies (Fig. 4). Relatedly, the death rate from obesity has decreased in the wealthy economies. Therefore, there is now less risk of dying from being obese compared to your chances in 1975. However, in China and India, the obesity death rate has increased, catching-up to that of developed economies. But in Japan,

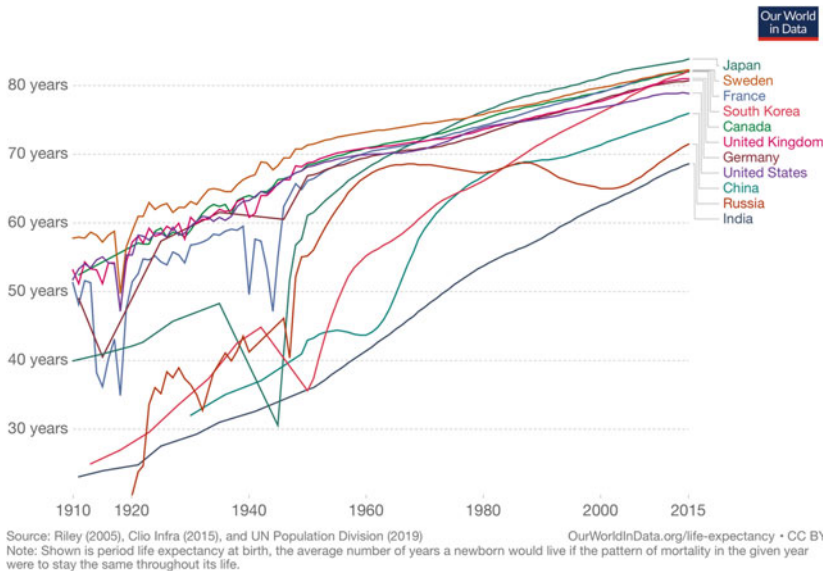


Fig. 3 Life expectancy, 1910 to 2015 (Source Roser, Max, Esteban Ortiz-Ospina and Hannah Ritchie [2013]. “Life Expectancy,” *OurWorldInData.org*. Accessed January 3, 2021, Available at: <https://ourworldindata.org/life-expectancy>)

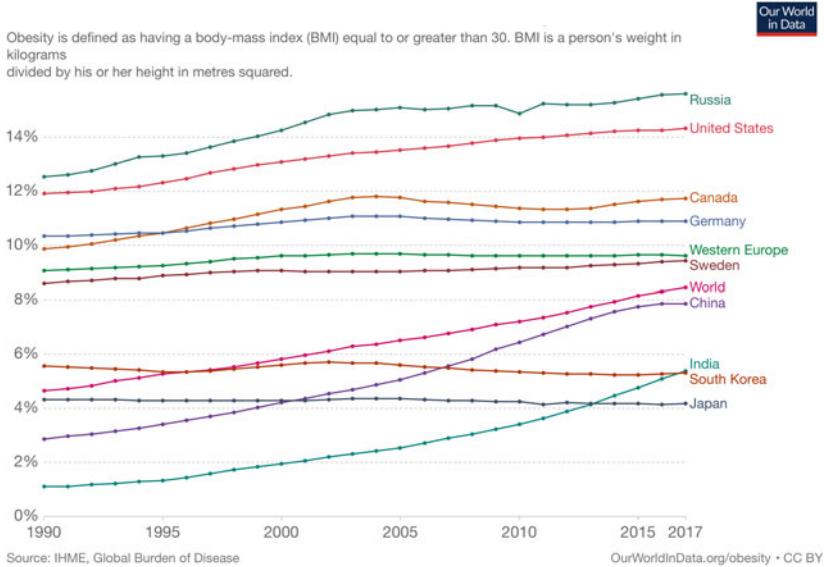


Fig. 4 Share of deaths attributed to obesity, 1990 to 2017 (*Source* Ritchie, Hannah [2017]. “Obesity”. Published online at OurWorldInData.org. Accessed December 19, 2020, Available at: <https://ourworldindata.org/obesity>)

(Senauer and Gemma 2006) obesity death rates have fallen and are now one-quarter of the American and 50% of China’s and India’s (Fig. 5).

To reiterate what appears to be the received view, obesity rates are highly correlated to calorie consumption, which in turn, is related to per capita GDP. In Fig. 6, we illustrate the positive relationship between food expenditure and per capita GDP. From Fig. 7, and we only have data for men, the relationship between overweight rates (which incorporates obesity rates) is closely connected with calorie consumption, with the United States leading the way. Critically important here is that there is a very large variation in overweight rates for every given level of calorie intake. Therefore, consuming more calories does not necessarily mean becoming overweight. This variation, we will argue, has as much to do with the quality of relevant information available to consumers (on foodstuffs and physical activity), and their ability to understand this information when it’s available as well as the availability of resources with

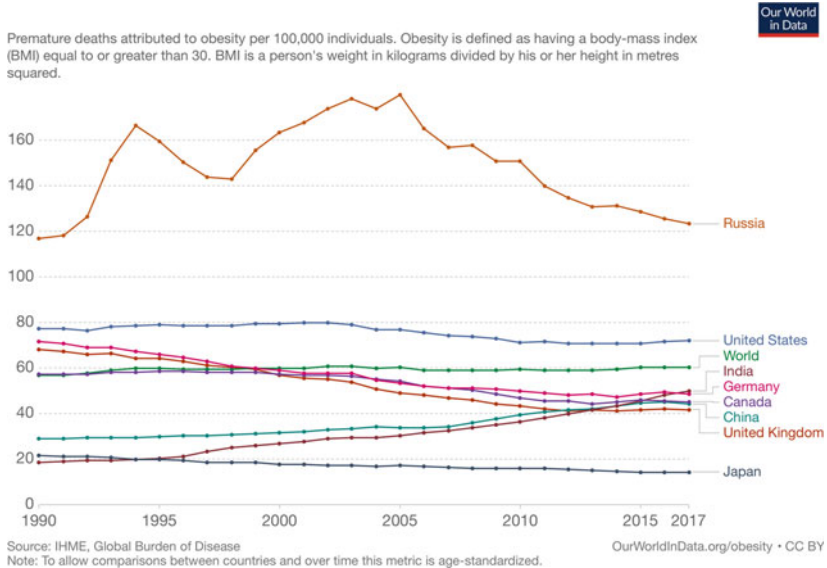


Fig. 5 Death rate from obesity, 1990 to 2017 (*Source* Ritchie, Hannah [2017]. “Obesity”. Published online at OurWorldInData.org. Accessed December 19, 2020, Available at: <https://ourworldindata.org/obesity>)

which to engage in calorie reducing physical activity and to purchase healthy food.

5 A BEHAVIOURALIST ENRICHED NEOCLASSICAL MODEL WITH SMART DECISION-MAKERS

Our approach, like John Tomer’s, is behaviouralist in orientation, but we pay more attention to the impact of relative price and income on choice behaviour which, of course, is central to the neoclassical approach. But we also deconstruct the neoclassical model to highlight how different income cohorts are affected by price and income and in turn also face different price and income constraints. We also make the default assumption that individuals are smart or rational from a bounded rationality perspective. Individuals are assumed to be doing the best they can to maximize their utility or wellbeing given all of the constraints they face, which incorporates how income, information, education (including food

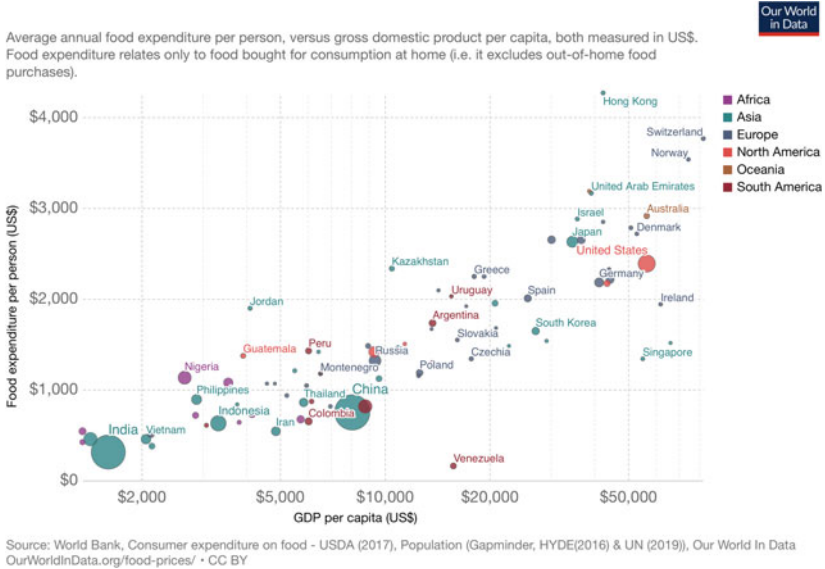


Fig. 6 Annual food expenditure per person vs. GDP per capita, 2015 (*Source* Roser, Max and Hannah Ritchie [2013]. “Food Prices,” OurWorldInData.org. Accessed January 3, 2021, Available at: <https://ourworldindata.org/food-prices>)

and health education), and location, as well as social groups or networks, for example, affect their choices. We examine the extent to which this particular multi-factor model with boundedly rational smart decision-makers can explain obesity, John’s point of focus without reverting to irrationality and sub-optimal preferences as core explanatory variables.

Obesity is a function of overeating, not eating properly, and not engaging in enough exercise or physical activity when measured against calorie consumption (Viuda-Serrano et al. 2011). Our default assumption is that the typical individual across income cohorts, gender, cultural cohorts, etc., prefers not to be obese and, more to point, unhealthy. Although, we do also recognize that for some rational individuals there can be a trade-off between being somewhat overweight and enjoying aspects of living that will result in this person being overweight. A critical question we ask is, if an individual wishes not to be obese, why might this person end up being obese? This is not a question that naturally flows from the conventional economic wisdom, which also assumes rational

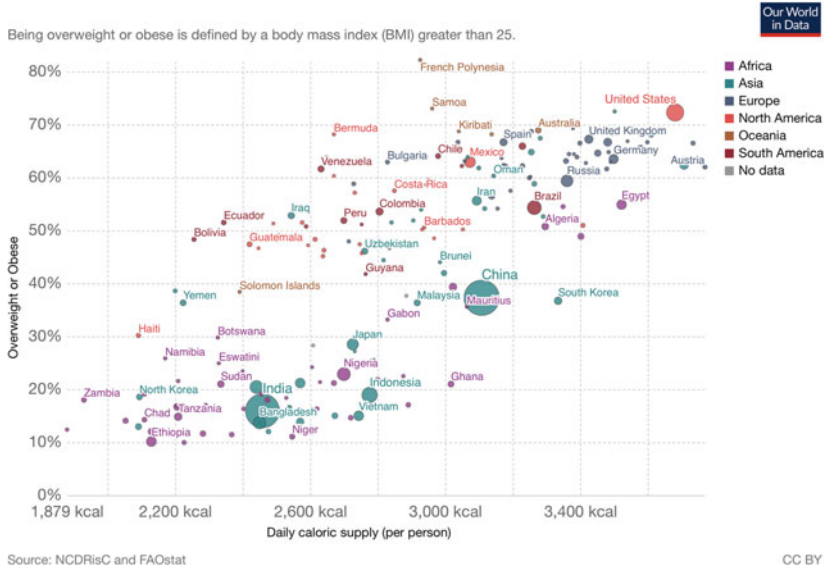


Fig. 7 Share of adult men overweight or obese vs. daily supply of calories, 2013 (*Source* Ritchie, Hannah [2017]. “Obesity”. Published online at OurWorldIn-Data.org. Accessed December 19, 2020, Available at: <https://ourworldindata.org/obesity>)

decision-makers, since it is also assumed that the choices that rational maximizers express are their true or preferred preferences. In other words, why would a person who does not want to be obese express their preferences on the market, through the choices that they make, such that they in fact do become or remain obese?²

With regards to the price effect, Tomer and others assume that the relative price of relatively unhealthy foods has fallen, including the time costs

² It is important to note that Gary Becker, one of the pioneers of neoclassical theory, argues that one flaw in conventional economic theory, because it is overly simplified, is that it ignores the importance of personal and social relationships to the choices we make. He refers to the state of these relationships as accumulated personal and social capital. And these types of capital might have either positive or negative effects on choice behaviour (Becker 1996; see also Altman 2018). Further to this point, identity economics (Akerlof and Kranton 2010), suggests that utility maximisers can make poor or sub-optimal choices when they want to fit in with their social group.

(fast-food restaurants). At a very general level, one would expect that individuals would tend to purchase relatively more of the now cheaper products, through the substitution effect, which controls for any change in real income or purchasing power. John Tomer and other scholars assume, with regards to the obesity issue, that the price effect moves in the same direction as the substitution effect. Therefore, it is assumed that any increased income derived from the relative drop in price will not be used to purchase healthier foods and that this income effect won't overwhelm the substitution effect. Moreover, it assumes that increasing real income over time, controlling for relative price changes, will not be oriented towards the purchase of healthier foods. Both the pure income effective (based on increasing real income) and the income effect related to the fall in the price of unhealthy foods are said to contribute to the increased percentage of the population being obese. But Tomer maintains that it is this bias in favour of unhealthy food, related to the lack of self-control of consumers over sweet foods and their inability to resist corporate promotion of such foods, which is actually responsible for the rise in the rate of obesity. Consumers can choose to consume healthier foods and, thereby, choose to be less obese. Their irrational preferences, *ceteris paribus*, play an important role in explaining the rise of obesity.

A number of important issues related to our default assumption of rational individuals should be raised here. Firstly, there is some evidence that low-income cohorts are increasingly responsible for the rise of obesity, at least amongst developed economies. But upon closer inspection, this is a product of lower-income cohorts catching-up to higher-income cohorts. More specifically, the obesity rate gap between the lower-income cohorts and the upper income cohorts is closing in the United States, the focus of John Tomer's empirical reflections (Hitti 2005). Amongst the lower-income cohorts, there is very limited access to healthy foods, or such food stuffs are highly expensive in their neighbourhoods (denoted as food deserts). In this case, even if individuals preferred healthy foods, such foods are not readily available. Therefore, these individuals can't realize their true preferences for consuming healthier foods. One reason for rising obesity amongst the lower-income cohorts is related to the constraints they face in terms of healthy food availability and price (being priced out of the market). Moreover, many of the poor are cash poor and therefore food poor and will purchase high energy unhealthy food when cash is available. There is nothing irrational here. From this perspective, what is required are changes in the incentive environment to

attract food stores that supply healthier foods at lower price points into low-income cohort areas. Many of the stores in the lower-income cohort areas are smaller higher cost outlets which must charge higher prices to be economically sustainable.

But then there is also an obesity issue and an overweight issue amongst the upper income cohort. One study of 103 countries estimates that a greater percentage of the wealthier population are obese, relative to the bottom income cohorts, at relatively low levels of per capita GDP (\$8,000 in 2017 international dollars), whereas at the higher levels (\$30,000 and above), the percentage of the population who are obese is highest amongst the least well-off members of the population. This reversal of dominance from the most well-off to the least well in terms of being overweight takes place at \$50,000. What's also of interest is that the percentage of the wealthier members of society who are obese increases and then diminishes as GDP per capita increases, to rest at about 12%, what it is at the lowest levels of per capita GDP. One has an inverted U-curve. For the bottom quintile, the per cent of this population that's obese increases to around 14% at the highest level of per capita GDP. It is 3.5% at the lowest level. At the highest level of per capita GDP, the obesity rates across the other income cohorts are around 13% and they all increase from the lowest to the highest levels of per capita GDP economies. In terms of being overweight, the percentage of the population that is overweight is similar at the highest level of per capita GDP economies and this percentage increases within each cohort as per capita incomes increased. But is important to note that in the United States the obesity rate has continued to increase for both the highest and lowest level of income cohorts with, as we mentioned above, with the highest level catching-up with the lowest level and the American rate is well above the average (Templin et al. 2019).

The fact that the obesity rate amongst all income cohorts is increasingly similar, tells us that obesity is not simply a function of food deserts and even the assumed relatively low price of unhealthy foods (we should point out here that the price of both unhealthy and healthy foods have decreased over time [Roser and Ritchie 2013]). The well-to-do can afford to purchase healthier foods even if these are relatively expensive. This certainly points in the direction of some people, an increasing percentage of the population in a large number of countries, consuming more food (more calories) as real income increases. In the United States, it is also clear that this holds true for all income cohorts including the top income

quintile. It appears that increasing real income (the income effect) plays an important role contributing to the increasing obesity rate and the overweight rate globally. And it is quite possible that eating more is the preferred preferences of many people. On the other hand, it is not clear that the preferred preference of these same people is to become increasing unhealthy. As we discuss below, there is a very tight positive relationship between the growth in obesity rates and the rapid growth in the health and fitness industry, which speaks to the demand to be healthy for those who can afford the services provided by this industry.

There has been considerable criticism of fast-food outlet as being causally related to the increase in obesity rates, something that John Tomer also makes reference to. Basically, the narrative is relatively inexpensive calories result in more calorie consumption resulting in higher obesity rates. But the evidence suggests that fast foods are not very much cheaper than healthier foods. Also, fast-food restaurants are not frequented that often. Although fast-food chains are blamed for the high obesity rates of the poor, the poor don't patronize fast-food outlets much more than individuals in higher-income cohorts do. The differential obesity rate between low-income and higher-income cohorts can't, therefore, be easily accounted for by the differential consumption of fast-food outlet products by low and higher-income cohorts. And, as we mentioned above, consuming fast-food calories is not the cause of obesity, it is consuming too many calories, *ceteris paribus*. Zagorsky and Smith (2017) find that fast-food consumption is similar across income and wealth cohorts. And middle-income individuals consume more fast-food meals than poorer individuals. They also find that banning fast-food outlets in low-income areas (based on the advice of experts) does not reduce fast-food consumption. Evidence actually suggests that, ironically, such bans have the effect of increasing fast-food consumption. Also, fast-food outlets are a low time cost convenience for working parents, especially for single parent households. Making it more difficult for low income, time poor, families to take advantage of this convenience could very well lower the wellbeing of lower-income working families. Moreover, the consumption of fast foods reduces the non-market time parents must work per day. This releases more time to time poor parents for non-market work activities such as child care, food and beverage shopping and preparation. Rational individuals would tend to choose to consume more fast food on average since this saves on time. Finally, higher-income cohorts can

consume considerable amounts of calories in high-end restaurants, but this appears not be the subject of critical discussion.

One variable that contributes to lowering obesity is accurate and easily understood food and beverage product labels that include information on calories. For example, Zagorsky and Smith (2017) find that checking nutrition food and beverage labels frequently tend to reduce fast-food consumption. But this requires easily located, easy-to-read, easy-to-understand, and accurate labels. And, the consumer must be literate. For product labels to be effective, available and affordable substitutes must be available to consumers. This option is not usually available in food deserts. But such substitutes are more readily available in the higher-income cohort locations where there are also similarly high obesity issues. Overall, one would expect rational individuals to consume less healthy food and beverages, on average, in the absence of appropriate labels. Poor and misleading labels restrict the ability of rational individuals who wish to be healthier to realize their preferred preferences. So does an individual's ability to understand and process food product labels. It is critical, therefore, that product labels be regulated for accuracy and for appropriate information to maximize the probability that individuals will realize their food product preferences (McCarthy 2004).

It is important to note that consumers are consuming more calories of all types. Obesity is not simply a function of people eating too much unhealthy foods (if one accepts this hypothesis). It can also be a product of people eating too much healthy foods. It is important to recognize that too much healthy food, nuts, and fruits, can also contribute to being obese as can too much unhealthy food. Overall, *ceteris paribus*, it is the excessive caloric intake that generates the weight gain that can result in obesity.

But all other things need not be the same. The consumption of calories can be compensated for through exercise or, more generally, through physical activity. And, sufficient exercise should burn off the calories that will otherwise result in a person becoming obese or overweight. Sufficient exercise can also result in reversing the process that resulted in a person becoming obese or overweight. With regards to adolescents across income cohorts, Drake et al. (2012) find: "Estimates indicate overweight/obesity and obesity prevalence would decrease by 11% and 26%, respectively, if adolescents played on at least 2 sports teams per year; obesity prevalence would decrease by 22% if adolescents walked/biked

to school 4–5 days per week.” But taking on such activities is a function of the availability of sports facilities and instructors/coordinators and safe walking corridors in students’ neighbourhoods. More generally, Levine (2011) finds with regards to American data: “Sedentary individuals move 2 h [hours] per day less than active individuals and expend less energy, and they are thereby prone to obesity, chronic metabolic disease, and cardiovascular death. More than half of county-to-county variance in obesity can be accounted for by variance in sedentariness. Overall, the poorest counties have the greatest sedentariness and obesity.” And, for wealthier individuals, being time poor, and locational challenges, might create barriers to engaging in appropriate amounts of physical activity.

Generally speaking, if obesity and overweight rates are to be reduced, more physical activity is required. Therefore, the important question that must be addressed here is, why would rational or smart individuals not engage in more physical activity if they do not want to gain excessive amounts of weight or if they wish to lose enough weight so to at least fall below the obesity threshold.

At least with regards to lower-income individuals there are serious environmental factors impeding individuals from partaking in sufficient physical activity prevent them from becoming obese or overweight. As Levine (2011) finds: “Several reasons may explain why people living in poor counties are less active. One reason may be that violence tracks with poverty, thereby preventing people from being active out-of-doors. Similarly, parks and sports facilities are less available to people living in poor counties, and people who live in poverty-dense regions may be less able to afford gym membership, sports clothing, and/or exercise equipment” (see also Noonan 2018). Even walking, which can serve to keep individuals from becoming obese (O’Mara 2019), can be dangerous in some low-income neighbourhoods. Such environmental constraints can impede rational individuals who want to be in good health and want their children to be in good health from realizing their preferred preference. This, of course, is completely unrelated to a person being irrational or quasi-rational. However, these types of constraints are not usually faced by individuals in higher-income cohorts. This raises the question of whether higher-income individuals choose not to be more physically active even when the opportunities do so are more readily available.

The evidence suggests, however, that there was a growing demand for gym membership (for those who can afford it), from 2010 to 2019, at a time when obesity rates were increasing, especially in the United States.

