Chapter 9
The Long March to a New Knowledge Space: Constructing a Critical Complex Epistemology

So traveling through critical space, pluriversal space, and cyberspace we make our way to the new dimension opened by a critical complex epistemology. Here much more is possible, self and world can be changed in almost any way that we can imagine, new human abilities can be developed and cultivated, forms of radical love can nurtured, knowledge production can become a far more nuanced and creative process, and pedagogy can become something that students and teachers are excited about as they observe the impact of their actions on self and the larger society. In this new epistemological pluriverse we can develop new states of consciousness from which to engage in our work, in the process coming to see aspects of reality never before perceived. For example, as criticalists understand the ontological insight that phenomena exist as things-in-relationship not merely as things-in-themselves, they begin to focus on web-like conceptual connections between things-in-the world that before looked like empty space.

Recognizing this "in-between," this non-material consciousness-produced connective "tissue" changes the world. The "true reality" of Western waking consciousness that all contemporary Westerners have been acculturated to see (and see exclusively) is merely one dimension of the multiple realities perceived by diverse cultures and peoples in different times and places. Thus, the more we know about such cultures and times, the more we can sense about the world around us, the more we can imagine different ways of being both at an individual and social level. Again, I am profoundly excited by this trek into an evolving consciousness, the pluriverse, a world where dominant power is challenged, an education more exciting than any theme park ride, and a critical complex epistemology. The socio-pedagogical ride I'm describing involves more than an exploration of our consciousness—although this is a key part of it; it entails more than being involved in a political movement to end human oppression and suffering—although this is a central dimension of it. It involves both a journey inward and a journey outward. It cannot exist without the synergy of both tasks, as they are brought together conceptually by the critical complex epistemology and operationalized in an evolving critical pedagogy.

Thus, a critical complex epistemology blasts open the windows of awareness that had been nailed shut by FIDUROD and the positivist tradition. As we open the window, we might gain the ability to envision consciousness, for example, as

J.L. Kincheloe, *Knowledge and Critical Pedagogy: An Introduction*,

a liquid concept that contains within it spatial and temporal features. Imagine that as we perceive something we bathe it with such a fluid that then flows to other entities connecting them to one another and to our minds. Indeed, such a liquid consciousness flows from one individual to another in both the contemporary world and through time to individuals long deceased who have left various artifacts including the objects they created, their writings, and audio and visual recordings. As the fluid of consciousness flows over these individuals and their artifacts, its contents grow richer, packed with ingredients that blend together like spices in a rare cuisine.

In this way a synergy is created that makes the totality of the liquid consciousness greater than the sum of its parts. Thus, an ocean of consciousness is slowly formed in which we are all invested, to which we all have made contributions. Such an ocean of consciousness represents the connections that unite us and that move us to act in the best interests of everyone. Again, transforming such a metaphorical notion into a social, cultural, political economic, and pedagogical reality is one of the goals of a critical complex epistemology. Thus, we return to a central concept of *Knowledge and Critical Pedagogy: An Introduction*—in this critical complex epistemological milieu we go beyond FIDUROD's correspondence epistemology that assumes that reality is "out there" in a never changing, intractable format completely unconnected to the miracle of human consciousness and all its known and yet unknown capabilities to engage multiple realities (Lepani, 1998).

As Albert North Whitehead (1968) maintained decades ago, Western epistemology began its exploration of human possibility in a profoundly non-empirical manner. Instead of asking what human beings have experienced, reductionistic scholars asked what we *can* experience. In this context such epistemologists dismissed before they began their research a plethora of abilities that humans had reportedly possessed in different historical eras and cultural settings. Such reductionists bought into the Western positivist notion that human beings have very limited communication and connection to the external physical world. Thus, in this conception the world exists in a fixed, one-dimensional configuration and humans have little to do with it. A critical complex epistemology rejects such a deadening, nihilistic view of the cosmos and human possibility. It rejects FIDUROD's mechanistic notion of the universe and its human and other living inhabitants. It understands that epistemological history did not abruptly end with the development of the scientific method and a correspondence epistemology and that with hard work and a cultivation of the imagination epistemological history is much closer to the beginning of the birth of knowledge than to the *last days of knowledge*.