Table 1 Gym membership and attendance

	2010	2019	2019/2010
Gym membership globally (millions)	50	64	1.28
Visits to gyms in the USA (billions)	4.6	6.7	1.46
Number of gym members who attend more than 100 days per year (millions)	22	27.3	1.24

Source Derived from RunRepeat data. Accessed December 28, 2020, Available at: <https://runrepeat.com/gym-membership-statistics>

This is evident from Table 1. Obesity rates were increasing much before 2010 as well. But from 2010 to 2016 when the American obesity rate increased by about 6%, gym activity increased by well over 20%. Also, by 2019, 25% of Americans were gym members and, of these, 40% earned over \$100,000 American per year. These individuals were also the most active gym members. These estimates are far from perfect, but they do suggest that individuals who could afford to were attempting to engage in physical activity (through gym memberships) that could at least partially counteract weight gain. This data ignores individuals who might have become more active walkers or joggers, which does not require gym membership, but can take place in safe neighbourhoods.

Although this does not represent a robust statistical analysis, the evidence suggests that individuals have increasingly made efforts to become physically active, which could be attributed to the significant rise in the overweight and obesity rates in a large number of countries. This would be a rational response of individuals to the unwanted prospect of becoming obese or overweight in an effort to overcome this problem and face the challenge. But the obesity and overweight rates keep rising, or least not diminishing, in spite of these efforts. It is important, however, to recognize that for much of the world, the obesity rate stabilizes at a relatively low level (what it was at the lowest levels of per capita GDP) for the highest income cohort at the highest levels of per capita GDP. Apart from the lowest income cohort and the highest, the obesity rate first increases and then diminishes as per capita GDP increases, but it then diminishes to a rate similar to what it is for the highest income cohort at the highest level of per capita GDP. And for these income cohorts, the initial obesity rate (for the lowest level of per capita GDP) was well above that of the highest income cohort. For the lowest income cohort,

the obesity rate keeps rising, up to the middle range of per capita GDP (\$10,000–\$15,000) and then diminishes somewhat and remains at a level similar to that of the higher-income cohorts (actually somewhat higher [14%] than that of the highest income cohort [12%]) (Templin et al. 2019).

Two things are clear from the above pieces of evidence (although they are of a tentative nature). One, at the highest levels of per capita income economies for all but the lowest income cohorts, the obesity rates are falling from what they were at lower levels. This provides some substance to the argument or hypothesis that individuals at the higher-income cohorts are making efforts to keep from being obese or dropping off from the obesity threshold. This could involve becoming more physically active, as discussed above, or reducing calorie intake. This is consistent with the capabilities of rational individuals who can afford the time and income to be more physical active and reside in safe neighbourhoods. But in the United States, there is no such pattern of a decline in obesity. This can, in part, be related to the lack of quality assurance in the health and fitness industry such that attempts to become more physically fit will not bear expected results. With sub-optimal health and fitness industry professional support, one ends up with sub-optimal outcomes for clients (Altman 2020). Also, that there is no decline in the obesity rates amongst the lowest income cohort is consistent with the hypothesis of rational individuals who do not have the means to engage in more physical activity even if they want to (their preferred preference) and also do not have access to or the means to purchase healthier foods.

One does not have to revert to the assumption of irrationality to explain current and past patterns of obesity rates. Secondly, at the lowest levels of per capita GDP economies, obesity rates increase with income (across income cohorts). In other words, when people are very poor, the obesity rate is very low. As income increases and people can afford to purchase more food and drink, the obesity rate increases. But as per capita income increases, the obesity rate remains relatively stable across income cohorts. This suggests that as individuals move out of poverty and adjust to being able to purchase more food, an increasing percentage of individuals gradually adjust their consumption towards levels consistent with lower levels of obesity or falling below the obesity threshold. This dynamic learning process needs to be incorporated and empirically tested to understand its role in the evolution of obesity rates through time.

The next piece of our rational individual behavioural model is how imperfect and costly information, the lack of information processing capabilities, and information uncertainty (all related to bounded rationality) help explain the obesity issues John raised from a rational individual perspective. *Ceteris paribus*, poor information on food and beverage ingredients can contribute to individuals purchasing and preparing unhealthy foodstuffs. Poor and misleading information can also result in poor decisions/choices with regards to physical activity (Altman 2020). Given that obesity is an issue in all income cohorts, and with convergence in obesity rates between the low and the higher-income cohorts, imperfect and misleading information might play an important role in explaining the rise of obesity even in the face of many individuals having the capacity to purchase healthy foods and to engage in more physical activities in more structured and planned or designed physical activity environments. Individuals can't realize their preferred preferences to be healthier (not obese, less obese, less overweight, or not overweight), if individuals do not have the information required to realize these preferences. This then results in errors in decision-making such as not eating as healthy as possible and not being as physically active as required given the preferred preferences of the rational individual to be healthier. This point is consistent with John Tomer's focus on health capital as a causal variable, but has nothing to do with the irrationality of the decision-maker.

If one does not have access to correct information on food and beverage ingredients and their caloric content then one might choose relatively unhealthy foods because one believes them to be healthy based on what one's peers consume, what's being advertised, or what respected individuals tell us to consume. As previously discussed, more accurate information that is certified, by a trusted government agency for example, can be expected to improve the choices individuals will make towards healthier foods and beverages if this is the their preference.

The same case can be made with regards to physical activity. Here too, poor information about which physical activity or combination of activities will facilitate weight loss or prevent weight gain can result in individuals making sub-optimal choices in this domain. Having clear regulatory standards and certification of health and fitness professionals can facilitate individuals making choices that align with their preferences. Otherwise, they will end up with physical activity related services that generate sub-optimal outcomes. Individuals will often choose services and service providers which do not or cannot deliver on their promises

(Altman 2020). Or they might come to believe, falsely, that the required physical activity is too demanding to be doable.

6 A BEHAVIOURALIST MODEL OF WEIGHT DETERMINATION

In the simple neoclassical model, the revealed preferences of consumers represent their true preferences, what they actually would like to purchase. In terms of an indifference curve analysis, this is given by the point of tangency between the price line and the indifference curve. In Fig. 8, this is given by points, t, e, q, s, u, and v, that represent different consumption or demand equilibria given the relative price of healthy and unhealthy foods (and beverages) and the consumer's income. For John Tomer (and this would also be the case for John Galbraith) most of these equilibria do not typically represent the preferences that are in the best interest of the consumer, because the consumer's revealed preference is to purchase too much unhealthy food and beverages which, according to some experts, will result in weight gain leading to obesity. John Tomer maintains that consumers lack the willpower, based on inadequate levels personal and social capital, and this results in consumers being unable to overcome the

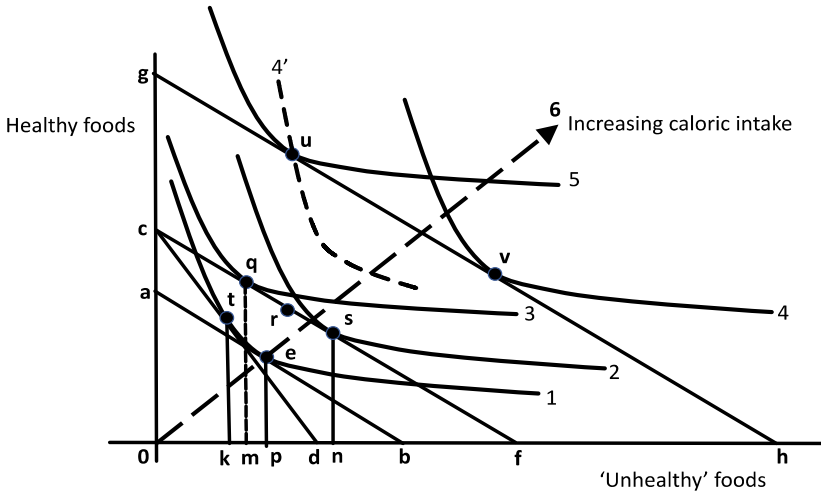


Fig. 8 Healthy vs Unhealthy Food Demand

marketing power of large corporations and the temptation of lower prices for unhealthy foodstuffs. This then, for John, is what is responsible for these consumers making inappropriate food and beverage choices and for being unable to control how much foodstuffs they consume.

Beginning with indifference curve 1 and price line *cd*, one has equilibrium at *t* where the consumer is preferencing relatively more healthy food (this is the case with any choice to the left of line segment 1, which is at a 45-degree angle from the origin). One can assume that this yields a healthy body weight for our consumer, *ceteris paribus*. With the drop in the relative price of unhealthy food (price line *cf*), the consumer preferences more unhealthy food (from *ok* to *on*), at the new equilibrium point of *s*, which is what conventional economics predicts in a very basic model and which John Tomer also anticipates. This is the price effect on consumer choice. For Tomer and others who focus on “biased” decision-making, there is something ethically wrong with this particular choice wherein consumers can’t resist the temptation of purchasing more unhealthy foods as their price diminishes.

What’s overlooked in this simplistic analysis is that one has a substitution and income effect. From indifference curve 1, the substitution effect is given by a movement from equilibrium points *t* and *e*, as the price for unhealthy foods diminishes, given by the movement from price line *cd* to *ab*. This yields an increase in the consumption of unhealthy foods by *kp*. Price line *ab* represents the relatively lower price of unhealthy foods. Conventional economics assumes that the typical rational person will purchase more of the cheaper product holding income (or utility) constant and if one assumes that the two products in question are substitutes. John Tomer seems to argue that our consumer should not respond to the lower price of unhealthy foods by purchasing more of it (even if she or he is lower income and every penny counts). The consumer’s indifference curve should be L-shaped, perfectly inelastic (at equilibrium point *t*) to the drop in the price of the unhealthy foods. However, there is no evidence that the substitution effect, itself, yields more caloric intake as one set of foodstuffs is substituted for another. When one purchases more unhealthy foods one diminishes the purchase of healthy foods. Therefore, food consumption per se, in terms of calories, does not necessarily increase.

But then there is the income effect wherein real income increases when price falls. And the evidence suggests that the income effect reinforces the substitution effect in that more unhealthy food is demanded as real

income increases. In Fig. 8, the income effect is given by pn . This reflects the hypothesis of some that the consumer will end up demanding even less healthy food than when its price was relatively low (which is what John Tomer intimates). This assumes that healthy foods are treated as a type of inferior good, for which there appears to be no evidence. But if the new equilibrium is at r , this would mean that the income effect yields an increase in the demand for both healthy and unhealthy foods. The income effect results in an increase in the demand for foodstuffs. What John argues is that the increase in the demand for unhealthy foods would suffice to result in obesity. Thus it would be better if the consumer would devote her income to consuming even more healthy foods such as that given by equilibrium q . However, given the preferences of the consumer, this is not possible.

What becomes clear from this modelling is that the decrease in the price for unhealthy foods generates an income effect that yields an increase in caloric intake irrespective of whether this intake takes the form of healthy or unhealthy foods. Ultimately, it is the increases in calorie consumption, *ceteris paribus*, that generates weight gain. From our discussion of the stylized facts, above, it is also clear that across income cohorts, rates of obesity appear to adjust to a similar value as per capita income increases.

Another point that that requires more attention is the fact that real income has increased over time, controlling for any drop in the price of food and beverages, affording consumers the ability to purchase more food and beverages or, more calories. This increase in income is given by price line gh where income increases from cf to gh in this scenario. One possible equilibrium is given by v wherein there is relatively more demand for unhealthy foods. At point u and indifference curve 5, there is relatively more demand for healthy foods. John Tomer is concerned that too many individuals choose to be at v . But the point that needs to be made here is that choosing v , in this scenario, is unrelated to the any change in the relative price of unhealthy foods. This can be entirely attributable to the income effect and the revealed preferences on the consumer. John Tomer and others who are focused on issues related to consumers' preferences (irrationality in consumer choice) advocate, in effect, shifting the "biased" consumer preference function from indifference curve 4–5. However, in this case, the consumer is not maximizing her or his utility as she or he defines it. Rather utility is only being maximized in the eyes of the expert who forces or nudges the consumer to behave in this manner.

But, as we've pointed out, the revealed preferences need not be the same as the preferred preferences of the consumer. And the consumer might choose to be at point *v* in a different more accurate information environment wherein the consumer realizes her or his preferred preferences. Here policy focuses on improving the decision-making environment, not on efforts to nudge irrational consumers to change their behaviour in the manner preferred by the expert. And whilst John Tomer also argues for improvements to the decision-making environment, he seems to have much less confidence in this given his assumption of irrational consumers.

What the above theorizing suggests is that increasing income is the most important variable causally related to increasing obesity rates, which appear to be stabilizing at relatively high incomes. The United States is an outlier in terms of having the highest rates of obesity. Perhaps too much attention has been paid to relative price changes as a core cause of obesity whereas the increase in obesity rates and overweight rates is most closely correlated with increasing real income. This point is underlined by the fact that what has fallen is the price of foodstuffs relative to other products (not the price of unhealthy foods), yielding a significant income effect. That being said, it is also important to note that it is increasing real per capita income (the income effect) which is positively correlated with increasing obesity rates and overweight rates. And the increasing obesity rates and overweight rates are also most strongly correlated with increasing life expectancy (Fig. 3).

Given the importance of increasing real income to increasing obesity rates, and given the assumption of rational consumers, the pressing issue now becomes one of how to induce a reduction in the consumption of additional calories as real income increases, and/or, how to encourage people to burn off a sufficient amount of the calories they are consuming so as to not be overweight or obese. So when John Tomer and others address the issue of "excess" consumption in the context of irrational consumers preferencing the consumption of too much food for their own good, their policy response is to nudge or force individuals to consume less even if this results in the consumer's utility being reduced given how the consumer defines her or his utility. Ideally, John would want individuals to become self-disciplined and change their preferred preferences towards the consumption of less food.

This point is illustrated in Fig. 9, where increasing real income is given by the outward shift in the price line from *ab* to *cd* to *fg*. Given indifference curves 1, 2, and 6, there is a revealed preference for more food and beverages as income increases, with demand rising from *0h* to *0j* to *0k*. This ever-increasing demand for food and beverages, which Tomer argues is also increasingly biased towards unhealthy foods, is a key cause for increasing obesity rates due to the irrational inability of consumers to control their desire for more and more calories. Hence, one nudges the consumer to indifference curve 7 and the demand for *0j* food and beverages. But this does not represent the preferred preference of the consumer and yields a lower level of utility, which John Tomer and others find acceptable since, they argue, this reduces the obesity rate. But this is not an equilibrium choice for the consumer since it is not consistent with her or his preferred preferences and can be expected to give rise to efforts to resist such impositions by the state and their representatives (a type of black market).

Nudging individuals towards less preferred options is not the only way to reduce calorie intake. Instead one can change the decision-making environment such that the consumer's preferred preferences are

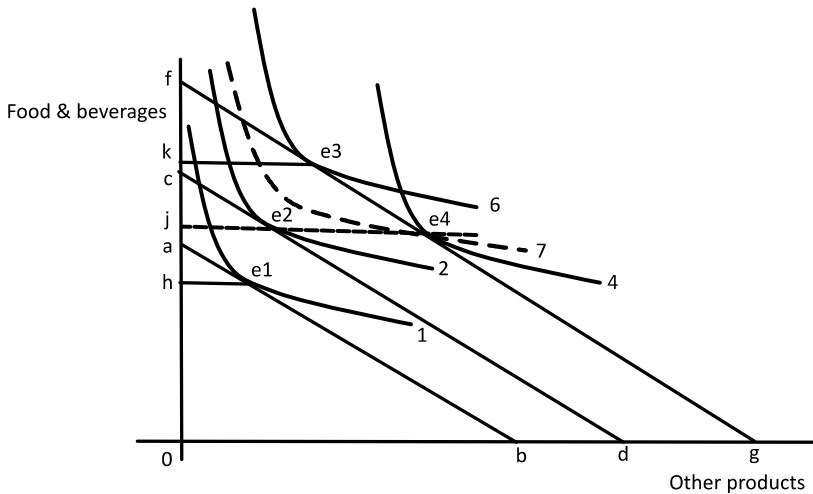


Fig. 9 The Income effect & Food and Beverage Consumption

embodied in indifference curve 4. In order to reduce calorie consumption amongst rational consumers, education and improved information is critically important and can serve to change the preferences of individuals towards less food consumption. In addition, providing improved information and the institutional basis to encourage and facilitate consumers to do more exercise and engage in more physical activity is consistent with the individual maximizing her or his utility by taking on tasks which will prevent her or him from becoming obese.

This point is illustrated in Fig. 10. PC1 represents a particular level of physical activity and/or consumption education for a given level of calorie consumption. The pivot of PC1 downward represents an increase in the level physical activity and/or consumption education. As PC1 pivots to PC2, at a given level of calorie consumption, this yields a lower weight (from 0a to 0b) at calorie intake level 0c. Also, if calorie intake increases from 0 to 0c', there need not be any weight gain if PC pivots from PC1 to PC2.

From the perspective of the rational consumer, who's utility is related to not becoming obese, improving the decision-making environment can play a significant role in reducing obesity rates and also overweight rates by providing rational decision-makers with the capability to the realize their preferred preferences. When the decision-making environment is reconfigured in this manner it becomes pointless to argue that one needs

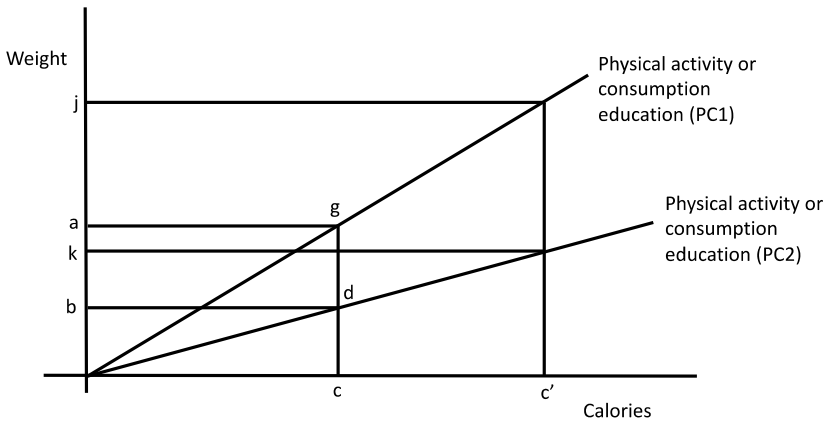


Fig. 10 Calories, Weight Gain, and Education

to nudge, softly or more forcefully, individuals to make choices that differ from their preferred choices. In sum, once one carefully factors into the analysis the decision-making environment plus price and income variables as possible core determinants of obesity, irrationality does not appear to be a core explanatory variable for individuals being obese or overweight.

This is not to say that there not are some individuals who prefer to remain obese (but not severely obese) or simply overweight (but not obese). We are unable to estimate what percentage of the obese and overweight population these individuals represent given prevailing flaws in the decision-making environment. From an evidential perspective, it is clear that life expectancy has increased dramatically, and that moderate obesity reduces life expectancy by about two years (probably even less). Being obese, from a decision-maker's perspective, will not reduce life expectancy, but only the extent of its increase.

Based on the sample countries in Fig. 3, the correlation between obesity rates and life expectancy is 0.155. And, in this preliminary analysis, the linear regression coefficient for these two variables with the obesity rate being the dependent variable, is 0.38. A 0.38 increase in life expectancy is related to as 1% increase in the obesity rate. Or, a 5-year increase in life expectancy (which actually occurred most recently in many countries) is related to a 1.88 increase in the obesity rate.

From modelling perspective, it is possible for some individuals to trade-off a slightly shorter life (but one longer than possible in the recent past) for the joy they derive from eating and from avoiding “excessive” physical activity. This would not be the act of an irrational person. It would simply be the decision of a rational person whose choices many experts and many of the obese persons' friends might disapprove of. But there is no evidence that this is the dominant personality type—that most people tend to be obese or significantly overweight because they want to be.

The evidence does suggest, however, that even given the flawed decision-making environment, at least on average, across countries there is a convergence in obesity and overweight rates across income cohorts as GDP per capita reaches its highest levels. We also know that obesity and overweight rates are most closely correlated with calorie consumption, irrespective of whether this consumption relates to fast-food restaurants (affordable to the poor and lower middle-income cohorts) or fancy five-star restaurants, more the domain of highest income cohorts (Bentley et al. 2018).

We argue that if one values individual freedom and recognizes the importance of creating the best possible decision-making environment, one should not interfere with the choices individuals make—such as punishing the poor for consuming unhealthy foods and relatedly eating at fast-food restaurants. Only by improving the decision-making environment (which incorporates facilitating access to healthy foods and physical activities), as opposed to limiting individual freedoms, will the wellbeing of our citizens be maximized, whilst improving the opportunities for members of our society to live a healthier life.

7 CONCLUSION

John Tomer made an important contribution to the obesity and healthy living literature by introducing a number of behavioural and institutional variables into his analysis, paying particular attention to what he refers to as personal, social, and health capital. He also situates his analysis in the context the nudging/irrational or quasi-rational decision-maker framework developed by Thaler and Sunstein (2008). John's main point of focus is on the role played by corporate manipulation of consumer preferences towards unhealthy foods and the ease by which consumers are manipulated into consuming these unhealthy foods. This manipulation drives the choice consumers make to adopt unhealthy lifestyles in general and serves to highlight the irrationality of consumers. Moreover, according to John, consumers all too frequently give into this temptation of purchasing increasingly cheaper, unhealthy foods. Ideally, he believes consumers should want to choose relatively healthy foods and consume a quantum of these so as not to become obese or overweight (apart from particular genetically based conditions), irrespective of price and this should be the basis of consumers' efforts to maximize utility. But since this is not the case, John believes, government should intervene to increase the price of unhealthy foods and to nudge consumers into behaving rationally even if the recommended behavioural changes are not what consumers want or desire.

We argue instead that price theory, supplemented by behavioural and institutional variables, together with the assumption that consumers are rational or smart agents, is a more productive starting point in understanding the determinants of obesity and being overweight. This assumption must also inform policy aimed at preventing or reducing obesity and overweight rates. Unlike John, we treat freedom of choice

(when this does not cause social harm) as a valued good in and of itself (Altman 2011; Berlin 1969; Sen 2000). We also assume, unlike John, that the revealed preferences of the consumer need not represent the preferred or true preferences of the consumer. Finally, we present some basic stylized facts to show that obesity rates differ across developed economies of which the United States is an outlier with an extraordinary obesity rate. The data also makes clear that the price of foodstuffs have fallen for both healthy and unhealthy foodstuffs. And, whilst obesity rates have increased, especially when individuals and countries have experienced significant increases in per capita GDP, this has been accompanied significant increases to life expectancy and as such there is no significant increase to death rates attributable to obesity.

We further argue that obesity rate increases can be largely attributable to rational consumers increasing their caloric intake as their real income increases as opposed to the increased consumption of cheaper unhealthy foods (not born out by the data). One need not revert to assumptions of irrationality to explain away the changes in obesity and overweight rates.