On an affective level—a domain deemed embarrassing and irrelevant in our contemporary neo-Puritanical educational era—the critical complex epistemology becomes even more important. As I walk through the halls of many contemporary schools—I think of many of these halls as valleys in the shadow of death—I can tap into the fear of libidinal energy and affective notions of joy in the surrounding classrooms and administrative offices. I find my connection with this fear to be quite painful, and I empathize with the nervous students who are being taught to accept a rational irrationality as they prepare for the next standardized test. In such

thanocentric places the worth of an expanded consciousness of epistemology and the politics of knowledge is akin to the value of a dead rat found in the school's basement. The notion that we know little about the nature, power, and potential of human consciousness is irrelevant in these places. When we consider just a few features of one alternate reality—the quantum domain, where like in Strawberry Fields nothing is real in a FIDUROD sense—we get how far we have to go and how much epistemological history is left. Characteristics of quantum reality include:

- A quantum entity such as an electron can exist in more than one location at the same time.
- A quantum object seems to exist in another spatial and temporal cosmos until we observe it as a thing-in-itself, a particle.
- A quantum entity will cease to exist in one particular space and will abruptly move to another location—without traveling through the Newtonian physical space that supposedly separates them. This is typically referred to as the quantum leap.
- As our presence as observers induces one quantum entity to reveal itself, we find that its non-local, interconnected twin object will be affected by our actions as viewers. This will occur no matter how great the distance between the two objects (Goswami, 1993).

Now, your assignment class is to explain why such phenomena take place in the quantum domain and how such activity fits into a FIDURODian epistemology. Please take no more than 20 minutes in preparing your answer.

The traditional Cartesian-Newtonian-Baconian assumption of linear causality crumbles in this quantum reality. What was a FIDURODian mechanistic cause-effect universe morphs into a domain of reciprocity and holism. Reciprocity refers to the reciprocal (give-and-take) relationship between knower and known. The known is always shaped by the knower; the knower always shapes the known. Holism, of course, alerts us to the notion that a dynamic cannot be understood by simply reducing it to smaller units. A phenomenon, a thing-in-relationship, can only be appreciated by understanding it as a connected and integrated whole. Such an epistemological insight strikes at the heart of FIDURODian reductionism—it cannot survive in such a textured zone of complexity. Thus, we make one small epistemological step that can turn into a giant leap for humanity. In this domain rests a profundity that stretches back into the far distant past and forward into the infinity of the future. Indeed, both domains may be less far-off than Western ways of knowing ever imagined.

Our historical research in this epistemological space becomes more important than ever before, as we discover a past that lives in multidimensional ways in the present. Concurrently, we understand that our imaginations operating in what we perceive as the present hold dramatic implications for the future. Here past, present, and future collide in an epistemological and ontological space that sabotages forever our limited FIDURODian notion of selfhood and reality (Burns, 2002; Villaverde et al., 2006). In such a context we might turn to aesthetic domains of cognition that help us conceptually develop and articulate/communicate the ideas that begin to churn in our expanding mind. In my own effort to develop my epistemic understandings

and cognitive abilities, I have often turned to the aesthetic domain. For example, I've long been fascinated with the mind-expanding power of surrealist art.

In the surrealist domain, art provided a peek at both alternative epistemologies and alternative rationalities more like a dream experience than a formal mode of analysis. In lieu of proceeding via linear argumentation obtained from validated data or logical precepts, surrealism used metaphorical modes of analogy that maneuvered to reconceptualize experience in diverse contexts including the affective and emotional domains. Here new modes of epistemology and ontology were developed that led me to new ways of conceptualizing and confronting both scholarly concepts and my lived experience. My desire was to do research and develop pedagogies that approach the relationship between the world and knowledge in a way similar to bees making honey with pollen. Indeed, the way barley is transubstantiated into scotch in the age-old distillation process in Scottish Highlands helps me conceptualize a critical complex epistemology as a process than turns simple observations of the world in to aesthetic and often life-changing interpretations.

To gain entry into these metaphorical but undoubtedly real spaces we must do the best we can to develop a socio-historical perspective on what we're doing—that is, how our social and historical situatedness, our placement in larger cultural patterns helps construct everything we are and all that we do. We'll never appreciate all of these dynamics, there's just too many of them to comprehend—but the more we know, the better start we can make as knowledge workers in changing the pollen to honey and the barley to scotch. This is why its so important to view the social, psychological, and pedagogical worlds from different scales—both the phenomenology of everyday life and a macro-historical understanding are central to our efforts to produce a more compelling understanding of the way the world operates, its significance for its inhabitants, and its implications for crafting more workable strategies for changing the world in the critical ways described in this book.

One of the hardest dimensions for many to understand about the knowledge work emerging from a critical complex epistemology involves a very basic hermeneutic dynamic. The data collected in, for example, a critical complex ethnography do not constitute some objective body of truth about a particular culture or sub-culture. A critical complex ethnographer knows that what her subjects said about their lives are not to be viewed as inviolable truths but more like interpretations of their lived experiences, social theoretical ruminations about the stuff of daily existence. Their consciousness, too, has been socially constructed and as a result their descriptions of themselves and those around them are colored by diverse assumptions and worldviews. In other words, they are just like all the rest of us. If we were asked similar questions about our lives, our responses would be shaped by comparable forces operating in our contexts. The naïve realism implicit in the belief in the transparency of ethnographic or phenomenological narratives is disconcerting in its artless reductionism.

This weak form of knowledge production, created around the banner of scientific rigor is one of the many reasons we need a critical complex epistemology (Goswami, 1993; Harding, 1998; Parker, 1999). In this context we are unafraid to pitch our epistemological tent on a paradigmatic fault line running through the mechanistic

landscape of contemporary science. As we study the fault line we begin to discern lost, emerging, oppressed, and fresh levels of awareness of whom we are and our role in changing the world. In this context we uncover even more evidence that the world can be reconstructed in socially just, erotic, ecologically sustainable, and creative new ways. As we enter into the last section of the book, we will focus on this reconstructionist dimension, focusing, of course, on our critical complex epistemology. This final part of the book will outline in the same way I did in Part 2 with FIDUROD the characteristics of a critical complex epistemology.

Characteristics of the Critical Complex Epistemology

Knowledge is socially constructed: World and information co-construct one another

In a critical complex epistemology knowledge is not simply a representation of an independently operating reality—the world and human consciousness are much too complex to be explained by such a simple correspondence epistemology. Since knowledge is a social construction, the point of a critical complex epistemology is to understand the nature and the consequences of the constructive process. Beginning with the understanding that the physical and the social worlds do not exist "out there" waiting like belles at an antebellum Mississippi ball to be discovered by charming scientists, a critical complex epistemology appreciates the way human minds shape such realities. This critical constructivist view harbors compelling consequences for research and pedagogy. In this context critical complex knowledge workers know that divergent constructions of the nature of the world will be created as times, contexts, Zeitgeists, and thus perceptions change. Thus, as I have maintained throughout the book, educators and researchers who embrace a critical complex epistemology are profoundly uncomfortable with those who would offer final truths about any topic.

Unlike an ever-evolving critical complex knowledge FIDUROD's knowledge can be stored in the barrels of Western civilization, transferred intact to new locations when it is needed, and be bought and sold. In FIDUROD's correspondence epistemology such knowledge can be transmitted from one mind to another—as Paulo Freire (1970) put it, such data can be deposited in the students' minds like money in a bank account. In a more constructivist epistemological orientation knowledge is not a substance that can be transferred from locale to locale but is constructed in a complex process in a larger socio-cultural context inseparable from the minds of individuals operating therein. Thus, in a critical complex epistemology—or as I have referred to this epistemological phenomenon elsewhere as critical constructivism (Kincheloe, 2005b)—the individual as part of a larger social context constructs the reality she encounters. Unlike in an epistemology of FIDUROD, her cognitive processes are not simply efforts to properly reflect "true reality."

Understanding knowledge as a social construction, a critical complex epistemology realizes that much more attention must be granted to the study of the complexity of the subject-object relationship. What is going on when individuals coming from a particular place and time encounter a phenomenon? At the very least, it is important to realize that there is nothing simple about this encounter; there is nothing simple, straightforward, and linear going on in the knower's consciousness. Indeed, in this complicated process individual knowers stare into the intangible abyss created by conceptual chasms and defects in FIDUROD's mechanistic ways of seeing and being. Such a confusing observation demands whether observers want it or not a reassessment of what the term, reality, actually means. In addition, such innocent bystanders caught up in the complexity of the cosmos, are struck with the realization that they must come to terms with the nature of the connection between subjective consciousness and the so-called "real world." Coming to terms with the notion that knowledge is a social construction is part of the existential dilemma of being human, of being thrown into a world that is so complex and confusing (Capra, 1996, 2007; Geeland, 1996).