The context of imperfect, costly, and sometimes misleading information on food ingredients and what comprises calorie reducing physical activity is critical to any policy prescription. But there is no clear evidence that consumers have adequate literacy levels related to this type of information, or what John Tomer refers to as health capital. Thus in this case one can explain the rise of obesity and overweight rates by those variables which impede rational consumers' realizing their preferred preference for not being obese. Moreover, rational consumers may not have access to the facilities or the time needed to engage in adequate physical activities. This could hold true for both lower and higher-income cohorts in the more economically developed economies where obesity rates are converging.

This suggests policy should be geared towards institutional changes that facilitate consumers realizing their true preferences. And whilst it might be the case that some individuals actually prefer to be obese, we argue that even in such a case it is a higher good not to apply policy that would violate such a person's freedom to realize her or his preference. Such an approach makes room for cultural preferences. Otherwise, one violates a critical tenet of a free and democratic society and punishes the vast majority of the population who don't want to be obese but end up in this predicament for institutional reasons. If institutional parameters are such that the costs of weight loss are reduced, individuals might be incentivized to lose weight without imposing coercive measures. Our

perspective on the causes of obesity and being overweight direct our attention to a flawed or sub-optimal decision-making environment that results in obesity and overweight rates being much higher than they should be given the preferences of individuals and the social capital they are embedded within.

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PART V

Behavioural Aspects of the Household
and Family



Intergenerational Inequality and Parenting: Making Room for the Parent–Child Relationship

Art Goldsmith

1 INTRODUCTION

John Tomer was a quiet and humble man with a lot to say. His efforts to further integrate human capital theory with developmental psychology advanced the capacity of human capital theory—a workhorse concept in economics—to explain variations in life-course outcomes. Moreover, the ideas he shared in his book *Integrating Human Capital with Human Development* (Tomer 2016) offer innovative thinking on how public policy might promote greater well-being and reduce inequality in contemporary American society.

The purpose of this essay is to identify, and elaborate on, the three ways in which Tomer’s thinking on poverty and inequality—set out in Chapter 5 of *Integrating Human Capital*—further enriched human

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capital theory and offers a new framework to think about addressing these social concerns. First, he reinforced Heckman's view that investment in different forms of human capital—broadly speaking cognitive and non-cognitive—should be emphasized at different points in the early portion of the life cycle to prevent and combat poverty. Second, he asserted that Heckman's notion of non-cognitive skills should be unpacked to deepen our understanding—conceptually and empirically—of the economic and social impact of these socio-emotional attributes. Finally, he substantially extended Becker's (1981) theory of the family, which became the conventional perspective in economics, to offer a more complete—relationship oriented—notion of the role of parenting in establishing the foundation for children's social and economic achievement over their subsequent life course.

To obtain a clear picture of how John Tomer's thinking—set out in his *Integrating Human Capital with Human Development* (2016)—advances human capital theory I begin by reviewing the core contributions made by Becker and Heckman. Then, I demonstrate how Tomer extends their work, and the implications of his insights.

2 BECKER: THE ARRIVAL OF HUMAN CAPITAL THEORY AND FAMILY ECONOMICS

Gary Becker—late Professor of both Economics and Sociology at the University of Chicago and 1992 winner of the Nobel Prize in Economics—advanced the idea, in his pathbreaking book *Human Capital* (1964)—that people have embedded in their skills and attributes, including personal and social capital, that influence their productivity and behavior. His insight that individuals could invest in personal skill development—by allocating time and purchased goods—to advance their stock of talents and perspective (Becker 1964, 1965; Becker et al. 1971) has subsequently shaped the thinking of economist in the subfields of labor, education, health (Grossman 1972), development, and family economics. In practice, Becker focused on education, on-the-job training, and workplace experience—cognitive skills—as the fundamental elements of human capital.

In subsequent work, *a Treatise on the Family* (1981), Becker offers a theory of how families function. His purpose was to offer a framework for thinking about the role of parenting in contributing to the process of offspring accumulation of human capital. Together, these bodies of work

provided a mechanism for explaining differences in economic well-being, and hence poverty and inequality. Moreover, it made clear that genetics, personal actions, and parental behavior all played a part in determining a person's productivity—via human capital accumulation—and hence earnings. Building on this, a person's stock of human capital could explain wealth accumulation and other important life-course outcomes such as health status.

At the heart of Becker's thinking were two assumptions. First, parents and their offspring acted rationally in allocating time and in purchasing goods both for consumption and to be used in the production of human capital. Second, that parents gained happiness from the achievements of their offspring and they behaved altruistically toward them. One way to do so was to assist their children in the accumulation of human capital by investing parental time to help them acquire skills and by providing them with the market purchased goods that contribute to the development of their competencies.

The conventional presentation of Becker's perspective asserts that a person is paid a real wage (w/P) equal to their marginal productivity (MP), which in turn depends on their stock of human capital (H). Human capital attainment is an investment process—since it generated by own time allocated to generate human capital (t^H), which has an opportunity cost, and goods acquired in markets (q^H) to assist in this process—allocated today. However, the return in the form of higher productivity and wages arrives later in the life-course with some degree of uncertainty. Of course, those with more innate ability (ϕ) will be more effective in turning inputs into human capital. In addition, parent time (P^{Time}) is advanced as a key contributor—input—to production of offspring skills. Thus, the neoclassical theory of wage determination accounting for Becker's theory of human capital accumulation, can be specified as;

$$(w/P) = MP = MP\left(H\left[q^H, t^H, P^{Time}, \phi\right]\right) \quad (1)$$

Intergenerational poverty arises from this framework if parents pass on poor genes—a lower value of ϕ —allocate too little of their time to aid their offspring in producing human capital or provide insufficient funds to purchase goods that aid their children in developing human capital. This later constraint can be the result of preferences to use their funds for other activities or due to low earnings due to having accumulated little

human capital themselves. Low family income can also stem from single parenthood or developments such as adult health problems. Of course, if individuals allot little of their own time to the generation of human capital that will hamper accumulation of such skills.

Becker extended this framework to explain how a particular form of discrimination (Becker 1971)—distaste or prejudice—could lead to lower wages. Other scholars (Blaug 1976) applied the model by asserting human capital was a determinant of a range of important outputs such as employment, health, and social status. However, his colleague James Heckman, at the University of Chicago advanced the theory in a substantive manner (Heckman 2010), that also led to new insights about the linkage between human capital formation, and the role of parents, in determining the economic and social stature of their offspring.

3 COGNITIVE AND NON-COGNITIVE HUMAN CAPITAL: PARENTING, AND OFFSPRING WELL-BEING

James Heckman (Heckman 2008; Heckman et al. 2006), winner of the Nobel Prize in economics in 2000, extended Becker's notion of human capital, which was tantamount to the accumulation of cognitive skills (H^{Cog}) to account for the stock of non-cognitive skills (H^{NCog}) a person possessed (i.e., $H = H^{\text{Cog}} + H^{\text{NCog}}$). Heckman often refers to non-cognitive skills as socio-emotional skills which entail—grit, determination, motivation, self-regulation, patience, and farsightedness—notions associated with psychologist's concept of the *big five personality traits* (Fiske 1949). Heckman asserts that non-cognitive skills, like cognitive skills, influence workplace productivity (Heckman and Rubinstein 2001) and other life-course outcomes,

$$(w/p) = MP\left(H\left[H^{\text{Cog}}, H^{\text{NCog}}\right]\right) \quad (2)$$

Following Becker, the production of cognitive and non-cognitive skills by offspring depends on the same set of inputs as human capital in general. However, in an important but subtle twist, Heckman (Heckman and Masterov 2007; Cunha and Heckman 2008) posits that non-cognitive skills effect productivity and decision making both directly, and indirectly by impacting the accumulation of cognitive human capital.

Heckman's perspective can be specified as follows,

$$H^{\text{NCog}} = H^{\text{NCog}}(q^{\text{NCog}}, t^{\text{NCog}}, P_{\text{Time}}^{\text{NCog}}, \phi) \quad (2a)$$

$$H^{\text{Cog}} = H^{\text{Cog}}(q^{\text{Cog}}, t^{\text{Cog}}, P_{\text{Time}}^{\text{Cog}}, \phi, H^{\text{NCog}}) \quad (2b)$$

Heckman came to this insight through his evaluation of the Perry Preschool Project (Heckman et al. 2010), carried out from 1962 to 1967, which provided high-quality preschool education to three and four-year-old African-American children living in poverty. The children attended the preschool each weekday morning in 2.5-hour sessions taught by certified public school teachers with at least a bachelor's degree, and an average child-teacher ratio of 6:1. The curriculum emphasized active learning, in which the children engaged in activities that (i) involved decision making and problem-solving, and (ii) were planned, carried out, and reviewed by the children themselves, with support from adults. Essentially, the curriculum emphasized the development of non-cognitive or socio-emotional skills—often referred to as *soft-skills*.

The Perry Preschool teachers also provided a weekly 1.5-hour home visit to each mother and child, designed to involve the mother in the educational process and help implement the preschool curriculum at home. Long-term evaluation of the program revealed that at age 27 children who attended the Perry Preschool had higher—earnings, rates of home ownership, and levels of schooling, as well as significantly fewer arrests—than a control group of non-preschool participants. These findings led Heckman to form two critical conclusions. First, that parental time spent helping children accumulates socio-emotional skills was productive or time well-spent. Second, that accumulating non-cognitive skills was very beneficial to the child because of direct and indirect effects. Essentially, he recognized that socio-emotional skills such as—mental flexibility, focus, grit, determination—helped the children accumulate cognitive skills.

These insights led Heckman to subsequently speculate that *poor parenting*—too little time allotted to help their offspring acquire cognitive and non-cognitive skills, and the allotment of too little money to purchase goods that foster cognitive and non-cognitive skills—was largely responsible for the intergenerational transmission of poverty. He argued (Heckman and Masterov 2007) that the large number of children growing up in disadvantaged environments—in part due to *poor*

parenting—resulted in too many children entering school with deficits in both cognitive and non-cognitive human capital ultimately leading to unfavorable adult outcomes.

Although Heckman recognized, through the home visit element of the Perry Preschool program, that social context, including relationships with parents, mattered in the learning process this was not emphasized in his modeling of skill accumulation. Tomer thought this was a mistake. He was aware of insights from sociology offered by Akerlof and Kranton (2000, 2002) that social context, especially the identity a youth internalizes and displays at school and at home plays an important role in learning. However, he also understood that a student's identity depends on their self-image which can be influenced by their relationship with the parents. This contributed to the importance he placed on a young person's interactions with their parents in understanding differences in accumulation of cognitive and non-cognitive skills, and hence life-course outcomes.

4 JOHN TOMER: HETEROGENEITY OF SOCIO-EMOTIONAL CAPITAL

John believed that explicitly accounting for non-cognitive attributes as well as cognitive skills was an enormously valuable advance in human capital theory. However, he considered Heckman's approach of pooling all of the various non-cognitive or socioeconomic talents a person may possess into a single variable less than ideal on theoretical and empirical grounds. John favored unpacking or disentangling them to obtain a better grasp of how each of the elements of non-cognitive skills is likely to affect personal productivity and later in life socioeconomic outcomes. Moreover, his approach of acknowledging—and investigating—the heterogeneity of soft-skills allows for a conceptual, and empirical, exploration of how the different forms of socio-emotional skills might impact each other.

Tomer identified a number of forms of non-cognitive skills a person might have a stock of including: social capital, personal capital, cultural capital, organizational capital, ethnic capital, moral capital, and patience capital. Each of these captures a stock of attributes that may guide a person's actions and hence influence their life-course path.

He raised a number of questions that he believed were masked by pooling all of the forms of socioeconomic capital into a collection. On the production side, were there complementarities in generating the various

forms of soft-skills? For instance, is it the case that someone who is proficient at generating patience capital is also relatively effective in producing moral capital or social capital?

Also, of grave concern to John was when—over the early life-course—was a person most efficient at producing the various forms of soft-skills? Did it make sense to begin investing in moral reasoning (i.e., capital) or patience capital early in life or waiting until the prefrontal cortex is more developed—during emerging adulthood, the developmental period spanning from ages 18 to 29 (Arnett 2000)—and hence the brain is more receptive to the formation of such attributes? He thought we should be guided by neuroscience on such matters and that careful empirical exploration must be conducted to determine the answers to these questions. In his view, this information would allow a youth to allocate their time devoted to soft-skill development efficiently.

Likewise, parents would know which soft-skills to help their children develop at various stages of childhood and emerging adulthood. Since parent time is scarce this knowledge will permit them to effectively help their children acquire socio-emotional skills with the time they contribute to that process. Similarly, empirical evidence on youth's effectiveness in generating different forms of soft-skills as they age allows the government to use tax payer resources efficiently when developing and implementing policies to help youths build soft-skills.

Another compelling question advanced by John Tomer was how effective would the various forms of soft-skills be in yielding important life benchmarks such as completing high school, attending and graduating from college or trade school, and subsequently obtaining additional skills and professional training? Similarly, which of the various soft-skills would help persons become resilient to life's many pitfall including; alcohol and drug abuse or addiction, poor mental health, impulsive behavior, early pregnancy, broken families, violence, incarceration, and unhappiness.

John feared that treating soft-skills as a homogenous collection of talents would diminish their importance and our understanding of the role they might play in contributing to economic and social well-being directly and through their impact on the production of cognitive skills, which in turn would impact life-course outcomes. He wondered if the influence of various forms of soft-skills on valued outcomes was contingent upon the level of other soft-skills. For instance, did the benefits of social or relationship capital, depend on grit or determination? He noted the dearth of scientific knowledge about many forms of non-cognitive

capital, and this troubled him. Essentially, John advocated for a deep exploration of the empirical consequences of developing various types of soft-skills that would largely parallel the knowledge base researchers—in a number of disciplines—had painstakingly developed over cognitive human capital. For instance, much is known about the impact of the various inputs—curriculum, peers, quality teaching, school environments, summer program—on cognitive human capital accumulation and the impact of cognitive skills on early and mid-life outcomes in the workplace and in the social sphere. In John’s view, one element on the frontier of human capital research is to gain insights regarding: how youths can effectively acquire socio-emotional skills, how these talents can promote cognitive development, and how soft-skills working in tandem with each other and with cognitive attributes can foster valued life-course outcomes

5 HUMAN CAPITAL THEORY AND THE INTERGENERATIONAL TRANSMISSION OF POVERTY AND INEQUALITY: TOMER AND THE CENTRAL ROLE OF PARENT-CHILD RELATIONS

5.1 The Conventional—Parent Time Framework

The conventional human capital theory explanation for poor earnings following Heckman is that inadequate accumulation of cognitive and non-cognitive skills leading to low wages, limited—if any—savings, and extensive social and economic insecurities, are responsible for poverty. Low income families in turn struggle to find the financial and time resources to assist their children in acquiring cognitive and non-cognitive skills need to break the cycle of poverty. This poor parenting view of the intergenerational transmission of poverty became the conventional story advanced by economist for the high and persistent level of poverty found in the United States.

Support for this view piled up as a range of social scientists (Heckman and Masterov 2007; McLanahan 2004; Lareau 2003) offered evidence that single parent households, especially those led by teenage mothers who failed to complete high school (Francesconi 2008)—households with overextended mothers often working long hours at low pay were seriously constrained in providing their children with time and goods—were the locus of a disproportionate share of poor children.

This narrative about the perils of poor parenting for the life-course prospects of children was compounded by evidence that children who suffer from “*Adverse Childhood Experiences*” (Felitti and Anda 2005; Anda et al. 2006) exhibited elevated rates of poor adult outcomes including—alcoholism, drug abuse, mental and physical health problems. Adverse childhood experiences include: emotional, physical and sexual abuse, emotional and physical neglect, witnessing domestic violence, growing up with mentally ill or substance abusing household members, experience the loss of parent, or having a household member incarcerated. McEwen (1998) advanced the notion that traumatic experiences such as these result in persistent stress—which he termed *allostatic load*. Researchers (Anda et al. 2006) have found that persistent early life stress undermines the performance of critical brain structures (i.e., hippocampus, prefrontal cortex) associated with learning, and there is evidence (Diette et al., 2017) that being the victim of early life trauma reduces the likelihood of high school graduation. Thus, it is logical to assert that the accumulation of cognitive and non-cognitive skills is compromised by traumatic victimization (T) as a youth,

$$\left(\frac{\partial(H^{\text{Cog}})}{\partial(T)} < 0, \text{ and } \frac{\partial(H^{\text{NCog}})}{\partial(T)} < 0 \right)$$

Moreover, youths who are subject to traumatic experiences, whether they take place in an internal environment (IE) or external environment (EE)—the home or community respectively—experience lasting adverse effects on their well-being (Diette et. al. 2018). Of course, the impact of trauma victimization depend exposure as well as the intensity of the experience i_T .

A common refrain in economics is that if parents spent more time with their kids these traumas, often referred to as insults to their well-being, would be less likely to take place.

$$\left(\frac{\partial(T)}{\partial(P_{\text{Time}}^{\text{Cog}})} < 0, \text{ and } \frac{\partial(T)}{\partial(P_{\text{Time}}^{\text{NCog}})} < 0 \right)$$

Moreover, when children are exposed to early life traumas the unsettling consequences would be lessened—the intensity of the adverse effect would be reduced—by additional time spent with their parents (Tough

2012),

$$\left(\frac{\partial i_T}{\partial (P_{Time}^{Cog})} < 0, \text{ and } \frac{\partial i_T}{\partial (P_{Time}^{NCog})} < 0 \right)$$

Given the high rate of prevalence of violence victimization, for men and women, over the life course (Diette et al. 2018) it is essential to account for the impact of trauma when specifying the production functions for cognitive and non-cognitive skill acquisition. Children’s accumulation of cognitive and non-cognitive human capital, once the role of trauma is accounted for, is depicted in Eqs. (3a) and (3b),

$$H^{NCog} = H^{NCog}(q^{NCog}, t^{NCog}, P_{Time}^{NCog}, T[P_{Time}^{NCog}] * i_T[P_{Time}^{NCog}], \phi) \tag{3a}$$

$$H^{Cog} = H^{Cog}(q^{Cog}, t^{Cog}, P_{Time}^{Cog}, T[P_{Time}^{Cog}] * i_T[P_{Time}^{Cog}], \phi, H^{NCog}) \tag{3b}$$

Inspection of Eqs. (3a) and (3b) reveals that parent time allocated to assist children in the accumulation of skills has both a direct and indirect effects. The direct effect is the result of more parent time committed to the skill development of their child, *ceteris paribus*—with fixed amounts of the other inputs including the child’s time and relevant goods purchased in markets

$$\left(\frac{\partial (H^{Cog})}{\partial (P_{Time}^{Cog})} > 0, \text{ and } \frac{\partial (H^{NCog})}{\partial (P_{Time}^{NCog})} > 0 \right)$$

The indirect effect, a smaller likelihood of experiencing trauma { } and when trauma is experienced a lower level of intensity < >,

$$\frac{\partial (T)}{\partial (P_{Time}^{NCog})} = \left\{ \frac{\partial (T)}{\partial (P_{Time}^{NCog})} * i_T \right\} + \left\langle T[P_{Time}^{NCog}] * \frac{\partial (i)}{\partial (P_{Time}^{NCog})} \right\rangle < 0$$

$$\frac{\partial(T)}{\partial(P_{\text{Time}}^{\text{Cog}})} = \left\{ \frac{\partial(T)}{\partial(P_{\text{Time}}^{\text{Cog}})} * i_T \right\} + \left\langle T [P_{\text{Time}}^{\text{Cog}}] * \frac{\partial(i)}{\partial(P_{\text{Time}}^{\text{Cog}})} \right\rangle < 0$$

reveals the expanded role of how parental time allotted to these activities influences the accumulation of cognitive and non-cognitive talents.

Essentially, the importance of time parents allocate to promote their children’s accumulation of cognitive and non-cognitive talents is amplified once trauma exposure, T , is accounted for—since traumatic victimization undercuts the production, and hence, acquisition, of cognitive and non-cognitive attributes. Now, the time parents contribute to help their children build cognitive and non-cognitive skills has both a direct effect and an indirect effect (i.e., by limiting the undermining impact of traumatic victimization).

In summary, a person’s stock of cognitive and non-cognitive skills contributes to the realization of valued life-course outcomes, O , and trauma undermines the accumulation of these skills. Moreover, parental time allotted to help children acquire cognitive and non-cognitive capital limits trauma victimization and the severity of traumas adverse impact on both forms of human capital accumulation—as denoted in Eq. (4), which also allows for the role of government policy ($GPoI$) such as preschool with a home schooling component, in promoting the accumulation of these skills.

$$O = O(H^{\text{Cog}}, H^{\text{NCog}}) \tag{4}$$

where,

$$H^{\text{Cog}} = H^{\text{Cog}}(t^{\text{Cog}}, q^{\text{Cog}}, H^{\text{NCog}}, T\{\bullet\}, P^{\text{Time}}\{\bullet\}, GPoI^{\text{Cog}}) \tag{4a}$$

$$H^{\text{NCog}} = H^{\text{NCog}}(t^{\text{NCog}}, q^{\text{NCog}}, T\{\bullet\}, P^{\text{Time}}\{\bullet\}, GPoI^{\text{NCog}}) \tag{4b}$$

Thus, as conventional human capital theory evolved by accounting for the role of trauma exposure during childhood, the amount of time parents spend assisting their offspring in acquiring human capital came

to play an even more important role in explaining life-course achievements. However, in Tomer's view, this advancement fostered an incomplete, understanding of the role of parents in offspring human capital accumulation—a view that is illuminated in the next section.

5.2 *The Tomer—Parent Relation Framework*

Drawing on insights from developmental psychology, John Tomer departed in a substantive manner from the conventional view advanced by economists that “good parenting” is fundamentally about time spent with children. Citing research by neuroscientist Bruce Perry (2002) and Tomer (2016, 35) notes that in the early phase of development what a child needs is a “*good social relationship with their parents*” which is generated by; nurturing, loving attention, and protection. Of course Perry's work is inspired by the seminal work on parent-child attachment by developmental psychologists (Ainsworth 1978; Bowlby 1979). Indeed, there is a substantial body of evidence (Rutter 2006) suggesting that a major determinant of child development is the quality of the nurturing environment rather than just financial resources (Mayer 1997) available or the amount of time a child spends with their parents. However, standard notions of parenting built into the sub-discipline of *family economics*—neglects the importance of the parent-child relationship in modeling the influence of parents on children's accumulation of skills and life-course achievements (Becker 1981; Doepke et al. 2019).

Tomer emphasizes parental relations in characterizing “good” from “poor” parenting, and hence in accounting for the contribution of parents to the life-course outcomes of children. This represented a fundamental departure from standard economic thinking about how to account for the influence of parents on children's subsequent life-course outcomes.