Contrary to all FIDURODian commonsense we live in a world that is not only socially constructed but also in a mindspace shaped by this constructed reality. The world that we occupy and the mindsets that we bring to it are both products of a particular time and place and derive their character and meaning in these domains. For example, it is difficult to understand in Western and other cultures of only a few centuries ago—a very short wink in historical time—what motivated alchemists in their efforts to make sense of the world. Arising in the context of different times and places many of the socio-cultural dynamics that drove alchemists are lost to minds constructed in a different Zeitgeist. This is one of many reasons why historical research is much more complicated than many think. With these concepts in mind we gain a deeper insight into the complexity of knowledge production not to mention teaching and learning. This understanding highlights the simplification and reductionism of the epistemological world of FIDUROD where all can be easily known and merely passed along to passive students. All phenomena studied from a different vantage point take on different meanings, are constructed in new and divergent ways. This is a central dynamic in understanding the social construction of all knowledge from a critical complex perspective.

Of course, a central element of a critical complex epistemology involves understanding that these constructions of knowledge are always shaped by power. Foucault (1980) argued that the concept of truth was a phenomenon of this world, and as such is constructed by the dominant episteme of any era. Such power dynamics in the construction process bring us back to our concern with the colonization and decolonization of knowledge in the critical domain. A critical complex epistemology understands the diverse and ambiguous nature of these colonizing dimensions and works to cut a swath through the Everglades of the power/knowledge swamp. The decolonizing practices of the critical complex epistemology involve exposing the dominant cultural and ideological assumptions that tacitly construct knowledge, the values embedded the construction process, and the political economic dynamics that help establish who benefits from the activity. In schools working in collusion

with the power-knowledge nexus of dominant culture, students come to understand that "becoming educated" actually means committing such data to their minds without the higher order cognitive functions of, no kidding, questioning where it came from and how it was certified as truth (Mutua & Swadener, 2004; G. Jardine, 2005).

Any scientific construction sooner or later loses its utility in promoting the evolution of knowledge. Knowledge producers view the same phenomena but construct their meaning and relevance for the problems that face them in entirely different ways. In Western society, for example, Einstein understood that gravity was an attracting force in the same way as Newton. The point relevant to our conversation here was that he constructed its etymology from a different conceptual framework and in relation to a variety of physical processes unknown to Newton. Thus, gravity seen in this new light could never be thought of in the same way and, very importantly, held implications for rethinking the way we understood the universe as a whole and the way knowledge was constructed in particular. Shifting to an imperial context, we can take the same insights we appreciate in Einstein's work in physics and move them into a new epistemological approach.

If the colonized are excluded from the community of knowledge producers, from having a voice in the way knowledge is constructed, and from offering a critique of the exclusive colonial cultural dynamics of the knowledge industry, the knowledges of the colonizers begins to rot from lack of exposure to diverse constructions of the world. Colonial hegemony is perpetuated, as the most compelling critiques of dominant constructions of knowledge are excluded from consideration. Advocates of a critical complex epistemology study dynamics such as these and conclude that knowledges of the human domain are constantly changing constructions, vulnerable to the needs of power, and without claim to a secure foundation. Understanding that knowledge is a social construction may be quite disconcerting for many who felt that by their young adulthood they had figured out the way the world operates. The concept of multiple realities and divergent ways of seeing producing diverse constructions of the world of which we are an inseparable part can undoubtedly induce anxiety. A critical complex epistemology, however, maintains that it is better to get the shock waves behind us and move on to the task of building new knowledge, ways of seeing, ways of being, ways of researching, and ways of educating that make the world smarter, more equitable, more just, and more exciting.

Our constructions are nothing if not tenuous and delicate, always operating in the middle of an avalanche prone terrain. For humans to escape the colonial, corporate power-driven disparate, war-ravaged, fragmented, rationally irrational insane asylum that is twenty-first century globalized society, we must begin with an understanding that we are characters operating in a socially constructed matrix. A pedagogy that works to inform the world of the notion that humans make the world through the knowledges they produce about it is no easy task in an era marked by religious fundamentalism, senseless nationalism, hatred for the other, and a defensive of "my society" right or wrong. Critical pedagogues retreat from their schools to mend the wounds and psychological scars inflicted by the defenders of traditional epistemologies and the ideological status quo. Teaching and researching from a critical complex epistemological perspective is not for the faint of heart. The men and woman

who engage in this activism, this pedagogy must be tough and, as mentioned earlier, ready to take some hits (Harding, 1998; Geeland & Taylor, 2000; Bettis & Gregson, 2001).

Thus, knowledge is a social construction that is always linguistically spawned and socially navigated in a world marked by complexity and multiple causes. No matter what the advocates of FIDUROD tell us, they do not (they cannot) eliminate subjective human inscriptions—anxieties, interests, objectives, cultural assumptions—on the knowledge they produce. Language is so important in this context, for it is in part through language that we encounter a world already under construction. Obviously, this constructive process is ongoing and incomplete, as it waits longingly for a critical complex epistemology to make it something better than it presently is. As we discussed in Chapter 2 the world is made of language. In a process that many indigenous cultures refer/referred to as magic, language brings forth the world.

Contemporary epistemology is just now catching up to indigenous understandings of language, some of which were developed millennia ago. Thus, the smarter we become in a linguistic context, we not only gain the ability to express ourselves in a more compelling way but we also become more capable of constructing a better, more intelligent and socially just world. The cosmos is in part a linguistic entity. Shifting discursive constructions are constantly shaping and reshaping the world and the individuals who populate it. Critical magicians study the specifics of these dynamics and use them to perform epistemological and ontological prestidigitation. Thus, for example, language is transformed from something heard to something seen and felt. As we develop our linguistic abilities and symbol systems, for instance, using our existing alphabet with iconic images from videogames and cyberspace to create a more expressive language, our power to remake the world intensifies.

The reason we work to understand that knowledge is a social construction is not because of some arcane academic need but because it is one of the multiple pathways to restructuring the world. In this way critical cultural workers and critical pedagogues employ the synergy between indigenous knowledges and contemporary social theory to move to levels of insight and praxis. What appears to be unexplainable in one linguistic community may in another be easily articulated. Once again the need for multilogicality, multiple perspectives, multiple methods, and multiple languages rears its head. An emotional notion, for example, that is hard to express in psychological language may be effortlessly articulated in an aesthetic context. And again, once such an emotion is expressed, it exists. The artist has created it—and it lives albeit in idiosyncratic way among those who view the picture or read the poem. In this context the importance of poets, novelists, painters, musicians, and other artists can be conceptualized in a fresh context.

Knowledge workers in such a critical complex epistemological context are not mere functionaries of the dominant power bloc, but are creators of the universe. If educators understood the epistemological and ontological importance of the knowledge production process, I believe they would approach it in a different pedagogical framework. Thus, amazingly the linguistic dynamic cannot be separated from the epistemological and ontological dimensions. As previously argued, in a critical

complex epistemology if we can think it and articulate it we can bring it into existence. The world is stranger than we thought. In this analysis of the social construction of knowledge it is important to note that modes of knowledge production and the social contexts that shape them co-evolve. There is no one-way flow of causation, e.g., language does not simply construct reality, for reality is always constructing language. In this context a pre-formed world does not merely create language; language and the world co-construct one another. Thus, the linguistic magic we are playing with here is a co-constructed phenomenon. Historically, we can explore this dynamic in the process learning more about how we became what we are and, of course, what we might become (Rouse, 1987; Van Manen, 1991; Harding, 1998; Gale, 1999).

It is in a way humbling to understand these co-constructive dimensions of knowledge and culture. As humble cultural workers and educators we realize that we (all of us) have latent powers that are quashed by the logic of Western civilization and especially its educational institutions. In our work informed by this dimension of the critical complex epistemology we learn to use our latent powers and employ them for addressing oppression and ending human suffering. We ask why in the present culture of knowledge do scientific questions important to dominant power blocs and their profit margins take precedence over questions relating to pressing human needs. Contrary to prevailing "commonsense" social, cultural, and political economic forces help determine what science actually does from the beginning—how it works and what goals it seeks to accomplish. Scientific methodology—although one might not know from an examination of the way we educate researchers—always deals with issues of values, politics, ethics, and modes of representation (Bettis & Gregson, 2001). In this context, questions of the way power helps construct science and the knowledge it produces should always be raised. In a critical complex epistemology, they are.

Consciousness Is a Social Construction

Human consciousness is such a complex and bizarre phenomenon that many social and psychological scholars have literally ignored it, arguing that since it doesn't lend itself to empirical measurement it doesn't exist. One of the most understudied dimensions of human and social life over the last four centuries of Western science has to be human consciousness and its formation. While human consciousness like knowledge is a socially constructed phenomenon, this does not mean that consciousness is not a miraculous force that concurrently helps to shape the universe in which we live. Again, the notion of co-construction appears. In a FIDUROD-based research and educational context researchers, educators, and students simply don't analyze why they think about themselves in particular ways, the world in which they live, and their connections to that world. In FIDUROD's construction of consciousness men and women are not aware of the socio-cultural and epistemological

dynamics that shape them. As long as a "normal selfhood" remains unchallenged and the inequitable status quo is tolerated, contemporary education plods on without concern for the consequences of the way society constructs consciousness.