John's thinking about the link between parenting and child development was heavily influenced by Maslow's (1943) notion that humans have a hierarchy of needs—and must attend to the realization of—human warmth, security and safety, and meaningful relationship—before progressing to concerns such as socioeconomic achievements.

Following Maslow psychologists advanced a number of life span development theories including; Levinson's *Seasons of Life Theory* (Levinson et al. 1978), Erikson's (1963) *Stages of Psychosocial Development*, and Bronfenbrenner's (1979) *Ecological Theory*—all of which identified the

importance of a nurturing relations and attachment with parents or caregivers—as critical for healthy child development, which fosters social and economic success later in life.

Diana Baumrind (1966), a clinical and developmental psychologist known for her research on parenting styles, offers insights on what good parenting entails. She asserts that there are two dimensions of parenting; demandfulness and responsiveness—which for simplicity are characterized as high (i.e., demanding, responsive) or low (undemanding, unresponsive). Demandfulness entails the claims that parents make on children, while responsiveness reflects the degree of emotional commitment of parents to their children.

An *Authoritative* parent style—distinguished by demanding and responsive parents—is considered the gold standard in parenting and promotes a strong relationship between the child and parent. A weak parent-child relationship is expected when parents are both demanding and unresponsive (i.e., *Authoritarian* parenting style). *Neglectful* (i.e.,—undemanding and unresponsive) and *Indulgent* (undemand and responsive) forms of parenting are also likely to foster a weak parent-child relationship.

Tomer posits that parenting in economic models of the family should be characterized as a complex construct delineated by both the nature of the parent-child relationship, P^{Rel} , and the provision of parental time and other resources allotted to child development. This orientation leads to the following description of the production functions for cognitive and non-cognitive skills,

$$H^{NCog} = H^{NCog} \left(q^{NCog}, t^{NCog}, P_{Time}^{NCog}, T \left[P_{Time}^{NCog} \right], P^{Rel}, \phi \right) \quad (5a)$$

$$H^{Cog} = H^{Cog} \left(q^{Cog}, t^{Cog}, P_{Time}^{Cog}, T \left[P_{Time}^{Cog} \right], P^{Rel}, \phi, H^{NCog} \right) \quad (5b)$$

The notion of “good” parenting in this framework is not straightforward, and the standard binary that quality parenting is based solely on time and resource commitments where—more is better than less—is misguided. Parents who provide their children with lots of resources, but are unengaged leading to a strained relationship with their children, are not doing an adequate job given Tomer’s perspective. Similarly, the single mom who develops a tight relationship with her children, while struggling to provide them with lots of time and material goods, may well be an excellent parent. Indeed, Tomer considers the relationship element

of parenting more important than the resource aspect. An interesting question is can policy programs teach parents how to be both responsive and demandful, in ways that do not foster backlash? Can parents call on a strong relationship with children to help youths overcome trauma, and teach them ethical frameworks (Nussbaum 1997; Sen 1999) that can be valuable in guiding them professionally and as family and community members?

Recent work by Doepke et al. (2019, p. 41) acknowledges that parent-child relations are an important aspect of parenting, yet they assume that good parenting is the outcome of more intense—time rich—parenting aimed at advancing a child’s accumulation of cognitive skills—the conventional view in the field of economics. They note that a fruitful avenue for future research would be to combine detailed time-use data with information on the relationships of parents and children—a view totally in line with the perspective advanced by Tomer. The dearth of empirical work on the contribution of time and parent-child relationships to skill accumulation and life-course outcomes remains a factor that limits economist understanding of poverty, inequality, wealth accumulation, and various forms of social behavior—and the of the role parenting in these developments. It is high time to address these shortcomings, as advocated by John Tomer a number of years ago (Tomer 2016).

6 CONCLUDING THOUGHTS: TOMER’S ROADMAP AND THE EVOLUTION OF HUMAN CAPITAL THEORY

Human Capital theory has evolved steadily since Becker’s pathbreaking work in the 1960s (Becker 1965). Major conceptual breakthroughs including—Grossman’s notion of health capital (Grossman 1972) and Heckman’s view that non-cognitive skills (Heckman et al. 2006) matter and impact the accumulation of cognitive skills—deepened our conceptual awareness of how human capital can shape a person’s life course. Moreover, a myriad of empirical papers—found in a range of general and topic specific journals—advanced our understanding of how human capital actually contributes to achievements over the life cycle. Nevertheless, on theoretical and empirical grounds gaps in our knowledge remain. New ways of—imaging how human capital, of various types, is accumulated, and the effects of these skills—have, and will, be advanced. However, ideas that challenge—even notions that build upon—conventional perspectives of how things operate are often slow to be embraced.

Fortunately, compelling ideas ultimately find their way into professional conversations and enrich both our theories and our understanding of the linkages between variables.

John Tomer's emphasis on accounting for the role of relationships between parents and children is an idea that is likely to be adopted eventually. Ultimately, his perspective that both parental time investments and parent-child relations are central to skill accumulation on the part of youth will lead to a richer *conventional* model of how human capital is acquired and how youths can become more resilient to unsettling events like traumatic victimization. Moreover, his call for more research on how and when youths might ideally commit to accumulating alternative forms of soft-skills will be headed when the necessary data become available. This development will also improve economist understanding of the family. It is a shame that John won't be able to comment on that work, and knowing him, point out additional ways to further advance the evolution of scholarship on human capital. As his ideas are adopted economists will know more about the sources of inequality, achievement, and happiness resulting in a footprint that can be linked to John Tomer's insights, energy, and creativity—a legacy worth honoring!

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Assessing the New Home Economics with 2020 Vision

Shoshana Grossbard and Andrea H. Beller

1 INTRODUCTION

At least since the early 1900s and until recently economics has made little room for non-monetized applications. This has translated into more of a focus on one side of the circular flow of economic activity: businesses.

Parts of this paper are based on Beller and Grossbard (2019).

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If household economics is defined as all economic analyses of household decisions,¹ mainstream economics has mostly covered a relatively small part of household economics: the part with ties to the monetized economy. Micro- and macro-economics have dealt extensively with how households consume and save, and labor economists have analyzed labor supply. The study of non-monetized outcomes—such as household formation and household production—was left to other disciplines. Early in the twentieth century, a number of other fields of study found room to grow as economics restricted its scope of inquiry, including: (a) home economics, in which the study of household production was subsumed² and (b) sociology, social psychology, demography, and social anthropology which took over research on household formation and dissolution.³

The 1960s saw the birth of a new school of economic thought that brought research on non-monetized household decisions back into mainstream economics. Led by Gary Becker and Jacob Mincer, it produced research related to household production and non-monetized household decisions, using then-prevalent or new analytical tools of micro-economics and econometrics. This school has been called the New Home Economics (NHE), as suggested by Marc Nerlove (see Nerlove 1974). It is widely agreed that the NHE started in the early 1960s, with the publication of Becker (1960) on fertility and Mincer's presentation of his

¹ In line with the aims and scope of the *Review of Household Economics*, as stated in <https://www.springer.com/journal/11150/aims-and-scope>.

² Margaret Reid (1934) published a book on household production, based on the dissertation she wrote at the University of Chicago. Hazel Kyrk had been her thesis adviser. On the origins of home economics see Folbre (1998), Beller and Kiss (2001), and Beller (2014). By the late 1970s, many departments of home economics had been reorganized and renamed as, for example, the College of Family and Consumer Sciences (Georgia), the School of Human Resources and Family Studies (Illinois), or the Department of Consumer Economics and Housing (Cornell). In the mid-1990s, some had been further transformed and merged with other departments, with the economics units becoming the Department of Agricultural and Consumer Economics (Illinois), or Policy Analysis and Management (Cornell).

³ More on the history of economics and sociology of the family can be found in Grossbard-Shechtman (2001b).

innovative work on married women's labor supply at an NBER conference,⁴ but there is no consensus regarding the end of the NHE.⁵ We hereby define as NHE-ers those who (1) worked with Becker or Mincer on NHE-related research topics as colleagues or (2) were students of Becker or Mincer between 1960 and 1980 and either wrote a doctoral dissertation on a NHE theme or—if their dissertation did not deal with the NHE—published articles related to the NHE within 15 years of graduation. The students were enrolled either at Columbia, where both Becker and Mincer taught in the 1960s and Mincer in the 1970s, or at the University of Chicago where Becker officially moved in 1970.⁶ The colleagues were either at one of these two economics departments or at the National Bureau of Economic Research (NBER), where both Becker and Mincer were senior researchers during most of that period. Now that sixty years have passed since the NHE's birth it is a good time to assess some of its accomplishments.

In Section 2, we list what we consider as the five principal topics to which the NHE contributed, mentioning some publications by NHE-ers: consumption, labor, health, children, and marriage/divorce. Section 3 lists observations about the NHE's success. These observations are far from a systematic survey or assessment. The first observation deals with major awards obtained by Becker, Mincer and other prominent NHE-ers. The second observation assesses the NHE's success in terms of contributions to the study of consumption and labor markets, two outcomes that have been of major interest to economics at least since the early twentieth century. Given the centrality of these topics, it follows that NHE ideas have had a considerable impact not only on labor economics but also on fields as diverse as macro-economics, agricultural economics, and development economics. The third observation assesses the success of three new applications of economic investigation spearheaded by the NHE in

⁴ That paper was published as Mincer (1962). Mincer reported this 1960 presentation as the starting point of the NHE in at least two conversations Shoshana had with him, one on the phone and one in person.

⁵ In a phone conversation in the 1990s Mincer told Shoshana that the term "New Home Economics" was not applicable any longer: "new" loses its meaning after a certain amount of time.

⁶ For more information on students of Becker and Mincer at Columbia see Grossbard-Shechtman (2001a) and Beller and Grossbard (2019).

terms of resources devoted to these applications by the NBER.⁷ These applications are health economics, economics of children, and economics of marriage and cohabitation. The fourth observation assesses the last two of these fields of specialization's success at attracting resources from organizations other than the NBER. The fifth and final observation reports on some of the personal academic successes of students of Becker and Mincer who wrote dissertations on NHE topics. Conclusions are found in Sect. 4.

2 THE MAIN CONTRIBUTIONS OF THE NHE

Some of the information reported in this section draws on Grossbard (2001a) and Beller and Grossbard (2019). The NHE's most important contributions all deal with non-monetized aspects of household decision-making, including decisions regarding household production. The following six categories focus on different principal outcomes of household decision-making. The cited NHE-ers were associated with Becker or Mincer at some point before 1980 (when NHE outcomes were central to the research agendas of Becker and Mincer) and published research on at least one of these outcomes within fifteen years of their association with Becker or Mincer. Many of the students' publications were based on their Ph.D. dissertation.

1. Consumption

The NHE introduced the time cost of consumption into what was standard economic analysis prior to the 1970s.⁸ This contribution was spearheaded by analyses of consumption's cost of time by Mincer (1963) and Becker (1965). A fellow faculty member at Columbia, Kelvin Lancaster, published a theory of consumption based on the characteristics approach which was compatible with that of Becker and Mincer

⁷ The NBER (National Bureau of Economic Research) is a prestigious organization central to the economics profession (see <https://www.nber.org/about-nber>).

⁸ The economic analysis of consumption included the Ph.D. dissertation of Hazel Kyrk from the Economics Department at the University of Chicago in 1920, which added a social psychological perspective to the economics. The dissertation won the coveted Hart, Schaffner and Marx award and was published as a book in 1923 under the title *A Theory of Consumption* (Beller and Kiss 2001). The book was reprinted by Arno Press in 1976.

(Lancaster 1966). Students of Becker or Mincer at Columbia who contributed articles on this topic include John M. Owen (e.g. 1964, 1969a, 1971), Gilbert R. Ghez (e.g. Ghez 1970; Ghez and Becker 1974), Robert T. Michael (e.g. Michael 1972, 1973; Michael and Becker 1973), Haim Ofek (e.g. Ofek 1971; Hochman and Ofek 1977), and Anna Sachko Gandolfi (see Sachko Gandolfi 1975, 1986).⁹

2. Labor Supply of Married Women and Gender Wage Differentials

The NHE offered new perspectives on labor economics, with a focus on the labor supply of married women and gender differentials in earnings. Becker (1965) and Mincer (1962, 1963) examined how households chose between allocating time to household production and working for commercial firms or government. Important work on this topic was contributed by James Heckman in his innovative econometric studies on the labor supply of married women introducing the “Heckit” methodology (e.g. Heckman 1974; Heckman and Ashenfelter 1974). Here, Heckman is included among the NHE-ers, for he was a colleague first of Mincer at Columbia University and then of Becker at the University of Chicago. Becker, Mincer, and Heckman also all worked as research fellows at the NBER in the early seventies. Furthermore, Heckman regularly attended the labor workshop then run by Mincer in the early 1970s and then Becker’s applications workshop at the University of Chicago.

Other NHE work on labor supply of women and wages was published by James P. Smith, Becker’s first student at Chicago (e.g. Smith 1977, 1979), and by Randy J. Olsen (1977), a participant in Becker’s workshop at Chicago. Another Chicago Ph.D. whose principal adviser was Becker, Michele Riboud, wrote a thesis on gender differences in earnings that is related to the NHE (Riboud 1977). In his 1978 thesis, Thomas MaCurdy wrote two essays about the life cycle. One of these essays is related to his 1980 article with his principal thesis advisor, James Heckman: “A Life Cycle Model of Female Labour Supply” appeared in the *Review of Economic Studies* (Heckman and MaCurdy 1980). At least two Chicago students who did not write NHE dissertations wrote articles related to labor supply and household production: Claudia Goldin published on

⁹ Sachko Gandolfi showed that contributions to household production influence the purchase of life insurance by men and women.

women's labor supply and household production (e.g. Goldin 1977, 1979),¹⁰ and Christopher Robinson who published e.g. Robinson and Tomes (1982) and Carliner et al. (1984).

The following students of Becker or Mincer at Columbia wrote about labor markets and wages, writing theses connected to the NHE: Solomon Polachek (e.g. Mincer and Polachek 1974; Polachek 1975), Marjorie Honig (e.g. Honig and Hanoch 1980), and Nancy Garvey who wrote a dissertation on labor supply and earnings of young women (published in 1980). Work on women's labor force participation was also published by June O'Neill, a student of Becker and Mincer at Columbia who wrote a thesis on a non-NHE topic (e.g. O'Neill 1981).¹¹

The work of Mincer and Ofek (1978) on family migration is also related to labor market analysis. Becker (1965), Mincer (1963), and their students Reuben Gronau (1967) and John D. Owen (1969b) also examined the economics of commuting time and tied home production to the study of transportation. Subsequently, Gronau wrote influential articles on the labor supply of married women, an application of NHE ideas to labor economics (Gronau 1973, 1977).

3. Health Production at Home

The NHE spearheaded analyses of health production at home. At NBER's New York office, Becker and Mincer were colleagues of Victor Fuchs who is also a major innovator in health economics (e.g. Fuchs 1975) and is part of the NHE as defined here. A major innovator in this area was Michael Grossman, a student of Becker and Mincer at Columbia (see e.g. Grossman 1972; Anderson and Grossman 2009). Other students of Becker and Mincer at Columbia have contributed to health economics in the 1970s and early 1980s, namely Barry Chiswick wrote about the choice between health care provided at home or in hospitals (e.g. Chiswick 1976a, 1976b) and Linda N. Edwards on the health of children and adolescents (e.g. Edwards and Grossman, Shakotko et al.

¹⁰ However, her doctoral thesis, completed in 1972, dealt with the economics of slavery and her principal adviser was Robert Fogel.

¹¹ O'Neill completed her dissertation at Columbia in 1970. It dealt with income and education effects on regional migration, not a NHE topic according to the definition used here.

1981). Mincer student in the 1970s, Ann P. Bartel, authored a few articles in health economics after she completed a dissertation on a topic not related to the NHE (Bartel and Taubman 1979, 1986). Chicago graduates Jacques Silber and Richard Steckel have written in the area of health economics after they had graduated: Silber published e.g. Berrebi and Silber (1981) and Silber (1982), while Steckel published e.g. Margo and Steckel (1983) and Steckel (1986, 1988).¹²

4. Economics of Fertility

The NHE developed the economics of children-related outcomes, with an emphasis on fertility and parenting (discussed below). Fertility is a topic covered in Becker (1960, 1965) and Mincer (1963). An early article by James Heckman on this topic is Heckman (1973). Students of Becker, Mincer or other faculty associated with the NHE have written on fertility both at Columbia and at Chicago. At Columbia, the following students produced dissertations related to fertility: Morris Silver who wrote a dissertation on birth rates and business cycles (Silver 1964) and was among the early participants of the Becker and Mincer labor workshop (e.g. see Silver 1964, 1965, 1966); Cynthia B. Lloyd's dissertation on child subsidies (Lloyd 1972)¹³; and Sue Goetz Ross (1974) who wrote a dissertation on the timing and spacing of births. A student of Mincer and Heckman at Columbia in the 1970s, Mark Rosenzweig (1973), wrote a thesis on population change in the USA, which includes fertility. He did considerable further research on related themes, including Rosenzweig and Evenson (1977) and Rosenzweig and Wolpin (1980).

At the University of Chicago, fertility-related research was produced by the following students of Becker: Dennis De Tray (1972), Alan Freiden (1974), Indra Makhija (1977), and Nigel Tomes (1978). In addition, fertility was the main topic of investigation in theses written under the supervision of Marc Nerlove (in the case of Jacques Silber's thesis, Silber 1975) and Robert Fogel (in the case of Richard Steckel 1977). Both Silber and Steckel presented their research in Becker's workshop. Within

¹² More about Silber and Steckel is found in the next subsection.

¹³ Lloyd continued to publish further work related to the NHE (e.g. Lloyd and Niemi 1979; Lloyd et al. 1979) and to work on questions related to household economics, especially while employed by the Population Council.

fifteen years of graduation, Steckel also published on the economics of mortality using historical US data (Steckel 1986, 1988).

5. Economics of Parenting

Becker (1967) can be viewed as the pioneer NHE article on the economics of parenting, including parental investments in their children's human capital. Years later NHE-er James Heckman contributed a substantial amount of research on this topic, including Heckman et al. (2014). Students of Becker and Mincer in the period we study also wrote on this theme. At Columbia, Arleen Leibowitz's thesis stands out in that it analyzed and measured parental inputs into the production of children's human capital (Leibowitz 1974). The dissertation of Linda Nasif Edwards' (1971) about teenagers' demand for schooling also belongs here. Later, she authored a paper on child health with Michael Grossman (Edwards and Grossman 1979). Heckman's first Ph.D. student at Columbia, Andrea Beller (1974) wrote a dissertation on a non-NHE topic. However, within 11 years of graduation, she embarked on two long-term projects related to the NHE, one on child support payments with John W. Graham¹⁴ (e.g. Beller and Graham 1985, 1993; Graham and Beller 1989) and the other on family structure and children's outcomes (e.g. Krein and Beller 1988).

Chicago students also wrote about parenting in the 1970s, which is the period during which Becker and Lewis (1973) published an article about the trade-off between quantity and quality of children. H. Gregg-Lewis regularly attended Becker's workshop in the first part of the decade, until he moved to Duke University. De Tray (1972) and Nigel Tomes (1978) wrote about parental investments in their children's quality and fertility, and Lawrence Kenny's (1977) dissertation is about parental demand for child quality and the production of child quality. Indra Makhija's (1977) thesis is also about parenting: it looks at the nexus between child labor, fertility, and children's school attendance in the context of rural India.

6. Economics of Marriage

¹⁴ John W. Graham had been a student of Marc Nerlove's at Northwestern University, where Nerlove moved when he left Chicago in the mid-1970s.

The NHE introduced the economics of marriage and marital sorting, propelled by Becker (1973), an article published after Becker's move to Chicago.¹⁵ Prior to this move, the following students of Becker or Mincer at Columbia wrote about marriage or divorce (in chronological order): Morris Silver (1965, 1966), Shirley B Johnson (1967), Federica Pickford-Santos (e.g. Santos 1970, and Ofek and Pickford-Santos 1979), Elizabeth Durbin (1971, 1973), Marjorie Honig (1971), Robert Reischauer (1971), and Elizabeth Landes (e.g. Becker et al 1977 and Landes 1978). Of these, Honig is the only one who pursued an academic career, specialized in an area related to the NHE for most of her career, and accumulated a substantial publication record.

Two of Becker's Chicago students from the 1970s contributed the first econometric studies of marriage using large individual data sets: Michael Keeley and Amyra Grossbard (now Shoshana Grossbard). The outcomes they study are age at marriage (Keeley 1974, 1977, 1979) and number of wives (Grossbard 1976, 1978). Other students who wrote about marriage and studied with Becker at Chicago in the period under study are Alan Freiden (1974), who published an article based on his dissertation (Freiden 1974) explaining state-level marriage rates, Edy L. Kogut (1972), Walter Wessels (1976), and Ivy Papps whose dissertation was not related to the NHE, but who published a book popularizing the economics of marriage (Papps 1980).

What is unique about the economic models of marriage and divorce (including Becker 1973) is that the decision-makers are mostly individuals, in contrast to the models about the five prior outcomes in which multi-person households typically make decisions as if they were a single unit.¹⁶ Becker hypothesized that how household resources are distributed toward each member's assignable consumption is a function of marriage market conditions.¹⁷ Keeley and Grossbard built on Becker's marriage market analysis, adapting more elements of micro-economic modeling

¹⁵ When awarding him the Nobel prize in 1992, the Royal Swedish Academy of Sciences highlighted Becker's "models of behavior of the family (or household), including distribution of work and allocation of time in the family."

¹⁶ Becker's marriage market model is one of the multiple theoretical models of marriage contained in this theory of marriage. More on Becker's various theoretical models of marriage is found in Grossbard (2010).

¹⁷ Many of the themes addressed by Becker in these individual articles were included in Becker's (1981) *Treatise on the Family*.

into analyses of marriage-related outcomes. Keeley's (1974, 1977) search theory of marriage has individuals comparing various "marital wages," in analogy with models of search in labor markets.¹⁸ In the context of an African polygamous society Grossbard (1976) also pursued the analogy between marriage markets and labor markets, conceiving of wives as household production workers getting paid for their work by husbands, the pay often taking the form of consumption goods bought by husbands for the benefit of a wife.

Starting in the 1980s a number of economic models elaborated on Becker's idea that factors such as the sex ratio or each household member's income are expected to affect individual outcomes of multi-person households. This includes NHE-related models analyzing how conditions in markets for workers in household production may influence participation in the *labor force* and *fertility* (Heer and Grossbard-Shechtman 1981) and Grossbard-Shechtman (1984, 1993) and contributions from outside the NHE as defined here, including bargaining models dealing with intra-household distribution of consumption goods (e.g. Manser and Brown (1980) and McElroy and Horney (1981)) and models of intra-household distribution of consumption based on Samuelson's (1956) consensual approach such as Chiappori (1988) and Apps and Rees (1988).