Indeed, a FIDURODian epistemology and the education it supports view cognition as a neutral process that takes place in a vacuum. A critical complex epistemology understands that thinking and acting in new ways always necessitates personal transformation; if enough people think in a new modality, social transformation is inevitable. This notion, of course, works in diverse and multifaceted socio-political ways. Knowledge and knowledge spaces help shape consciousness—and vice-versa. As we discussed in Chapter 8, these knowledge spaces—as in cyberspace—are constantly morphing in unexpected and profoundly influential directions. One aspect of a critical complex epistemology involves understanding the specific process by which such evolving spaces construct consciousness and the ways such dynamics affect how we engage the world and produce knowledge about it. Indeed, understanding this process is a key dimension of critical knowledge work.

Western commonsense induces us to think of our fellow humans as solitary, bounded entities, when in actuality we are rhizomatic beings who connect to everything around us via tentacles invisible to our naked eyes. Thus, consciousness is formed by everything with which we engage in the world. The notion hits us yet again, we are more complex social beings than Western science ever imagined. In contemporary hyperreality we are profoundly influenced by communications from commercial sources that help produce multiple selves in each one of us. As we are shaped by these forces, the boundaries of what has been viewed in the West as an inviolable selfhood begin to fade like a child's chalk writings on a sidewalk during a summer downpour.

Here, we become more and more aware of the social construction of consciousness and the limitations and distortions of the Western notion of the abstract individual. Under the flag of individualism, students are taught the "me-first" curriculum of self-gratification that makes us vulnerable to the sirens of capital with their consumption cosmology. Consumption as a raison d'etre in a world of self-gratifiers subverts critical notions of civic courage, democratic citizenship, loyal friendship, radical love, and egalitarian sexual relationships. Through capital's filter of consumptive self-gratification all of these notions are altered in a way that makes them more about us than the relationships they necessitate. As a critical complex epistemology helps produce a meta-awareness of the way consciousness is constructed, we become better equipped to critically analyze the nature of the individual, individualism, and the possibilities of interdependence.

One reason this situating of consciousness and its social construction does not occur in a reductionistic epistemology is that many of those involved in the knowledge production and educational processes do not have the historical, philosophical, sociological and cultural studies backgrounds to delineate what is involved in such practices. Concepts derived from these areas of study would help knowledge workers and pedagogues discern the ways that dominant power subverts self-awareness and politically democratic impulses in numerous places, including the social, epistemological, psychological, curricular and pedagogical. In the Western

globalized empire, representatives of dominant power operating in these domains work around the clock to construct the consciousness of individuals in ways that serve the interests of the dominant power bloc. Such power operates to make individuals more acquiescent to the needs of corporations, more accepting of market-driven governments and the needs of globalizing economic orders that benefit North America and Europe.

Understanding these political dimensions of consciousness construction is central to a critical complex epistemology. The notion of an abstract individual shaped outside the borders of the socio-political world is the tacit FIDURODian conception of "self-production." FIDUROD's abstract individual can reason, possesses individual autonomy, and can pursue *his* economic self-interest free from any socio-political and cultural constraints (L. Smith, 1999). It is this type of thinking that sees I.Q. as a realistic, objective depiction of an individual's innate ability—socio-political factors such as race, class, and gender in this conception and the oppression that surround them have nothing to do with I.Q. in this model. The complex modes of analysis promoted by a critical complex epistemology maintain that consciousness cannot be separated from history.

All human thought and activity take place in continuity with the forces of history. Contextualization is inseparable from consciousness and action. A central dimension of a critical complex epistemology involves bringing this understanding to the public. With such insight critical theorists begin to realize that consciousness is constructed by individual agency, individual will, and the ideological, discursive and regulatory influences of social forces. Yet again we return to co-constructivism: the self is both structured by forces and a structuring agent. Thus, consciousness is not constructed by socio-historical formations that wholly shape our ways of seeing; nor do free and independent individuals unhindered by the burden of history autonomously construct their consciousness.

Michel Foucault (1980) was always profoundly insightful in delineating the way that power blocs and epistemes operated in tandem to construct the way we engage on a daily basis with the world. In this context Foucault described a nuanced process of how individuals shape their own identities while concurrently being influenced by the power/knowledge they encounter. Western societies realized in the 1700s that is was much more efficient and effective to use power to shape individual consciousness in ways that resonated with the needs of the ruling class than to physically force citizens into compliance with the dictates of the regime. Thus, power shaped consciousness in what Foucault called its capillary expression—that point where power connects with the heart and soul of individuals, disciplines their bodies, shapes their attitudes, their language, the ways they learn, and their phenomenological level of existence. In such a disciplined society power wielders would not have to use violence as often, as they could count on citizens' individual consciousnesses to mold their behavior, their allegiance to the dominant power bloc.

It is much easier for those who come from cultural locations and social backgrounds different from our own to see the process of our consciousness construction. Because of the blinders crafted by our racial backgrounds, class location, and gender

awareness, we find it difficult to perceive this intricate process. It is always hard to see ourselves as others see us (Grof, 1993; Levy, 1997; G. Jardine, 2005). Though one of the goals of a critical complex epistemology is to accomplish this feat as much as is humanly possible. Yikes, self-consciousness is always in a fight to the death with ethnocentrism. Self-consciousness triumphs as we come to realize that our ways of seeing and being, our theological contemplations, our notions of ethical behavior are not the *only ways*. Thus, a critical complex epistemology pushes us to adopt a humble multilogicality that appreciates the power of difference. Employing our humble multilogicality, we cut our socio-psychological umbilical cord to the Western epistemology of FIDUROD. You are now free to move around the cabin—to explore the possibilities of reshaping human consciousness and our collective future.

I'm excited by the idea that an education guided by a critical complex epistemology becomes in part a genealogy of consciousness where students and teachers study the forces and the processes that produced their consciousnesses. No matter what the grade level, students from elementary school to graduate school can become scholars of the genealogy of consciousness. Our critical complex genealogy is a key step in our efforts to become more epistemologically savvy. Leaving behind our epistemological childhood, we move to a new level of self-awareness that is buoyed by its insight into the influential rhizomatic connections we make with the world. In my own personal genealogy I understand how much my interaction with the Baddaddies—referenced in Chapter 1—helped construct my consciousness.

After connecting with the affective power of the Baddaddies' music and the soulful dimensions of the early rock and blues coming out of the African American community of the era, I wanted something (an ontology?) that transcended the low-affect, often arrogant, bourgeois culture of the upwardly mobile who were supposed to be the models for those of us who didn't possess dominant cultural capital. I didn't want be like them and I didn't want their unreflective consciousness—hell, I still don't. I'm on the lam, still avoiding those who would attempt to construct my consciousness in this dominant cultural way. I still want to know how I can be something different and hopefully better. I still want my critical pedagogy to help shape self-conscious students who gain the capacity to imagine modes of consciousness that earthlings have never before imagined.

Political Struggles: Power Plays an Exaggerated Role in the Production of Knowledge and Consciousness

Throughout this book I have made the point time and again that the domain of epistemology cannot be separated from the politics of knowledge. The "critical" dimension of the critical complex epistemology revolves around the notion that epistemology cannot be conceived apart from the ideological and political domains. That power shapes epistemology on multiple levels, in the process creating modes

of knowledge and knowledge production, holds profound consequences for everyone who comes into contact with such information. Advocates of a critical complex epistemology understand that epistemic disputes are not only debates about knowledge produced concerning the nature of reality but are part of larger political struggles. All knowledge most criticalists now agree is produced within power-driven social and cultural practices and cannot easily be removed from the denotations and connotations that power renders attainable in a particular historical moment. A critical complex epistemology works to expose and challenge the might-makes-right dimensions of knowledge production in a colonialistic, corporate-driven, globalized empire.

Contrary to many critiques of dominant power's impact on science, a critical complex epistemology maintains that external influences of power—for example, a philanthropic funding agency that subsidizes studies that are in the best interests of corporate or patriarchal arrangements—are only one dimension of the way such forces shape knowledge production. FIDUROD's versions of scientific knowledge emerge in conjunction with these power relations rather than in resistance to them. As argued throughout *Knowledge and Critical Pedagogy: An Introduction*, power is implicated in the assumptions on which the Western reductionistic science is constructed. In this framework power often times is like a quantum entity, in that its location is ever elusive and is hard to locate in one particular domain of scientific work. Furthermore, it cannot easily be pinpointed as resting in the hands of one specific knowledge producer. It is web-like, distributed, and always seeking to hide itself from critical analysts. This is why it is so easy for powerful organizations and their representatives to deny their complicity in the exercise of dominant power and the oppressive knowledge it so often produces. Its web-like, rhizomatic nature makes it appear to be everywhere and nowhere at the same time—a great way to protect the power of power.