3 FIVE OBSERVATIONS SIXTY YEARS AFTER THE NHE STARTED

As steps toward the assessment of the NHE's impact on economics as a discipline we offer the following observations related to the accomplishments of the NHE. This is far from a comprehensive and systematic survey or a systematic assessment.

OBSERVATION 1. One way to assess the value of the NHE is to observe that its founders, Gary Becker and Jacob Mincer, and some of its most talented contributors were awarded prestigious prizes or otherwise received public recognition. Gary Becker was awarded the Nobel Prize in economics (in 1992), and the Nobel committee mentioned some of his contributions to the NHE in awarding him the prize. Jacob Mincer got the honor of being awarded the first IZA prize in labor economics in 2002

¹⁸ Becker et al. (1977) also contains a search model of marriage.

as well as the first career achievement award for lifetime contributions to the field of labor economics of the Society of Labor Economists in 2004. That prize was then named the Mincer award. In addition, both Becker and Mincer were named fellows of the American Academy of Arts and Sciences and of the National Academy of Sciences.

Other NHE-ers who were awarded the Nobel Prize in economics are T.W. Schultz (in 1979) and James Heckman (in 2000). Heckman, T.W. Schultz and NHE-er Victor R. Fuchs were also elected to the American Academy of Arts and Sciences, and Heckman and Schultz to the National Academy of Sciences.

OBSERVATION 2. The second observation focuses on the study of consumption (and savings) and labor economics, items 1 and 2 on the list of NHE topics of interest. These outcomes have been of central interest to economics at least since the early twentieth century. NHE innovated in these areas by bringing in household production. These innovations have had a considerable impact on various fields of economics, including labor economics, macro-economics, agricultural economics, and development economics.

2.1. The study of labor supply and wage differentials has been transformed by the work of Becker (1965), Mincer (1962), Heckman (1974), and a number of other NHE-ers who have done research on that topic. Economic research on wages has also been deeply influenced by this tradition.

2.2. NHE ideas regarding the modeling of consumption were integrated within macro-economics. Indicative of this integration are articles about household production in macro-economics such as Benhabib et al (1991), Aguiar and Hurst (2005), and Ramey and Francis (2009).

2.3. NHE ideas have enriched agricultural and food economics, as is evident e.g. from Ed Taylor and Irma Adelman (2003) on agricultural household models and George Davis' (2014) survey article on production of food at home and food consumption.

2.4 NHE ideas have had an impact on development economics, as evident from the role that NHE-er Mark Rosenzweig has played in the growth of development economics as a field of economics (in his capacities as author, dissertation advisor and journal editor). Examples of how some models by NHE-ers have offered micro-economic

foundations for models of economic growth can be found in a recent survey by Manuel Santos Silva and Stephan Klasen (2021).

The other four outcomes on the list found in the previous section—health, fertility, child outcomes, and marriage—did not correspond to existing fields of economics prior to the birth of the NHE.¹⁹ Today, some of these new fields have been integrated into the discipline of economics. Some NHE-ers deserve credit, not only for contributing to the new fields, but also for helping toward their integration into mainstream economics. The following observations expand on that.

OBSERVATION 3. Another way of assessing the success of new research topics developed by the NHE is to check whether the NBER has channeled any of its resources in that direction. Of the four areas of investigation spearheaded by the NHE the first—health economics—became associated with its own program or project at the NBER. The NBER also has a program called the economics of children, which includes both the economics of fertility and the economics of parenting. As for the fourth, so far, the NBER does not have a program on the economics of marriage and other relationships.

In 1980, *health economics* became the first NHE-inspired application that obtained its own program at the NBER, a program that focuses on the determinants of the health of the population. Fuchs decided he did not want to co-direct the program a few years later, so Grossman became the only director of this health program. Grossman remained in charge until 2020.²⁰ As mentioned in Beller and Grossbard (2019), the roots of this program go back to an NBER group named the Center for the Economic Analysis of Human Behavior and Social Institutions (CEAHBSI, also see Fuchs 2004).²¹ This group, formed when the NBER's headquarters were in New York, was headed by Victor Fuchs from 1968 to 1978. Its research associates included NHE-ers Becker,

¹⁹ The topic of fertility had been addressed by economists many decades before the birth of the NHE, e.g. by Malthus. However, it was not addressed by mainstream economists for most of the twentieth century.

²⁰ As of December 2020, he still directs NBER's New York Office. Another health economics program at NBER focuses on the functioning of markets for health insurance and medical care.

²¹ Victor Fuchs, Michael Grossman, and James Poterba contributed to this paragraph via personal emails.

Mincer, and Michael Grossman. The group dealt not only with health but also with other outcomes related to the NHE: fertility and investments in children's human capital. This center was dismantled in 1978 when Martin Feldstein became president of the NBER, succeeding John Meyer.²²

The *economics of children* (including fertility and children's outcomes) was included in the research scope of the NBER when Meyer was still president, for fertility and parental investments in children's human capital were included among the topics studied within the framework of the CEAHBSI group. As a result, these themes—as well as the economics of marriage—were addressed during two conferences the NBER organized on economics of the family in 1972 and 1973 (see T.W. Schultz 1974, a volume published by the NBER). A decade later, in 1983, the NBER organized a conference on Income and Wealth at which Beller and Graham presented their first article on child support payments (Beller and Graham 1985); the conference led to a published volume of papers in the series of Studies in Income and Wealth (David and Smeeding 1985). However, another 10 years went by between that 1983 conference and 1993, the start of the children's program at the NBER. The new program was originally directed by Alan Krueger, then by Jonathan Gruber, and since 2009 by Janet Currie. In 2015 Anna Aizer joined her as co-director. No NHE alumni appear among the NBER's children's program's leadership.

Until its 1978 demise, the CEAHBSI at the New York NBER also facilitated research on the economics of marriage. So far, since its move to Cambridge the NBER has not organized projects on the theme of *economics of marriage and divorce*. This suggests that in 2020 the NBER considers health economics and economics of children as applications of economics closer to the core of the economics profession than the economics of marriage or divorce.

OBSERVATION 4. The dismantling of the Center for the Economic Analysis of Human Behavior and Social Institutions (CEAHBSI) in 1978 may have left a vacuum that needed to be filled. This helps explain the birth of a number of organizations facilitating research on some of the applications of economics that had been pioneered by the NHE-ers.

²² More on the history of the NBER can be found at <https://www.nber.org/about-nber/history>.

In the area of health economics, the following professional organizations were created: the American Society of Health Economists (ASHEcon), the International Health Economics Association (iHEA), and the European Health Economics Association (EuHEA); and the following journals started publication (starting dates in parentheses): *Journal of Health Economics* (1982), *Health Economics* (1992), the *European Journal of Health Economics* (2000), *Economics and Human Biology* (2003), and the *American Journal of Health Economics* (2014). The first two originated in the period 1978–1993, when the NBER did not have a health economics program.

Despite their relatively young age, these health economics journals get quite a few citations. Consequently, health economics is one of the special fields included in a recent article published in the *Journal of Economic Literature* that reviews citations from different fields of economics (Angrist et al. 2020). In contrast, that same article does not explicitly mention contributions to the economics of children or the economics of marriage.

A number of new organizations and journals that deal with the economics of children have sprung up in recent years.

- a. ESPE, the European Society of Population Economics, was founded in 1986. It is connected to the *Journal of Population Economics*.
- b. The Center for Household, Income, Labour, and Demographic economics (CHILD) organizes research on the impact of family and educational policies on child outcomes, fertility, and labor market decisions. It was founded in 2000 by Daniela del Boca at the Collegio Carlo Alberto in Torino, Italy. The organization has been influential in the USA and UK, as is apparent e.g. from its inclusion of researchers from universities such as New York University, University College London, University of Pennsylvania, University of North Carolina Chapel Hill, York, Royal Holloway, and Stanford.
- c. BREAD, the Bureau for Research and Economic Analysis of Development was founded in 2002. BREAD has fellows who often write on non-monetized outcomes covered by the NHE, including fertility, investments in children's human capital, marriage, and divorce. One of its first fellows was NHE-er Mark Rosenzweig, who serves on the organization's executive committee. Many other BREAD fellows have contributed to the economic literature on the economics of children or the economics of marriage.

- d. The *Review of Economics of the Household* (REHO), started in 2003 by one of us (Shoshana), has strong connections to the NHE. It publishes articles on all six topics covered by the NHE. In addition, it also publishes articles on a variety of household decisions regarding consumption, savings, gambling etc., that don't involve household production. The NHE's founders—Gary Becker and Jacob Mincer—endorsed the original proposal to start the journal and served on its advisory board until they passed away. Also connected to the journal in one or the other capacity are (were) NHE-ers Barry Chiswick, Victor Fuchs, Michael Grossman, James Heckman, Jacob Mincer, and Solomon Polachek. Other students of Becker or Mincer who serve or have served on the board include Andrea Beller, Glenn Blomquist, and Carlos Seiglie.
- e. The *Journal of Human Capital* was founded in 2007 by Isaac Ehrlich, who was a student of Becker and Mincer at Columbia University. It publishes some articles on parenting and family economics.
- f. In 2010, NHE-er James Heckman established the Human Capital and Economic Opportunity (HCEO) global working group at the University of Chicago, promoting further work on the economics of parenting and children and a number of other topics related to economics of the family. Its main activities are conferences, a working paper and policy paper series, and a summer school.
- g. SEHO, the Society of Economics of the Household (founded in 2017 by Shoshana Grossbard), organizes yearly conferences on the topics covered by the *Review of Economics of the Household*.

There are no organizations exclusively dedicated to the economics of marriage, divorce, and cohabitation, but journals and organizations listed in this sub-section have offered some degree of support to researchers studying marriage, cohabitation, and divorce.

In conclusion, in this respect too health economics appears to be in better shape than other branches of the NHE, such as the economics of children and the economics of marriage.

OBSERVATION 5. This observation deals with the individual success of economists who (a) completed a doctoral dissertation between 1960 and 1980 at Columbia or Chicago that focused on one of the six

outcomes central to the New Home Economics,²³ (b) had an academic career for most of their work life past graduation during which they further addressed NHE-related topics of research,²⁴ and (c) produced a substantial amount of publications. This list includes the following ten Columbia students who graduated between 1964 and 1975 (in alphabetical order): Edwards, Ghez, Gronau, Grossman, Honig, Leibowitz, Michael, Ofek, Polachek, and Rosenzweig,²⁵ and five Chicago students who graduated between 1972 and 1978 (in alphabetical order): Grossbard, MaCurdy, Randy J. Olsen, James P. Smith and Richard Steckel (see Sect. 2 above for more details about these individuals).²⁶

Of these fifteen students, many are active in research; most retired from teaching or passed away. Next, we report their current or last title and whether they are still alive (in alphabetical order): Linda Nasif Edwards (Professor of Economics Emerita, the Graduate Center, City University of New York), the late Gilbert Ghez (was a professor at Roosevelt University in Chicago), Reuben Gronau (Professor Emeritus at Hebrew University in Jerusalem), Shoshana Grossbard (Professor of Economics Emerita and scholar-in-residence at San Diego State University and editor-in-chief of the *Review of Economics of the Household*), Michael Grossman (Distinguished Professor of Economics Emeritus at the Graduate Center, City University of New York and New York Office Director and Research Associate at the NBER), the late Marjorie Honig (Professor, Hunter College and The Graduate Center, City University of New York), Arleen Leibowitz (Professor Emerita at the department of public policy in the UCLA Luskin School of Public Affairs),

²³ The following list is more restricted than the list of students mentioned in Sect. 2, where graduates who had trained with Becker or Mincer and wrote dissertations on other topics, and later engaged in NHE-related research, were also included.

²⁴ An academic career implies affiliation with universities or research organizations such as RAND for most of their working years.

²⁵ The following Columbia students did not spend most of their post-doctoral years pursuing an academic career: Elizabeth Landes and Federicka Santos. Columbia graduate who continued an academic career but did not publish much that is related to the NHE: Morris Silver.

²⁶ Chicago graduates who left academia at a relatively early stage in their career: Alan Freiden, Michael Keeley, Edy Kogut, and Nigel Tomes. Chicago graduates who continued an academic career but did not publish much that is related to the NHE: Anne Williams, Lawrence Kenny, Jacques Silber, John Turner, and Walter Wessels. The whereabouts of Indra Makhija are unknown.

Thomas E. MaCurdy (Professor of Economics at Stanford University and Senior Fellow at the Hoover Institution and the Stanford Institute for Economic Policy Research), Robert T. Michael (the Eliakim Hastings Moore Distinguished Service Professor Emeritus at the Harris School of Public Policy and researcher at NORC, University of Chicago), Haim Ofek (Professor Emeritus at SUNY-Binghamton), Solomon Polachek (Distinguished Professor at SUNY-Binghamton), Mark Rosenzweig (the Frank Altschul Professor of International Economics and director of the Economic Growth Center at Yale University), and James P. Smith (Senior Economist Emeritus, RAND).

This sample of fifteen started with a similar background—training in NHE under the guidance of Mincer, Becker, Heckman, or another NHE-linked professor in the period 1960–1980, spent most of their adult life in academia and wrote extensively on the following NHE applications: health economics, labor supply and wage determination, consumption economics, economics of children, or economics of marriage. Eleven of these academic economists are men and four are women.²⁷ Eleven are US-born and four were born in Western Europe (Ghez and Grossbard) or Israel (Gronau and Ofek).

The list expands if we also consider graduates of Columbia or Chicago with the same credentials as the above group of 15, but who did not write a thesis related to the NHE. In that case we add the following Columbia students: Andrea Beller (Professor Emerita, University of Illinois at Urbana-Champaign), Barry Chiswick (Professor, Department of Economics, George Washington University), June O’Neill (Professor Emerita, Baruch College and the Graduate Center, CUNY). We also add the following Chicago students: Claudia Goldin (Professor, Department of Economics, Harvard University) and Christopher Robinson (Professor, University of Western Ontario, Canada).

4 CONCLUSIONS

Sixty years have passed since the birth of the NHE, a school of economic thought that was founded by Gary Becker and Jacob Mincer and that placed household production at its center. It generated economic analyses regarding the following principal outcomes: consumption, labor

²⁷ More on gender and the Columbia labor workshop (which was not limited to NHE) in Grossbard-Shechtman (2001a) and Beller and Grossbard (2019).

markets, household decisions regarding health, children (fertility and children's human capital), and marriage. This article listed some of the major researchers associated with the NHE and some of their principal publications. Many were students of Becker or Mincer at Columbia or Chicago. Some were students of James Heckman or other faculty associated with Becker or Mincer.

We made a few observations that help assess the success of the NHE as a school of thought and of some of the students who graduated at the height of the NHE and specialized in this area. In sum, the following was observed: (1) Becker, Mincer, and some others associated with the NHE have received major awards, in part in recognition for ideas associated with the NHE; (2) the NHE's contributions to the study of consumption and labor markets have been well-integrated into mainstream applications of economics, two outcomes that have been of interest to economics at least since the early twentieth century; (3) NBER inclusion of new applications of economic investigation spearheaded by the NHE (applications to household health and to children-related issues) can be viewed as a testimony to the NHE's success. This is especially true in the case of health economics, as NHE-er Michael Grossman has played a central role in the growth of the health program at the NBER, but also holds to some degree in the case of the economics of children, an NBER program without much direct input from NHE-ers; (4) the NHE may also have encouraged the growth of other organizations promoting research in economics on households and families; and (5) the academic success of some of the students of Becker, Mincer, and Heckman who specialized in NHE can be partially interpreted as indicators of the NHE's success.

There is need for more research on the impact of the New Home Economics and the household production concepts it placed at the center of economic analyses of decisions made in households. It is hoped that further research will shed more light on this impact.

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PART VI

Behavioural Economics and Public Policy



Crossing the Valley of Death Between Academic Research and Effective Policy: The Role of Behavioral Economics

Shlomo Maital

1 INTRODUCTION

In his research, John Tomer had laser-like focus on relevance and clarity. In reviewing his list of publications, I found these topics: Intangible capital, organizational capital, how our brain works, Buddhist economics, adverse childhood experiences and poverty, economic decision-making, “nudging,” obesity, productivity, social responsibility, long waves, and many more.

John’s tools were words, not mathematics. He made no Nobel-worthy breakthroughs. But the total body of his work adds significantly to our understanding of economic behavior and how to improve wellbeing—always at eye level, always grounded in the real world, and understandable, mostly jargon-free.

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From its inception some 38 years ago, SABE—Society for the Advancement of Behavioral Economics—sought to apply economics to making the world a better place, based on a deep understanding of human behavior. Over the years, SABE members, economists, and scientists in general have in their research identified challenges in the way society, economy, and polity impact our lives and have offered suggestions for small and large improvements. John Tomer was instrumental in reviving and then managing and leading SABE.

However, as the Yiddish expression goes, we often “spoke to the walls.” If we were to list the winning ideas of science that the political system has utterly ignored, we would need many volumes. As I look back on my own body of work, and that of John Tomer and others, I am struggling to understand why. *Why is there a “valley of death” between the well-founded research and evidence of science and the policies implemented by political leaders? Why do so many good ideas die? Why are so many bad unfounded ideas implemented?*

The concept of “valley of death” has been used widely in a different context, as the often-fatal ‘desert’ between basic scientific research and its commercial applications.¹ I believe that while this particular “valley of death” does exist, it is nearly equaled in destructive impact by the valley of death between research findings and public policy. “Listen to the science,” we hear often. But if policymakers did listen, why would we have to even say this? And if evidence-based policy is as self-evident as evidence-based medicine—why is a self-evident principle so widely ignored?

In this essay, I offer an explanation for the perceived irrelevance of my own discipline, Economics. I will argue that Economics made two wrong turns that together have made its policy prescriptions at best ignored and at worse, destructive when rarely heeded. My case study is the climate change crisis. The solution I prescribe: Behavioral economics, driven by randomized clinical trials.

¹ Valley of death describes a period in the life of a startup in which it has begun operations but has not yet generated revenue. It reflects a startup company’s cashflow burn plotted on a graph. During this period, the company burns up initial equity capital provided by its shareholders and goes bankrupt, before markets can recognize the value of its products and services. Great ideas born in research labs die in the valley of death, before creating value for the people.

2 CLIMATE CRISIS

The world has been aware for an exceptionally long time that carbon dioxide acts like a blanket, warming the world—in fact, since 1856, 164 years ago. In that year, a remarkable woman scientist named Eunice Foote published the results of a clever experiment. She filled glass jars with water vapor, carbon dioxide, and air, respectively, and compared how much they heated up in the sun. “The highest effect of the sun’s rays I have found to be in carbonic acid gas (CO₂),” she reported, in The American Journal of Science (Foote 1856).

Foote’s work was ignored, not the least because she was a woman. But a male counterpart, Thomas Chamberlin, published this finding in 1899:

When the temperature is rising after a glacial episode, the ocean gives forth its carbon dioxide at an increased rate, and thereby assists in accelerating the amelioration of climate.

...In periods of sea extension and of land reduction (base-level periods in particular), the habitat of shallow water lime-secreting life is concurrently extended, giving to the agencies that set carbon dioxide free accelerated activity, which is further *aided by the consequent rising temperature* which reduces the absorptive power of the ocean and increases dissociation.

So, at the very point in history when automobiles with internal combustion engines burning fossil fuels were being invented and produced, science already understood the effect of carbon dioxide on global warming. Close inspection of Fig. 1 below shows that a key inflection point—when global temperatures ceased falling or staying constant and began to rise—coincided with the production of the first Model T cars, by Henry Ford. Atmospheric carbon dioxide (parts per million) and average annual global temperatures track each other almost perfectly. And these two variables have coincided for a very long time.

Foresight was possible. Economic theory might have proposed a carbon tax as early as 1908, when the first of 15 million Model T cars was produced. Or, in 1920, 1930, 1940? But perhaps hoping for foresight is impossibly idealistic. Let us then plead for hindsight policy.

Over a century after the launch of the first Model T car, we have a climate crisis. Let us suppose that the data in Fig. 1 were already being tracked starting in 1880. Suppose also that scientists were regularly updating it. At what point would political leaders and the citizenry and

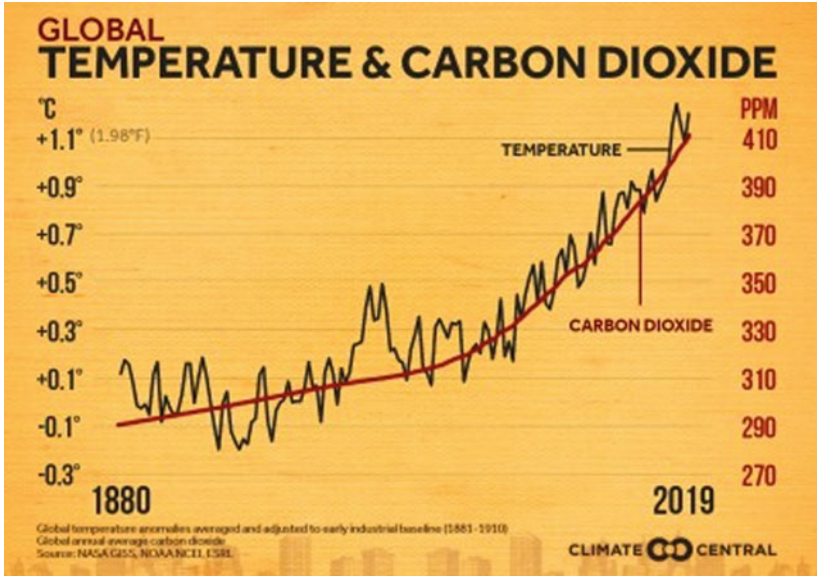


Fig. 1 Global mean temperature change vs. atmospheric carbon dioxide (parts per million), 1880–2019 (Source <https://www.climatecentral.org/gallery/download/global-temperatures-and-co2-concentrations>)

electorate begin to understand that humanity is facing a global warming crisis? In 1954? 1964? 1974? 1984?

How strong does a correlation need to be, together with the causal science underlying it, until humanity widely believes there is need for immediate effective action and policy change and strongly supports such action, even if it means incurrent short-term loss?

And how is it, after the alarm bells sounded by Nicholas Stern and the Stern Report (2006), that in 2020, there is a significant minority of people and their political leaders—who look at Fig. 1 but who do not see it.

3 CLIMATE CHANGE MITIGATION

When were the first global policy actions taken to mitigate carbon emissions and the resulting global warming? When did Eunice Foote's 1856 observation migrate to public policy?

The Kyoto Protocol extended the 1992 United Nations Framework Convention on Climate Change (UNFCCC) that commits state parties to reduce greenhouse gas emissions, based on the scientific consensus that global warming is occurring and it is extremely likely that human-made CO₂ emissions have predominantly caused it. The protocol was adopted in Kyoto, Japan, on 11 December 1997.

Christopher Napoli, writing in the SAIS Review of International Affairs, observed: "At the end of 2012 the commitments under the Kyoto Protocol will expire. As is well known, a majority of countries will not meet their emissions reduction targets, and the agreement has failed to produce significant changes in norms with respect to emissions reduction." (Napoli 2012).

If Kyoto was a failure, what about the Paris Agreements? The Paris Agreement is an agreement, also within the United Nations Framework Convention on Climate Change (UNFCCC), dealing with greenhouse gas emissions mitigation, adaptation, and finance, signed in 2016.

Studies published in *Nature* have shown that as of 2017, "none of the major industrialized nations were implementing the policies they had envisioned and have not met their pledged emission reduction targets...and even if they had, the sum of all member pledges (as of 2016) would not keep global temperature rise well below 2°C."²

4 WHY DON'T PEOPLE TRUST ECONOMISTS?

Pew Research Institute regularly surveys Americans, to determine the degree of their trust in scientists. From 2016 through 2019, there has

² Victor, David G.; Akimoto, Keigo; Kaya, Yoichi; Yamaguchi, Mitsutsune; Cullenward, Danny; Hepburn, Cameron (3 August 2017). "Prove Paris was more than paper promises." *Nature* 548 (7665): 25–27. Bibcode: 2017 Natur.548...25 V. <http://dx.doi.org/10.1038/548025a>. PMID 28,770,856. See also: Rogelj, Joeri; den Elzen, Michel; Höhne, Niklas; Fransen, Taryn; Fekete, Hanna; Winkler, Harald; Schaeffer, Roberto; Sha, Fu; Riahi, Keywan; Meinshausen, Malte (30 June 2016). "Paris Agreement climate proposals need a boost to keep warming well below 2 °C" (PDF). *Nature*. 534 (7609): 631–639.

been a steady rise in trust, already at a high level in 2016. Some 86% of Americans trust scientists “a great deal” or “a fair amount,” up in 2019 from 76% in 2016.³

Economists, in contrast, regularly score very low in public trust. Economists perform much worse on similar trust surveys than scientists, judges, and doctors. A 2017 British survey revealed these troubling findings:

- “Half of the respondents... think that economists express views based on personal and political opinion than on verifiable data and analysis.”
- Nearly two thirds (64%) think that the government should listen to the advice of economists regarding the national and global economy. But when asked what economists do, nearly two thirds of respondents choose forecasting. Only 26% see economists advising government on policies and 33% on industry regulation
- Nearly three quarter of respondents feel that public figures (such as Brian Cox in physics and Sir David Attenborough in natural history) are important for communicating their subjects. When asked to name economists of this kind in the public eye, only around 16% were able to provide any names according to our own analysis of responses. Of all respondents, less than 1% mentioned a researcher as an economist in the public eye and around 6% mentioned an economic journalist.
- Another reason cited for lack of public trust was economists’ inability to speak to the public in understandable plain language.⁴

So—the public believe economists mainly do forecasting. And research shows economists have a worse-than-dismal record at macroeconomic predictions.⁵

³ Source: <https://www.pewresearch.org/fact-tank/2019/08>.

⁴ “Prof Birdi said there was an absence of recognized spokespeople for the economics profession. “I’m not sure economists have found a language to speak to the ordinary public, even though they see economics as a useful secret knowledge that some people have which has not been translated,” he said.” Source: *Financial Times* [<https://www.ft.com/content/52458788-fcc0-11e9-98fd-4d6c20050229>].

⁵ “In February [2019], Andrew Brigden, chief economist at London-based Fathom Consulting, worked out that of 469 downturns since 1988, the International Monetary

I believe there is a clear historical reason for the failure of Economics. Economics took two wrong turns. One wrong turn will take you out of your way. Two wrong turns will get you hopelessly lost.

5 TWO WRONG TURNS

The first wrong turn, in 1890, was embracing the seductive math of Leon Walras and rejecting the pragmatic behaviorism of Alfred Marshall. The second was embracing Lionel Robbins' call to sterilize economics and rid it of all value judgments.

The goal of each wrong turn was to make Economics more “scientific”, interpreted as more mathematical—in order to make a perceived right turn, so economics would be more like the queen of all sciences, physics. The result was in fact to make economics' 20th C prescriptions at best irrelevant, at worst destructive.

Alfred Marshall was a distinguished professor at Cambridge University. He wrote a landmark textbook on Economics. In it, he defined the subject:

Political economy or economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of wellbeing. (Marshall 1890, Opening sentence, Book 1, Chapter 1)⁶

Marshall did not shy away from ethics or value judgments. For example, he wrote: “Although then some of the evils which commonly go with poverty are not its necessary consequences; yet, broadly speaking, the destruction of the poor is their poverty, and the study of the causes

Fund had predicted only four by the spring of the preceding year. By the spring of the year in which the downturn occurred, the IMF was projecting 111 slumps, fewer than a quarter of those that actually happened. In a post on his firm's website, Brigden wrote that while IMF economists monitoring Equatorial Guinea, Papua New Guinea, and Nauru can walk tall for their recession calls, the rest pretty much flopped. “Since 1988 the IMF has never forecast a developed economy recession with a lead of anything more than a few months,” he says. Source: <https://www.bloomberg.com/news/articles/2019-03-28/economists-are-actually-terrible-at-forecasting-recessions>.

⁶ Source: <https://www.marxists.org/reference/subject/economics/marshall/bk1ch01.htm>.

of poverty is the study of the causes of the degradation of a large part of mankind.”

But Economics did not embrace Marshall’s value-laden behavioral pragmatic approach. Instead, economists embraced the mathematics of Walras. As Prof Milton Friedman famously said: We curtsy to Marshall but we walk with Walras. Alas.

Who was Walras? He was the son of a famous French economist, Auguste Walras. Perhaps fleeing from the overpowering shadow of his father, Walras enrolled in the École des Mines de Paris, but grew tired of engineering. Then he is known to have worked as a bank manager, journalist, romantic novelist, and railway clerk—failing in all of these endeavors, before, as a last resort, turning to economics.

In 1874, Walras published his masterwork, taking some of the physics and math he learned at École des Mines and transplanting it to Economics, focusing on the fundamental concept of general equilibrium. The tool of mathematics and the concept of general equilibrium quickly became dominant—even though economic systems are rarely in equilibrium, and even though human behavior can rarely be captured effectively in mathematical models.

But there was a more serious wrong turn to follow, in 1930. It came in a powerful essay by Lionel Robbins, a professor at London School of Economics (Robbins 1932). Ironically, Robbins’ highly influential essay, cleansing Economics of any ethics or moral judgments, came precisely at a time when such value judgments became crucial, when the world entered the disastrous decade-long Great Depression and millions sank into poverty, hunger, and joblessness.

Robbins, like Walras, begins by rejecting totally the study of the “human animal”:

Why the human animal attaches particular values...to particular things is a question which we do not discuss. That is quite properly a question for psychologists or perhaps even physiologists.

Robbins has to admit that people *are* in fact involved with Economics:

...the propositions of analytical economics ... do most unquestionably involve elements which are of a psychological – or perhaps better said a psychical – nature...explicitly recognized in the name by which they are sometimes known – the subjective or psychological theory of value. (p. 86)

Value is indeed subjective and psychological in nature. Yet Robbins firmly discards exploring psychological motivation, stressing that prices and markets are the stuff economists know and study.

But Robbins' heavy guns are mainly trained on ethics:

Economics, says Mr. Hawtrey (a well-known economists of his day), "cannot be dissociated from Ethics. Unfortunately it does not seem logically possible to associate the two studies [Ethics and Economics] in any form but mere juxtapositions. Economics deal with ascertainable facts; ethics with valuations and obligations. The two fields of enquiry are not on the same plane of discourse. Between the generalizations of positive and normative studies there is a logical gulf fixed which no ingenuity can disguise and no juxtaposition in space or time can bridge over. ...Propositions involving the verb 'ought' are different in kind from propositions involving the word 'is'. And it is difficult to see what possible good can be served by not keeping them separate... (pp. 148–149)

Two wrong turns. Eliminate behavior from Economics, and then sterilize it of morals, ethics, good and bad, right and wrong, cancel "ought" forever—and you have a discipline instantly irrelevant and hopelessly lost.

Behavior and values drive policy. Economics, driven by Walras and Robbins, chose not to play.⁷ The resulting Valley of Death becomes both wide and deep—and largely impassable.

6 THE WAY FORWARD: VACCINE VISION

By a miracle, a discipline hopelessly lost now seems to have begun to find its way. Increasingly there *are* economic policy prescriptions that are valid, relevant, understandable—and are being implemented. Somehow, Economics has found its way back to being behavioral, as

⁷ A strong example is the widely-embraced concept of Pareto-optimum: "An allocation is Pareto optimal if there is no alternative allocation where improvements can be made to at least one participant's well-being without reducing any other participant's well-being." Having the biggest possible pie, even if the slices go mainly to the very rich, is Pareto-optimal (you could tax the capitalists to help the poor but let's be real, they skillfully use their resources in "democratic" systems to prevent it). This will get you the greed-is-good global financial collapse of 2008.

Marshall wished, and truly scientific, not via the mathematics of theoretical physics but through the true scientific method for conducting research—randomized controlled trials (RCT).⁸

“To truly influence policy,” Amir et al. (2005) noted 15 years ago, in their influential paper “Psychology, Behavioral Economics & Public Policy,” “researchers will have to invest substantial effort, and moreover this effort will have to be directed differently from standard research practices..... the experimental design should closely resemble reality...”

It took many decades—but the methodology and results of behavioral economics, built on controlled experiments with groups of people, have now become mainstream. And in 2019, three scholars won the Nobel Prize for Economics for their pioneering work in using RCT methodology to build credible policy prescriptions—Esther Duflo, Abhijit Vinayak Banerjee, and Michael Kremer.

In his Nobel lecture, Banerjee asserted rightly that “economics has changed, in part as a result of ...the credibility revolution. And partly because RCT’s have evolved from their initial adherence to the model set up by medical trials.” (Banerjee 2020, pp. 1937–1938).

Consider the global 2020 pandemic and the frantic effort to design and produce a vaccine. Before administering them to the public, vaccines are thoroughly tested in three-stage clinical trials. These random controlled-access trials involve those who receive the vaccine, and a control group that receives a placebo. People are assigned randomly to the two groups and do not know to which group they belong. Very few people would agree to being vaccinated, unless they knew the vaccine had been tested in this manner.

Duflo observes, in her Nobel lecture, that in the UK “economist [are] among the least trusted professionals regarding their own field of expertise... only politicians are perceived with more distrust” (Duflo 2020, p. 1952). Duflo notes she ultimately came to believe that “economic

⁸ A randomized controlled trial is a type of scientific experiment that seeks to reduce certain sources of bias when testing the effectiveness of new treatments; this is accomplished by randomly allocating subjects to two or more groups, treating them differently, and then comparing them with respect to a measured response. One group—the experimental group—receives the intervention being assessed, while the other—usually called the control group—receives an alternative treatment, such as a placebo or no intervention. The groups are monitored under conditions of the trial design to determine the effectiveness of the experimental intervention, and efficacy is assessed in comparison to the control.

science could be leveraged to make a positive change in the world”... through randomized controlled trials.

Methods matter. How economists do research matters greatly. Kremer notes in his Nobel address that “field experiments created an opportunity for a fundamentally different type of economics research that can complement other approaches in important ways” (Kremer 2020, p. 1975).

Economics has undergone a revolution. It is no longer led by those who, like the late legendary J. K. Galbraith, wrote memorably about *The New Industrial State* and claimed proudly that he had never in his life set foot in an actual factory. It is driven by field research, using modified randomized controlled trials, with behavioral foundations, and readily willing to embrace and examine value judgments that drive economic policy. Economists increasingly tackle practical policy issues, such as, how to reduce teacher absenteeism, not by mathematically modeling “lack of desire to come to work”, but by studying teachers in the field and conducting experimental interventions.⁹

7 CONCLUSION

Economics is a behavioral science. So is sociology. Sociologists have never ever used Purell sterilizer to cleanse itself of all ethical and moral terms. Quite the opposite. Sociologists have made such judgments an integral part of their research, as scholars. I believe that sociology has never faced a Valley of Death, like that of Economics, as a direct result. Sociologists never sought to cleanse “behavioral” from their discipline’s value proposition, as Economists did.

This year, 2020, the Nobel Prize in Chemistry was awarded to two remarkable female scientists who invented CRISPR (clustered regularly interspaced short palindromic repeats), a powerful method for editing genes with infinite potential for curing disease and enhancing health. It has been used already to develop tests for COVID-19.

⁹ Duflo and Abhijit Banerjee [they are a married couple, who both teach at MIT] have studied India extensively (Banerjee is Indian born). In 2003, Duflo conducted a trial experiment on teacher absenteeism in 120 schools run by a non-profit group. She encouraged the teachers to photograph themselves with their students each day, and in this way she was able to reduce their absenteeism. The practical intervention was an experiment, that reached empirically valid tested prescriptions, using randomized controlled trials.

The 2020 Nobel Prize for Economics was awarded to two brilliant economists, to Paul R. Milgrom and Robert B. Wilson, “for improvements to auction theory and inventions of new auction formats.” The Milgrom-Wilson auction theory has already found use by governments. But one has to ask, during a global pandemic, is auction theory the main contribution of Economics to dealing with a massive global crisis? CRISPR vs. auction theory? And does no one see the incredible disproportion between what is perceived as Chemistry’s contribution to the world—and that of Economics?

Nobel Prizes reflect the past. Happily, for Economics, in the present, behavior is back. It is unthinkable today that an editor of the *American Economic Review* would refuse even to send for review a submitted article on behavioral economics, rejecting it with a cynical quip.¹⁰

Economics has now begun to cross the Valley of Death, led by those who live and work in the real world, and who subject policy prescriptions to the same degree of scientific rigor that we use for pharmaceuticals and vaccines. And—not a moment too soon.

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¹⁰ In the early 1970’s, my wife Sharona, a school psychologist, and I wrote an article that interpreted subjective interest rates as the willingness to defer gratification and related this to how economic inequality is generated. The AER editor rejected our submission, out of hand, claiming that “the poor are experts at deferring gratification, they do it all the time.” See Maital and Maital (1978).

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Behavioral Economics, Public Policy, and Basic Decision-Making: A Critical Narrative

Hugh Schwartz

Recent enthusiasm for incorporating everyday occurrences into economic analysis seemed to offer a major turning point for public policy, and, indeed, for basic decision-making. An increasing number of analyses and policy recommendations would be based on what actually has taken place and how to move from there to a more desirable, even optimal position.

So it seemed.

But if one looks at what took place in the years of financial crisis and in the presentations of behavioral economics since, that is not what has happened.

The innovators of behavioral economics were in great demand by the media at the beginning of the recent financial crisis, but less so, as time moved on and it became clear that their recommendations were not being followed. Moreover, while guidelines for better decision-making were widespread, these tended to assume that individuals and individual organizations were inclined to have the same biases from what might

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be regarded as desirable outcomes as those indicated by the behavioral economics studies—the experiments and field studies that, in reality, reflected average behavior. Many of those who attempted to behave more rationally—to more nearly optimize possibilities in traditional economic terms—were, as outliers, initially ignored, even as their continuing process of decision-making led them to become leading enterprises in their fields. So the decision-making of the principal enterprises of Jeff Bezos, Elon Musk, and Steve Jobs and the way they adjusted their behavior in light of uncertainties and obstacles was ignored while attention was given to the decision-making of the average enterprise with its emphasis on biases; what was emphasized was how to ignore the worst choices, but not how to rise to the top.

In the case of the economy as a whole, the failings of the overall economy to heed the advice of the behavioral innovators, the explanation may well be the lack of behavioral macroeconomic studies with examples of how moves were made from unsatisfactory to more satisfactory alternatives—if, indeed, such moves were to be found.

In the case of organizations such as producers, despite the proliferation of books and articles on decision-making, there were no good guidelines indicating how an individual or an individual producer should manage successfully. Nor have there been any for the non-profits, even as leaders among non-profits also became important to the decisions of individuals and individual producers—and not always for profit maximizing reasons—for non-profit organizations such as the Federal Reserve, the Department of Agriculture, the Ford Foundation, and community organizations.

The best guide to making good decisions might seem to be to follow the example of the most successful, but while the example of the most successful would be the best guide to making good decisions for those whose objectives were the same as the most successful, it might not serve well for those whose objectives differed even somewhat. Not that presentations of the decision-making of the most successful were generally available.

In any event, no one seriously believes that there is a single best way to do most things, one that applies to all individuals, groups of individuals and organizations under all circumstances.

Decision-making involves many considerations—and the technical aspects are only starting points, important as they may be. Those applying Artificial Intelligence for example need to take care that they do not unthinkingly design systems in which machines replace humans at all

points, or even lead people to consider that that is possible. Other considerations, not merely microeconomic, indicate that the implications for employment, direct and indirect—the macroeconomic aspect—need to be considered. That’s necessary from the point of view of society as well as from the point of view of those adversely affected, who might have to change activities and perhaps take on education for the new tasks, even late in life. Unfortunately, this is likely to involve a good deal of speculation. And the applicability and optimality of the specific AI technology need to be determined—the very first consideration, particularly challenging given all the uncertainties involved. Numerous interviews led Herbert Simon and his colleagues to conclude that search—the search for data and for alternatives—is a first and foremost concern in all decisions. While almost all innovations in AI are likely to represent an improvement over whatever the existing technology was, not all innovations in AI are most appropriate for the activities for which they are first proposed.

For more mundane, everyday decisions, what is “mathematically optimal” should not interfere with what is best for society or for other individuals for whom concern is especially warranted; the latter refers to most family and friends, and others that a given society has designated as worthy of special attention. This is likely to vary from society to society and from time to time.

For many producers, the best guide for economic decisions may well be what a Jeff Bezos or Elon Musk have done in their key enterprises (Not what they have done or do in secondary enterprises, or in their private life, let alone what seems to be technically optimal). Again, assuming that those producers have the same objectives. And that what they do in those key enterprises may approach what is mathematically optimal, as basic economic theory assumes of the enterprises that triumph, insofar as they take account of other individuals and entities and the gains and losses that occur as a consequence to others. The result may approach the mathematical optimality sometimes referred to, though the search problem, noted above, makes it unlikely. And the key enterprises should not be characterized by the biases documented by behavioral economics; that is to say, initially, those key enterprises may be outliers. Outliers—and the early endeavors of Bezos and Musk in their first enterprises clearly did not reflect the findings of experimental economics and field studies—which, in the tradition of good statistical work, did not herald the findings of mere outliers.

In a word, the guidelines for optimal decision-making are indeed complex. This is not what one would expect given the presumably authoritative texts and other writings on the topic.

The message is simple in elementary economics presentations: continue consuming or producing up to the point where costs at the margin do not exceed what is gained, giving priority to those activities in which the gap between gains and losses is greatest. Forget about economies of scale, externalities, family and social obligations, the pain or pleasure that certain activities yield in a dozen different ways under numerous circumstances, and manifold unknowns and unknowables, and we have rather unhelpful guidelines for the real world. It's no wonder that a behavioral economics based on actual observations is finally evolving. While average behavior may provide suitable guidelines for what not to produce in a given market, it may fail to indicate how an individual or an enterprise should behave if he, she, or it hopes to rise to the top. The empirical studies of behavioral economics to date help answer the first goal, but not the second. The latter can only be suggested by considering the process of decision-making by the outliers who triumph.

Three factors explain economic decision-making. First is the underlying conviction of a philosophical or religious movement—the sort of factor which economist John Tomer emphasized. Second is the way in which organizations behave—which may well be influenced in part by those underlying convictions—recently, by what has been termed social responsibility. And third is the way in which individuals behave—indicated by the average results of experimental economics and field studies in behavioral economics. The most accepted contribution of the latter, a “fundamental trait of human nature” according to a leading text—and underscoring what observers have known at least since the time of Adam Smith—is loss aversion, by which is meant that humans tend to value a dollar of losses more than the same amount of gains. While most enterprises appear to be subject to loss aversion, it is not clear that Jeff Bezos' Amazon, Elon Musk's Tesla, or Steve Jobs' Apple have been. In fact, it's clear that they were not subject to loss aversion in the short run. Of course, the significance of loss aversion for decision-making needs to be gauged for each enterprise under a variety of circumstances in order to make decisions as rational or nearly rational as possible (The same holds for all decision-making biases).

After an interesting start, economics increasingly ignored psychological factors (and all others, for that matter). Economists like Thorstein

Veblin, who didn't, were by and large ignored by fellow economists. John Maynard Keynes wrote of animal spirits in the 1930s, but that is certainly not what influenced the profession at the time of the Great Depression. The analysis of decision-making began to take account of other factors after the Second World War though it was not through the influence of economists like James Duesenberry, Harvey Leibenstein, and Herbert Simon, among those who tried to get economics to change its ways. Maurice Allais' proof that even highly knowledgeable people made decisions contrary to the basic axioms of economics did not register.

The major breakthroughs came from another field. Two cognitive psychologists conducted experiments that documented preference reversal, attributing that reversal to the way in which the options were presented. The most influential thrust took place a decade later, with the argument of cognitive psychologists Amos Tversky and Daniel Kahneman in a leading economics journal; they indicated that most people made decisions based on *changes* in their wealth (not the more rational, overall *level* of their wealth) and they revealed this, not by probabilities, but by what they termed, prospects (A similar argument regarding wealth was made by an economist several decades earlier, but though he later favored a behavioral approach, he was honored by the profession for refining the more traditional focus of the discipline). Prospects were defined as a transformation of probabilities by heuristics, a process which was determined by human experience. Such a definition allowed for differences in the determination of decision-making, even given the same data.

Psychologists made other findings as well. Among them, they pointed out that individuals sought data that confirmed their initial conclusions, that they were inclined to affirm familiar associations rather than larger categories that included the former (the conjunction bias), that people tended to attribute to smaller samples the well-established statistical properties of larger ones, that they tended to overlook the tendency of outcomes to regress to the mean, that they tended to fail to recognize the general superiority of the formulae of experts to subsequent, less scientific judgments by those same individuals, and that people tended to reveal overconfidence. All of these, as well as other factors, influenced the decision-making of the average individual.

Behavioral economists contributed many findings as well. They noted the tendency of most individuals to include irrelevant sunk costs in the

calculations that led to decision-making, the tendency of one's endowment to influence risk preference (and the decision whether to hold property off the market or to price it on the high side), the valuation of place orderings, the importance of framing, the phenomenon (and unevenness) of diminishing sensitivity, the different attitudes toward earned and wind-fall gains, the tendency toward (generally irrational) procrastination and the consequences of mental accounting by which institutions were taken into account, overlooking the fungibility of money. The growing cadre of behavioral researchers pointed to a conservative, status quo bias, they observed that forceful presentations tended to influence one's decisions even with unchanged data, they noted that experience tended to cause individuals to reason in the same manner as before, irrespective of the success of the earlier efforts, they indicated that the state of mind and the level of general competence exercised an undue influence, and they observed a Winner's Curse whereby knowledgeable individuals, perhaps successful in previous bidding competitions, tended to pay what can only be regarded as an excessive amount for many of their victories. These and other general tendencies were explained by heuristics (rules of thumb) with various biases to rational procedure. Pattern recognition also was cited as a way in which experts approached decision-making. These findings were based on the average of individual behavior—which it was assumed applied to all behavior.

The thinking of behavioral economics led to many empirical exercises in behavioral finance. Impetus to the latter also was stimulated by a study which revealed that the movement of stock prices greatly exceeded the changes in the discounted value of expected dividends, on which, rationally, they would have been supposed to be based. Subsequent studies showed that individuals revealed a disposition bias in the buying and selling of stocks, a tendency to avoid the subsequently well-documented rationality of buying losers and selling winners, bandwagon and feedback effects, and a presumably excessive premium for stocks as against bonds. Again, these studies were largely of individual responses with the results generalized to all behavior.

Further empirical efforts have dealt with currencies, addiction, alternative ways of discounting, arbitrage, retirement, default systems, fairness, happiness, and measures for reducing irrational decision-making. What has emerged most clearly is that much decision-making is not rational in traditional economic reasoning (though, as Robert Frank has observed,

some of that “irrational” decision-making is intended, and takes societal influences into account).

A second, much less explored area of decision-making is by organizations—producers, to begin with, but also investors and many types of non-profits. To a degree, it is valid to assume that the “biases” from rational decision-making revealed by individuals also apply to organizations, but there are important exceptions.

Among producers and investors, some outliers are not subject to the same biases as individuals, and may not concern themselves for their fellowman nor society as a whole, at least in their key enterprises (irrespective of how they behave in other enterprises and in their private lives). This approach may result in their pursuing textbook maximization more closely—or they may make decisions that involve biases different from those of the average of individuals in the behavioral economics studies. In either case, they would be outliers, and in those situations in which they follow textbook maximization successfully (or most nearly successfully) they may come to be more important than before. Consider the cases of Steve Jobs, Elon Musk, and Jeff Bezos.

Non-profits also may deviate from the decisions of individuals. They may pursue goals that differ from those of individuals, and some may be led by charismatic individuals with their own agendas (and biases), and they may be followed by others with similar agendas and biases. The non-profit organizations may take account of certain objectives of society and this may lead them to become more important, at least temporary. Or, the newly adopted guidelines may prove to be a disaster—but their biases may well differ from the announced objectives and biases of individuals.

There is a third type of decision-making—that is guided by philosophical or religious dicta (which may be incorporated by non-profit organizations but may be independent of them as well). Such outside forces may influence the decisions of both individuals and organizations and may modify some of the results considered above. Some corporations founded and still heavily influenced by certain religious or other philosophical views may reflect this third type of decision-making, at least in some aspects, in certain periods of time (This is also true of some individual decision-making). Such “controlled” decision-making has often been alleged, though few studies have attempted to seriously compare decision-making guided by outside forces with what have emerged in their absence, and comparing results with a hypothetical may not be a particularly rewarding activity.

Experimental economics and field studies have done an admirable job in dealing with decision-making by individuals in dealing with the ways in which average human behavior fails to abide by traditional economic rationality. A wide variety of groups and situations have been subjected to experiments and many real-life decisions have been examined. The result has been to provide average rules of thumb, with an indication of the deviations from what would traditionally be characterized as rationality. This has usually been referred to as the heuristics and biases approach (an alternative, the fast and frugal heuristics approach, is subject to many of the same observations), and there has been a growing literature on how to reduce biases and improve decisions (promoted particularly by nudge examples). Actual decision-making processes, even by the most successful, have been ignored, with no analysis offered on how the decisions of some of those who were once among the outliers, came to be sufficiently among the most successful that they became industry leaders.

Much less has been undertaken concerning organizational decision-making. What has been done, primarily by interviews with producers, has been largely with the objective of determining rules of thumb that apply generally—even though there is reason to doubt that common rules of thumb could be useful in describing optimal decision-making for a large number of enterprises and under a wide variety of circumstances due especially to differences in objectives and differences in search requirements.

Even less has been done for the decision-making of non-profit organizations. We really do not know how most of the latter make their decisions, and even where the decision-makers come close to the best way of proceeding, how they get those who do not make the decisions to go along with those decisions. Nor does there seem much professional interest in doing either.

Where there are major costs to responses that reflect strong biases and these correspond to behavior that is common to a wide variety of the objectives of individuals and organizations, it is in the interest of society to reduce those costs by discriminating against those individuals and organizations who make decisions that lead to the objectionable behavior, perhaps by nudging mechanisms, perhaps by direct penalties, and by favoring those who make decisions favorable to the objectives sought by society. Pollution is such an example but this approach may fail to cover many areas of decision-making. Indeed, there is no clear societal view in the case of many major issues (of which climate change is perhaps the

leading example). Moreover, there are risks of abuse. Even so, this could be facilitated in laboratory experiments. Participants who made decisions along particular lines could be asked why they chose the options that they did—though this approach in adding an interview component to the laboratory exercises, would increase the need for those with that interviewing capability and thus, their cost.

Organizations have been increasingly important in society, not only for their decisions, but also for their indirect effects on the decision-making of individuals and other organizations. Here the task is more demanding and much less measurable.

Producers have been the principal organizations analyzed to date, though the effort has been largely to determine the most desirable aggregate behavior, something that might be altered in the future to take note of the variety of objectives and search requirements among those organizations. Nonetheless, while some of the indication of biases in the decision-making of the handful of producers has differed from the results of the laboratory exercises and field studies, that has not yet triggered an effort to test the results (perhaps an example of the confirmation bias at the professional level).

A major part of the remedy to behavioral economics' not having had as much of an impact as might have been expected, is not to abandon either laboratory experiments or interview-based analyses, but to ensure that both types of analyses report all the findings, not simply the average results, that they indicate something about the process of decision-making (taking note of initial outliers who later are no longer mere outliers), and that they include the response to nonfinancial as well as financial incentives and disincentives. The later, and inclusion of an interview component to laboratory exercises would increase the cost of such exercises, especially if the studies were to draw heavily upon interviewers with real-world experience.

Costs also would increase and there would be a decrease in the number of experiments insofar as those who undertook the laboratory work would be required to possess a greater knowledge of the activities they were studying and be more familiar with interviewing techniques. There would be a similar requirement for those engaged in interview-based analyses, but in that case the requirement might be met more easily and the new demand might only be that the results provide details on the decision-making of the individual or handful of individuals actually involved and on the manner in which many others were encouraged to accept the decisions

that were made. The cost of the analyses would be increased in both cases, but, so, too, would be potential usefulness of the studies.

Finally, it is necessary to take account of the social underpinnings prevailing in a given society at the time in question, and the degree to which those social factors influenced decision-making, at least in the aspects in which they made a difference. This requires a great deal of good judgment; precise measurement is virtually impossible. This is a very controversial matter. Yet, if that good judgment is not present interpretation of the outcomes will not be meaningful. This would include an analysis of what would constitute good decision-making under several sets of circumstance, enough to capture the essence of decisions as the size, contexts, and relative importance of the organizations also changed. The cost of all this would be quite high.

In a few cases, it may be possible to gain an understanding of how decisions were made by dependence upon biographies. More often, it would be necessary to turn to disgruntled former employees who were willing to risk the wrath, possible vengeance and legal suits of the organizations for which they had worked. This would be a second way of overcoming the surprising and disappointing lack of influence of behavioral economics.

A third way of reducing behavioral economics' continuing to have less influence than might have been imagined would be to establish grants for economists to spend time with organizations in order to better understand them and how they make decisions. To date, none of the studies of decision-making seem to reflect an extended period of listening to and observing actual decision-making processes. Such an understanding might also provide a firmer basis for behavioral game theory—and it might lead some organizations to initiate similar studies for their own use. The organizations, economists, and the community in general would be in a better position to understand what to expect when certain changes occurred. The cost of such an undertaking to society might be high but it is likely that an understanding of the response of decision-makers at various points in time would yield meaningful results, results that would more than compensate for the cost and effort.

Is there any valid reason for behavioral economics to continue ignoring consideration of outliers who later become leaders, and of organizational decision-making processes? I think not!

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Metaeconomic Solutions to Dysfunctional Water Markets

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1 INTRODUCTION

Hardin (1968) in the classic *Tragedy of the Commons* pointed to dysfunction represented in the tendency to damage or destroy Spaceship Earth Systems. Here, we will discuss that dysfunction as it relates to the water cycle and hydrologic system that produces, distributes (via precipitation) and stores fresh water as groundwater and aquifers, essential to life as we know it. Hardin (1968) claimed the solution was privatizing the commons (both open access and public property) and introducing markets. The water cycle for Spaceship Earth, as powered by the Sun, would be privatized. We might envision private property in the capacity

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of an aquifer and the quantity of the water in it. We might suppose all the rivers, lakes, and, the very ocean itself, would become private property.

Such thinking is represented in mainstream Chicago School Economics, and in Public Choice Economics, as in Anderson and Leal (2015). As Tomer (2017) suggests, it really does not fix either the biophysical or socio-economic (often introduced with market) dysfunction. In fact, as Tomer (2017) makes clear, Buddhist Economics would see it as a dangerous call, as it would be considered in Metaeconomics (Lynne, 2020).

Intriguingly, the empirical reality is that people often use various political and legal avenues to slow the move. Bretsen and Hill (2009) claim that reality leads to another kind of tragedy, the *Tragedy of the Anticommons*. While the tragedy of the commons describes a situation where everyone has use rights and no one can be excluded, the tragedy of the anticommons describes how the access to water use rights is blocked by the capability of others to exclude. Anderson et al. (2012) claim both situations lead to economic inefficiency, solved only by privatizing the resource.

In contrast, Lynne et al. (2016) make it clear that the only way to avoid dysfunctional tragedy and achieve economic efficiency is through *empathy conservation*. Empathy would temper ego-based excess. Both tragedies, conditions of not enough exclusion and too much exclusion, need to be tempered and bounded. In property terms, it is about finding an empathy-based balance in the interplay of private&public property, which is essential in order to find the best balance in ego&empathy, self&other-interest, market&government. It is about finding a balance that people can go along with, what everyone can accept as ethical and reasonable.

2 ADAM SMITH SAW THE POTENTIAL FOR DYSFUNCTION

To set the stage, consider two of the more salient quotes from Adam Smith about balance (see also Lynne et al., 2016, pp. 245–250; Lynne, 2020, esp. Chapter 7):

...man has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in his favour, and show them that it is for their own advantage to do for him what he requires of them. Whoever offers to another a bargain of any kind, proposes to do

this. Give me that which I want, and you shall have this which you want, is the meaning of every such offer; and it is in this manner that we obtain from one another the far greater part of those good offices which we stand in need of. It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own-interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages. (Smith, 1776/1789, loc 239–251)

Though it may be true, therefore, that every individual, in his own breast, naturally prefers himself to all mankind, yet he dares not look mankind in the face, and avow that he acts according to this principle. He feels that in this preference they can never go along with him, ... If he would act so as that the impartial spectator may enter into the principles of his conduct, which is what of all things he has the greatest desire to do, he must, upon this, as upon all other occasions, humble the arrogance of his self-love, and bring it down to something which other men can go along with. (Smith, 1759/1790, loc 1714–1727)

The “not by benevolence” quote is claimed in mainstream economics to justify the maximization of self-interest, even though Smith says own-interest. Rather, we interpret own-interest through Smith remarking on the constant need for help, the inherent interdependence, among all the producers of meat, beer, and bread, as well as with and among the consumers.

In own-interest, we must address ourselves to the matter of self-love: It is the arrogance of self-love as represented in self-interest only that causes not getting the meat, beer, and bread you want—the dysfunction. In order for all to get what they want or need, the self-love, the self-interest only, the selfish part of human nature must be tempered by empathy, the sentiments. In Smith’s words, “...humble the arrogance of self-love” to a level that others “...can go along with.”

To go along with the other, and then move to accept it, takes considerable self-control—self-command as Adam Smith saw it. Self-control has to be exercised to be an impartial spectator and become mindful of what others will reasonably accept to achieve a shared other-interest. It takes self-control to consider the other-interest and temper excessive greed. With sufficient self-control to address the other-interest, the tragedies can be avoided, and true economic efficiency can be achieved.

We need some language and an overall frame of reference. On language, Tomer (2017) points to mainstream economics, referred to

herein as the Neoclassical Economics practiced by the NeoClassEcon. We also connect the NeoClassEcon to Libertarian Economics as practiced in the Chicago School of Economics, as the NeoClassEconL. Neoinstitutional Economics practiced by the NeoInstiEcon, while not mentioned directly in Tomer (2017), is a close relative of Buddhist Economics as practiced by the BudhEcon. Metaeconomics as practiced by the MetaEcon is not only a close relative of the BudhEcon, but also makes the connection to Behavioral Economics as represented in the BehavEcon who are building an empirical, scientific economics. Tomer (2017) called for a more scientific and humane economics in order to avoid dysfunction, pointing out that NeoClassEcon does not give enough attention to either: Assumptions are not tested; empirical evidence contrary to their paradigm is rejected.

In the overall frame of reference, representing Adam Smith: The NeoClassEconL ignore the need to “go along with the other,” the empathy-based ethics, Adam Smith’s sentiments, instead seeing merit in self-interest driven excessive greed. As McCloskey (2019, p. 93) says it, “...Chicago School (economics reflecting) libertarianism (is) fiercely opposed to any ethical reflection whatever...” while reflection is essential to realizing a truly humane liberalism and democracy based economic system. MacLean (2017) sees the same issue, a Libertarian movement to a narrow moral and ethical dimension undergirding the economy, one that serves only the shared other-interest of a small and powerful group, in an emerging oligarchy, putting *Democracy in Chains*. In an endorsement of MacLean (2017, p. ii), John Nichols quotes former White House counsel John Dean: It is “conservatism without conscience.” Adam Smith would have said it is capitalism without sentiments, without the moral and ethical dimension, without empathy, which leads to dysfunction and tragedy.

Also, we use the language of nudge, a version of the libertarian paternalism of Thaler and Sunstein (2008, p. 4). Nudging is preferred, and is more consistent with a kind of humane liberalism as pointed to by the Enlightenment thinkers going back to Adam Smith. Yet, a paternalism reflected in bounding, restraining, mandating, regulating, and otherwise providing context through law, what people will go along with, is sometimes needed to achieve balance. We also use the Thaler and Sunstein (2008, p. 6) distinction between an Econ and a Human and add the following: To a MetaEcon, the Econ pursues only self-interest, while a Human pursues own-interest composed of a balance in self&other (shared with others, yet internalized)-interest.

Finally, the convention of the “&” refers to jointness, interdependence, and nonseparability. Each component on either side of the “&” is essential to the other. In simple terms, Crusoe is interdependent with Friday, and Friday is interdependent with Crusoe, *crusoe&friday*. Both are also interdependent with the Spaceship Earth, the island within which the *crusoe&friday* economy is embedded, and travel together with it, as in *economy&spaceship*.

3 EMPATHY CONSERVATION OF IRRIGATION WATER

Water and food are essential. Producing human food uses the largest share of available fresh water on the Spaceship Earth. However, water has many other critical roles in the ecological system that humans are embedded. Dysfunction has dire consequences for all life.

We start with the fundamental production economics of the NeoClassEcon to look at water used to produce food. The NeoClassEcon see only isoquants represented along the ego-based self-interest path $0G$ (Fig. 1), an Econ with self-interest only (not a Human with both self&other-interest) producing the product to be marketed (corn, wheat, alfalfa). It is about maximizing profit—marginal private benefit equal to marginal private cost—at least cost point A , with outcome I_G^3 . An Econ would not produce the best amount of the community product represented on path $0M$, which is joint with it, jointness demonstrated by the overlapping sets of isocurves: One cannot produce I_G separate or independent from I_M . It is joint and interdependent production.

Community-oriented environmental outcomes along path $0M$, like wildlife habitat on the farm, pollutants washed downstream, and over-pumping the very aquifer on which the enterprise depends, are of no direct concern to a NeoClassEcon: Such outcomes are external to the profit-seeking enterprise. The I_M set is purposely drawn in dots and dashes to indicate that the shared other-interest is always in the background, in the invisible hand, we might suppose. If it is within sight, the NeoClassEcon would claim that it can be resolved only through privatization, e.g., create use rights in the aquifer, or instream rights to higher quality water. In contrast, a BudhEcon and MetaEcon would point out there are no externalities, as the isoquant set I_G is embedded within the larger community, overlapping with the I_M set now made visible—solid curves. The path $0M$ also reflects Spaceship Earth Limits: Zimmermann (1933, 1951), a NeoInstiEcon, saw that thermodynamic limits were real,

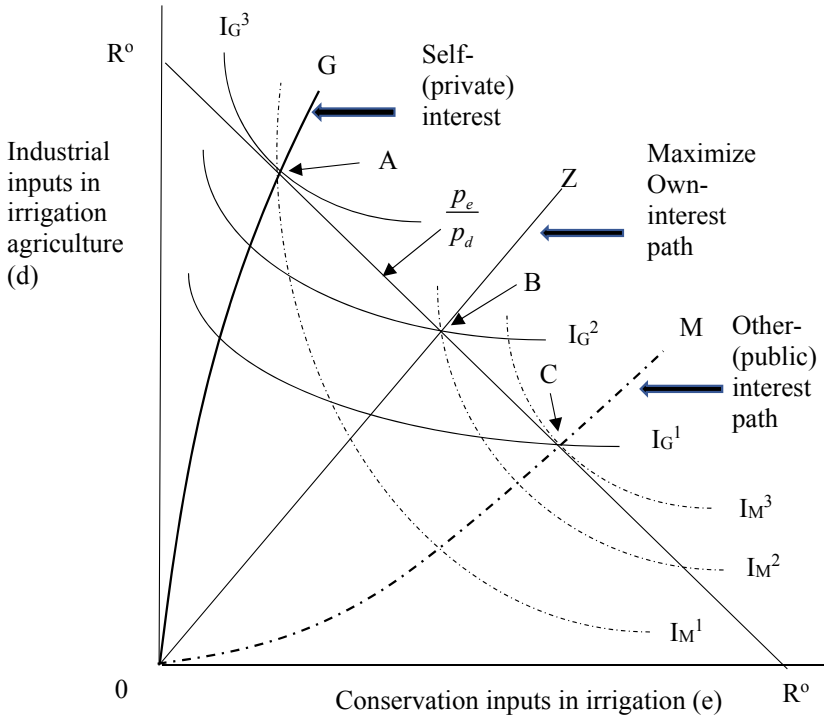


Fig. 1 Industrial inputs (d) joint (nonallocable) with water conservation inputs (e) to produce a food product from irrigation agriculture in the self-(private)interest (I_G) and a community environmental product in the other-(public)interest (I_M) (Source Author original)

everything is internal to the Spaceship: There are no externalities. To a BudhEcon and a MetaEcon, it is all about what the other can go along with, what the other will accept, on path OM , which is internal to the economy&spaceship. Notice how the community product at point A is lower, with $I_M^1 < I_M^3$. A person paying attention to the internalized empathy-based other-interest on path OM produces a substantive payoff in that which is shared with the community at point C, with the larger amount I_m^3 but with less citrus, corn, or alfalfa at I_G^1 .

The commons related tragedies can now be more precisely defined. The tragedy of the commons arises in the lack of exclusion (open access)

along path 0G, resulting in destruction of an aquifer, for example, with complete loss of what is in the shared other-interest, landing on the vertical axis. The tragedy of the anticommons arises in too much exclusion along path 0M, with the loss of what is in the self-interest (aquifer solely for economic purpose), landing on the horizontal axis. In both cases, economic efficiency cannot be achieved because of excess.

A MetaEcon points to the solution to both tragedies on path 0Z: Economic efficiency comes from balancing the self-interest on path 0G with the other (shared, yet internalized)-interest on path 0M, and, vice versa. A BudhEcon would immediately see the efficacy of the MetaEcon chosen path 0Z, because of the need to account for the "...relational virtues such as generosity and compassion" (Tomer, 2017, p. 143) as represented on path 0M as well as the need to avoid the "...uncontrollable excesses..." of self-interest only on path 0G. Choosing path 0G is also to live in ignorance—hopefully innocent and not dark—rather than living a mindful, scienceðics based, life (Tomer, 2017, p. 144). Yet, to put too much emphasis on path 0M is also to not stir a person to seek self-interest on 0G. Balance, please.

Another analytical engine is also needed to make complete sense of why path 0Z represents economic efficiency. It clarifies that what other people can go along with—the shared other-interest arising in Other Forums—is what gives context to the Market Forum. The analytical engine for examining the role of the Other Forums comes from moving along the capital constraint $R^o R^o$ to trace the possibility frontier in Fig. 2. The possibility frontier represents the rational zone bounded by path 0G and 0M in Fig. 1. Operating on or outside of either path 0G or 0M is irrational: Self-interest only or other-interest only is irrational, leading to dysfunction and tragedy. The point of balance arises from applying the Value V in order to avoid tragedy.

The other part of this analytical engine sees the higher plane of Value V beyond the mere Price from the market, illustrated by the curve V^o . The curves represent the metapreference of the BudhEcon (see Tomer, 2017, p. 146), while choosing point A is the actual preference, and point B is the true or ideal preference. Value V works to set the Price P in cases where "water is cheaper than dirt" so it is not necessarily a political or government failure, as Anderson et al. (2012, loc 81) claim. The community can legitimately override the market to move the system to point B or C. The community-based sentiment is essential to providing context through tempering the market, as Adam Smith made clear 250-years ago.

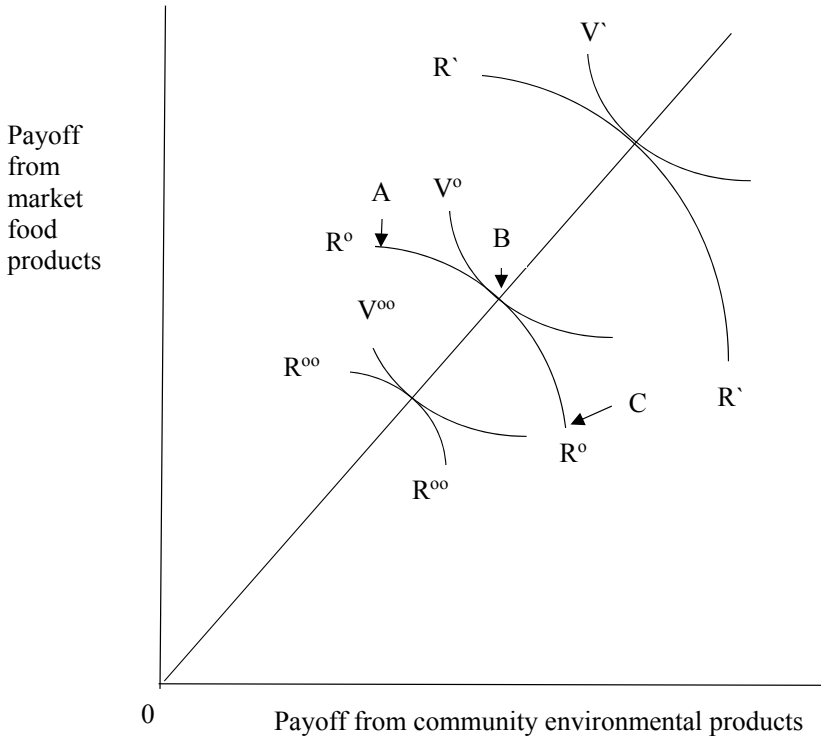


Fig. 2 Synergy on the food and community environmental production path, balancing the private interest in the market based food product with the public interest in community environmental products on a higher plane of Value V (Source Author original)

In fact, without empathy, the balance can be tipped too strongly toward private property, as represented in excessive greed in the market: The *Tragedy of Excess* also needs to be addressed (see Lynne, 2020). Overall, people have a primal tendency to take as much property as they can, and to concentrate power in markets, driving a natural tendency toward dysfunctional market and government, rather than a functional market&government. Cronyism is the result as powerful business and political leaders join forces (Munger and Villarreal-Diaz, 2019). By including the sentiments, as represented in empathy conservation, all three types of tragedy are avoided at point B in Figs. 1 and 2.

All of this comes with a bit of sacrifice, pointing to the essential role of suffering as a BudhEcon sees it: Choosing point B means sacrificing self-interest in moving from A to B, and sacrificing other-interest in moving from C to B. Focusing only on the self-interest path 0G results in the conflict inherent in “anger, jealousy, worry, anxiety, despair, dissatisfaction, and discontent” (Tomer, 2017, p 144). Conflict results when the focus is only on the materiality, in this case only on producing citrus, corn, and alfalfa. Tomer (2017) notes how the BudhEcon sees the Noble Eight-fold Path: To a MetaEcon, it is path 0Z, and demonstrates the BudhEcon recognition of “pervasive ... interconnectedness and interdependence of all things in existence” (Daniels, 2010, p. 956, cited in Tomer, 2017, p. 145). In MetaEcon terms, least cost is achieved as well as the marginal social benefit is equal to the marginal social cost—true economic efficiency—at point B, in contrast to only marginal private benefit equal to marginal private cost at a point of pseudo-economic efficiency, one without ethical reflection, at point A.

How would the NeoClassEconL based free market environmentalism play in the framework? Creating private property and a water market would create an incentive to shift away from point A toward point B. Paying for water would increase p_d relative to p_e , such that R^oR^o would flatten a bit. Would it go far enough to address both the biophysical and socio-economic dysfunction, and eliminate all tragedy? NeoClassEconL say “yes.” All is solved with privatization. The claim is that economic efficiency can only be achieved with a “free” (not tempered or bounded) water market (Anderson et al., 2012, loc 99); it is also presumed such a market would never concentrate and lead to severe inequality of income, wealth, and power from private-only use of water.

The matter of dysfunction and tragedy is an empirical question: Would a free market in water represent all Value V considerations? The general answer suggested by a BudhEcon and MetaEcon is “no.” In fact, the only way it could even have any potential to do so would be in an extreme case, a pure capitalism, where every environmental product the community wants and needs is available in the market. It would also be essential that everyone had enough money so each could bring their Value V into the market, turning it into a Price P . Reality, please: Pure capitalism is simply not practical, and historic experience (just like attempts at pure communism at the other extreme are also not practical) demonstrates wide-spread dysfunction represented in the three tragedies. Instead, reality points to seeking balance.

What is the solution? MetaEcon and the BudhEcon see government is essential to represent the community, the shared other-interest, while still encouraging and facilitating self-interest in the market. It is about balance in the self&other-interest, the market&government, the i&we of the water market (Lynne and Saarinen, 1993). We now turn to the context represented in the private&public property balance in US water law, which is about what the other will accept.

4 WATER LAW TO REPRESENT THE OTHER-INTEREST

English Common (Water) Law became the model for every US state after the 1776 Revolution. We look at the case of Florida since, as Klein et al. (2009, p. 405) point out, it is the only state that has legislated a “wholesale reform” of common law. The 1972 Florida Water Resources Act was enacted at the “dawn of the environmental movement” in the US, such that “the reform reflects modern environmental and public interest sensibilities,” shared other-interest sensibilities to a MetaEcon. It was also a response to conflicts arising from unregulated high-volume aquifer withdrawals in several areas of the state, where the high transmissivity of the lime rock aquifer resulted in interference with water pressure in neighboring wells. There was also saltwater intrusion into the aquifer from heavy pumping in coastal areas.

As Klein et al. (2009, p. 405) make clear, water law deals with many dimensions of what the MetaEcon would characterize as joint self&other-interest:

- (1) advancing the public interest while allocating water among competing users;
- (2) retaining sufficient water in natural streams, lakes, and aquifers to maintain vibrant aquatic ecosystems;
- (3) ensuring that adequate water supplies will be available for future needs;
- (4) determining the extent to which managers should “transfer” water from places of relative abundance to places of relative scarcity; and
- (5) determining the role, if any, of the “free” market in allocating water resources within states.

The 1972 Act gives clear context to the shared other-interest within which a water market would operate.

We focus on aquifer withdrawals, which account for only 20–30% of freshwater use across the US, but in Florida it is approximately 95%. Also, as Dellapenna (2013) makes clear, there is generally interest only

in creating private property in aquifers or groundwater in the saturated zone of the geologic substructure, where water accumulates and can be pumped out of a well. How are we to address the rest of the groundwater?

At least within recorded conditions of rainfall and recharge, there is water both above and below these saturated zones. There is a special shared other-interest in the water table above the saturated zone since plants and animals not acknowledged as part of the economic system also depend on the water. High volume withdrawals in Florida have not only resulted in well interference among farms as well as municipal well fields, such withdrawals have also desiccated wetland habitats, lowered or dried up lake levels, caused sink holes, and diminished spring flows and the rivers that springs support. Over-pumping has also caused saline infiltration of aquifers from relict seawater in inland locations. The shared other-interest is wide and deep.

Generally, as Dellappena (2013) documents, the evolution of groundwater law has followed on the expansion in the understanding of hydrology. In English common law, courts and judges had little understanding of groundwater and its connection with surface water. The result was the evolution of separate groundwater law and surface water law, which to this day plague water management. Dellappena (2013, p. 268) quotes Mark Goodman, who summed up the state of groundwater law in Arizona in 1978: “The history of [groundwater law] is as thrilling as ignorance, inertia, and timidity could have made it.” The connections between surface and groundwater have yet to be fully recognized in most US states, Florida being an exception.

Groundwater law began in England as “absolute dominion,” also called “absolute ownership,” or “the rule of capture.” The land-owner had total control over the quantity drawn from wells. Even though groundwater in the saturated zone was public property under English law, still true in the US, once it was in the well-head, and especially once it was withdrawn, the land-owner had a private property right in it. Dellappena (2013) notes that the nature of that property right has been subjected to a wide variety of court interpretations. While the absolute ownership interpretation thrust water into a private property frame, few courts have stayed with a narrow interpretation. The rule of capture seems to be the only part still remaining: Once the land-owners have invested in drilling a well, installed pumps, and otherwise incurred costs of withdrawing water, they have some kind of property right. What is it?

It is a use right, although it becomes a bit murky (no pun intended) as correlative rights and reasonable use are considered. Sometimes, the notion of correlative rights becomes proportional rights among the owners of overlying land, especially when all are drawing water for the same use. Land ownership over the groundwater gives other-interest in sharing it among all such land-owners, something everyone could accept. Reasonable use, another shared other-interest, precludes land-owners from drawing water for something not deemed useful by the law, which everyone has to accept (or perhaps flout). By integrating reasonable use with economic concerns, including economic efficiency, the focus shifts to reasonable beneficial use of the water (Saarinen and Lynne, 1993).

Also, an appurtenance rule applies, i.e., both correlative rights and reasonable use require the water to be used on that tract of land and not transferred off-site. It has often been relaxed, as in transfers for municipal use (Dellapenna, 2013, p. 274). Reasonable use conditioned by the shared other-interest of transferring water to municipal utilities is something that people have accepted.

In the western US states, appropriative, prescriptive, and/or pueblo rights make water law more complex. Also, especially in the surface water appropriation states, sometimes surface flows take precedence over any groundwater withdrawals, whether proportional or not. Dellapenna (2013, p. 284) describes a ruling by the Nebraska Supreme Court that "...groundwater is owned by the public, and the only right held by an overlying landowner is in the use of the groundwater." He then explains: "The right of the overlying landowner to use groundwater is a usufructuary right and not an absolute right. The property right in groundwater, therefore, is a right protected under the constitution ... as an appurtenance of the estate of the overlying owner, but the right cannot be asserted beyond that limited purpose." That interpretation by the Nebraska court is generally true throughout the entire US, no matter the mix of laws in place. Private rights are attenuated in order to ensure protection of the shared other-interest.

What is the current trend in the empathy-based other-interest? The answer is emerging in what Dellapenna (2013, p. 302) refers to as regulated riparianism, which is described in the Florida Water Resources Act (Klein et al., 2009, p. 410). That approach is in the Regulated Riparian Model Water Code (American Society of Civil Engineers, 2018), which includes some features of the prior appropriation system that evolved in the western US.

Regulated riparianism integrates across both eastern and western US law. Klein et al. (2009, p. 410) suggest the integration results in “administrative allocation of water through a permit system; evaluation of permit applications based on the reasonableness of the proposed use; elimination of place of use requirements; and at least some recognition of temporal priorities.” Permits come from the notion of senior and junior use rights in the appropriative rights doctrine, which some argue best serves a self-interest. Shared other-interest arises through the doctrine of reasonable use. Klein et al. (2009, p. 411) point to how—as a MetaEcon would say it, how the self&other-interest is balanced—regulated riparianism addresses “public health, welfare, and safety; environmental and ecological impact on source and watersheds; nature and size of use; economic and other benefits derived from use; compatibility with state water plans; and historic and preservation values.” This is about far more than a self-interest-only free market.

What does riparian regulation entail? In Florida, it included the legislature writing what became administrative law, beyond what evolved from the common law. It involves the state administrative branch, operating under the Florida Administrative Procedures Act represented in the governor, and various state agencies. It includes five politically appointed governing boards, one for each of five water management districts drawn on surface watershed boundaries. The districts, created for flood control before the 1972 Water Resources Act, have each developed a context that offers access to groundwater, issuing short-period consumptive use permits. The permits “...for consumptive use of ‘water,’ defined as ‘any and all water on or beneath the surface of the ground or in the atmosphere’” are granted for a period of 7 to 20 years, depending on aquifer conditions, quantity requested, and conservation techniques committed to (Klein et al., 2009, p. 414). Water is water.

Looking across the US, there is an intriguing evolution and variety. Nevada, as did a number of other western states, gave first priority to private (self-) interest, which often harmed public (other-) interest outcomes. By the terms of the Water Resources Act, Florida would have gone the other direction, giving first priority to the shared public interest which might have harmed private interest. Because the Florida water districts procrastinated in defining minimum aquifer levels and stream flows as required in the law, the effect has been to shift the balance toward private use, the self-interest.

Some states interpret public interest as best served by maximizing self-interest. Still others look to the public trust doctrine, and public welfare. Klein et al. (2009, p. 431) highlight an Oregon statute that defines the public, shared other-interest as represented in “the highest use of the water for *all purposes*, including... public recreation, protection of commercial and game fishing and wildlife... or any other beneficial use to which the water may be applied for which it may have a special value to the public.” The esthetic can also be a shared other-interest. The public interest is in everything, as the overlay of the isocurves in Fig. 1 suggest. The public trust doctrine gives another layer of shared interest by tempering the greed-driven move to private property, viewed by NeoClassEconL framing (as represented in Bretsen and Hill, 2009, pp. 742, 750) as a tragedy, because the water resource is underutilized for economic purposes.

5 WATER MARKETS TO REPRESENT THE SELF-INTEREST

So, where would water markets fit? Do they fit at all? As Dellapenna (2013, p. 310) notes,

In this ‘neoliberal’ era, markets are presented as the best or only tool for managing or resolving social, political, and economic problems. Such thinking leads economists, engineers, lawyers, and others to propose markets as the best tool for environmental management generally, and for water resources in particular.... For market proponents, requirements of ‘reasonableness,’ ‘fairness,’ and ‘public interest’ simply prevent a proper definition of the property right, specification of the resource, and maximization of profit and conservation alike. Such court-imposed rules are seen as interventions that impose non-market controls that convert something into a public resource that would far better be managed as a private property right.

The Neoliberal view—and NeoClassEconL “science” supports it—is represented in Anderson et al. (2012), as well as Bretsen and Hill (2009), and even more so in the property rights approach delineated in Anderson and Libecap (2014). In their view, there is no need to address the shared other-interest as represented in reasonableness, fairness, and public interest, as all are considered impediments and distortions in free markets—we surmise, free to do as you please, without regard for the

other, the community and the future condition of a resource essential to all life.

A MetaEcon would rewrite the story and ironically provide an even more powerful rationale for water markets. A truly functional water market is one that exists within a context of acceptance by the community. As Adam Smith tried to teach, people have to go along with what the market might produce. The point is demonstrated empirically by the case for a market where the shared other-interest is narrowly defined. As Culp et al. (2014, loc 687, citing Brewer et al., 2008) note regarding the extent of water markets in the western US, "...voluntary water transfers are mostly between farmers, rather than between farmers and other users..." In Metaeconomic terms, farmers have a narrower shared other-interest, so it is easier to get to what all would accept (with lower transactions costs as demonstrated empirically in Lynne et al., 1991). As a MetaEcon makes clear, the challenge is to evolve an other-interest widely shared by everyone, ensuring low transactions costs. As Culp et al. (2014, loc 916) point out regarding the Colorado River, a major source of water in the desert southwestern US, in a study by the US Bureau of Reclamation:

The 2012 Colorado River Basin Water Supply and Demand Study...demonstrates this facilitative leadership role, bringing together a diverse set of stakeholders across seven Western states to develop a common understanding of water resource challenges and potential multistate solutions, including water banking and other market-driven solutions.

The Bureau is facilitating a conversation about a new, widely shared other-interest, building on what all affected parties will accept: Transaction costs decline as shared other-interest converges.

It seems the US Bureau of Reclamation, along with most water law experts, realize that what people will accept is the point. As a result, the experts see the potential for substantive dysfunction when only self-interest drives a system, as in the idea of a mechanism. Klein et al. (2009, p. 467) say it well:

Water markets are a mechanism through which the holders of consumptive use permits (or water rights) transfer all or a portion of their permitted water allocations to other water users, often in exchange for financial compensation. Markets are merely a means to an end: they are designed to *reallocate* water away from existing uses in order to achieve various

state policies. Typical goals include moving water from lower- to higher-value uses; promoting conservation and eliminating wasteful practices; and freeing up water for environmental protection.

As legal experts are perceiving, a free market “mechanism” is devoid of consideration for what the larger community will accept and instead the public interest must be reflected in the law and represented in regulated riparianism. A NeoInstiEcon would especially argue a market is a Human institution not an Econ mechanism. Yet, neoliberal economists like Anderson et al. (2012, e.g., locs 1221, 1273, 1338, 1776, 1804) claim that any attempt at tempering a private property system such as pure prior appropriation leads to inefficiency. The assertion is that self-interest in private property rights must be released from any influence from the other-interest, and returned to prominence (locs 1795–1804). Culp et al. (2014, loc 216) lament “...water law creates significant obstacles... legal impediments... barriers (loc 383)” to creating markets. The claim is not accurate. Water law is not an impediment or a barrier to a true market. Law gives it context, that which the other will go along with, that which the other will accept: Good law arises out of empathy based ethics.

Both a BudhEcon and a MetaEcon would point to an empathy-tempered market to achieve beneficial goals, especially for conservation. Recall Fig. 1: A financial incentive represented in having to pay for a water use right will stir investment in water saving technologies. In fact, it can be far more effective than mandating something like drip irrigation.

During the time of the survey used to collect the data used in Casey and Lynne (1999), which found a substantive role for the public (shared other)-interest, a strawberry farmer had been mandated to switch from big gun to drip irrigation. He shared that he let the newly installed drip system run 24/7. Under the mandate, the farmer withdrew more water. It was less costly in both pumping and management costs to operate a drip system. Growing strawberries on deep and permeable sand meant that a drip system would never over fill the root zone. The water district did not use meters, so did not know how much water was withdrawn. He said, he had more time to attend his son’s baseball games. So, the irrigator stayed on path 0G, using even more water. What was missing?

A MetaEcon would point to introducing a limited water market, an empathy-tempered water market with irrigators nudged to conserve, not only by the community, but by the incentive created by being able to sell the use rights for the water saved through empathy conservation. A

MetaEcon always points to the potential to achieve true efficiency on path 0Z. We also note that path 0Z is achieved in several actual settings, even without markets, with aquifers and many other kinds of natural resources for which there is a deeply shared other-interest (e.g., see Ostrom, 1992).

The NeoClassEconL disagree. As Anderson et al. (2012, loc 253) frame it, water markets are the only way, in that: “Ours is a world of water scarcity... so conservation and allocation matter more than claims of right and water sanctity.” They insist that private property transfers in a market mechanism designed for the Econ is the only way. Thus, Value V representing the claims of an inherent right of access to water by every Human; the larger ecological system on the Spaceship; as well as resource sustainability for future generations, the sanctity of water used for non-money value purposes, is not of concern. A MetaEcon sees dysfunction and tragedy in the claim.

Dellappena (2013, pp. 313–314) documents dysfunction in markets designed as mechanisms, citing many sources:

Market proponents point to the supposed success of markets for managing surface waters in Chile as “proof” that market systems can and do work. Proponents also point to other examples, such as the California Water Bank and the water transfer from the Imperial Irrigation District and San Diego. These examples do not in fact prove that markets for raw water actually work. As geographer Carl Bauer has shown through extensive on-the-ground research, reports of the successful implementation of the Chilean water marketing laws are greatly exaggerated. Elsewhere I have written extensively about both the California Water Bank and the “sale” from the Imperial Irrigation District to San Diego, showing that they were not true market transactions but regulatory interventions masquerading as market transactions—interventions that had the effect of transferring wealth from poorer members of the communities involved to the wealthier members of those communities.

Empirical reality clarifies that dysfunction and market failure are common: Metaeconomics clarifies it is because of too much focus on self-interest and not enough on balancing self&other- interest. Failure has nothing to do with externalities as claimed in Anderson and Libecap (2014, p. xi).

Also, a huge oversight by the NeoClassEconL relates to how well a water market handles uncertainty, as one reviewer (Art Goldsmith) said it,

... finding a balance that people can go along with, what everyone can accept as ethical and reasonable ... an additional factor – typically neglected, that makes finding this position even more challenging is uncertainty, since much of what matters entails making predictions about how things will evolve in the future ... there are both known unknowns about the evolution of natural resources, and unknown unknowns. These same concerns make it troubling to think of turning natural resource use and distribution over to a private market.

We fully agree, especially in the frame of a market as a mechanism within which traders do only one thing, always maximizing self-interest, which also tends to be very short run in focus. And, while both known unknowns and unknown unknowns may to some extent be represented in the mindfulness (i.e., the empathy) of the traders in the market, it is also essential to look outside the market. Metaeconomics would point to the essential need for giving context to the Market Forum about uncertainty through the Other Forums of the community as reflected in representative government, through the shared other-interest. Uncertainty can be adequately addressed only through good balance in a joint market&government, each working with the other, to address the water question.

6 CONCLUSION: MOVING BEYOND DYSFUNCTION WITH BUDDHIST AND METAECONOMICS

The problem with free market environmentalism is clear: It points to a massive transfer of public property into private hands to serve the excessive greed of an Econ, without empirical support for such a change. It is not about Humans who have many other concerns. MacLean (2017) describes the plan in progress for the entire economy pushed by the Neoliberals on the radical right. The aspect not revealed by free market “environmentalism” is that government is to be drastically cut, reduced, minimized, resulting in damaging government so it cannot be a viable partner in market&government. If the push for marketing water grasped the reality of the need to balance self&other interest, market&government, a water market could be a good thing. As it is, favoring only the self-interest of an Econ is a bad thing. Substantive investment must be made not only in the market but also in government in order to achieve economic efficiency.

As Culp et al. (2014, loc 1018) indicate: "... making water markets work for the environment will require not just rules to protect critical resources, but also the dedication of public funds to meet environmental needs." Free market environmentalism does not provide any support for producing public funds and using government to help the community protect resources. Instead, it frames government as a distortion, an impediment: To what? To be free to pursue excessive greed, which is not to be tempered or bounded?

In contrast, a BudhEcon and a MetaEcon see a key role for government. In fact, MetaEcon, represented in Czapot al. (2016), has empirical evidence of the need for both market&government in good balance. Using both financial incentives in the spirit of a market, and empathy-based nudges from government, perhaps supplemented with some regulatory standards, is the most effective way to achieve true economic efficiency on path 0Z. The hope for a humane and efficient system is on path 0Z, which Adam Smith fully understood is a path about peace, happiness, and true economic efficiency. In contrast to free market environmentalism, path 0Z represents the kind of humane liberalism in both market&government envisioned by Adam Smith and other Enlightenment thinkers (see Lynne, 2020). It is about building a science-based, humane, and ethical economics, scienceðics, science&humanities, with ethical reflection in the visible hand, as Tomer (2017) understood. Adam Smith did too, and he would be pleased with the BudhEcon and MetaEcon.

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