There is no doubt that dominant power blocs can and often do use epistemological power to quash those individuals who promote knowledge that is perceived as a threat to the status quo or to promote those whose information seems to support the interests of dominant power blocs. While these dynamics are essential to understanding a critical complex epistemology and the politics of knowledge, they do not address the way that dominant power is implicated—via the characteristics of FIDUROD, for example—within scientific knowledge production. Such internal effects of power on scientific knowledge production are particularly important because they are invisible to most observers of the scientific process and consumers of knowledge. Thus, dominant power operates in both the internal scientific processes of research design and methodology as well as in the external processes of censoring or promoting the knowledge that science produces. In both cases these activities result in the production and transmission of ideological knowledges, official propaganda for powerful interest groups, that perpetuate oppression and the dominance of the multiple power blocs that operate in the contemporary era.

In the information climate of the twenty-first century it is becoming increasingly rare to hear from spokespeople on the corporate media who are not the sanctioned

voices of a powerful organization. As they spin data about the issues with which they are concerned, they promote the narrow self-interests of their institutions. In such situations information is not disseminated as much as it is deployed to promote their agendas and influence. The growth of so-called think tanks has furthered disturbing trends in the relationship between power and knowledge as representatives of such foundations use their access to corporatized media to spout not measured research on particular issues but ideological justifications of the policies promoted by those who finance them. At the end of the first decade of the twenty-first century dominant power has produced a crisis of public knowledge. We see the effects of such knowledge production and dissemination in elementary and secondary schools with their standardized knowledges and indoctrination pedagogies that subvert open and unrestrained explorations of important scientific, social, and historical issues.

In higher education we see similar processes occurring with the privatization/corporatization of the knowledges produced and taught in such venues. What we call truth cannot simply be conflated with power, but certified truth and dominant power are always quite cozy in their illicit relationship. The politics of truth are always hanging over the head of those concerned with oppression and social justice. For those of us who operate in universities the aforementioned corporatist influences turn the overhanging politics of truth into the sword of Damocles dangling by a single horsehair over the head of academicians. I know that if I am too successful in raising these issues about the power dimensions of epistemology and the politics of knowledge the metaphorical sword is ready to do its bloody work. Indeed, if critical scholars provide too much interference in the corporatist, imperial university's effort to provide universal definitions that support their benefactors, they know they are nothing more than expendable commodities in higher education's twenty-first century logic of capital (Rouse, 1987; Saul, 1995; Ward, 1995; Harding, 1998; Fenwick, 2000; Steinberg & Kincheloe, 2006).

David Geoffrey Smith (2003) argues that in this contemporary corporatized, imperial context epistemological logics morph into their opposites and become a "Great Inversion." In this inversion corporatized knowledge production becomes incapable of addressing the broader grotesque realities unleashed by the new globalized empire. In this imperial knowledge order everything is rendered measurable by FIDURODian methods. Despite the growing disparity of wealth, corporate quarterly profits rise; despite an effort to use schools to stupidify the public, test scores increase; despite the political economic colonization of a poor nation, its Gross National Product (GNP) goes up. None of these measurable quantities tell the whole story. There is an underside, a hidden dimension in all of them that benefits dominant power while harming the least powerful. Certified knowledge in these and thousands of other contexts becomes a vehicle for promulgating great untruths (Saul, 1995; D. Smith, 2003). A critical complex epistemology recognizes dominant power's creation of a global knowledge crisis and is dedicated to bringing it to the international public's attention—and to the process by which their consciousness is constructed.

The Necessity of Understanding Consciousness—Even Though It Does Not Lend Itself to Traditional Reductionistic Modes of Measurability

One of the most important blind spots of traditional science, FIDURODian epistemology, and even mainstream cognitive and psychological studies themselves has been in the effort to come to terms with consciousness. In a critical complex epistemology it is necessary that we gain a deeper and thicker understanding of consciousness than presently exists in the scientific establishment. Thus, criticalists understanding the centrality of consciousness to every dimension of critical pedagogy and knowledge production focus much attention on this dynamic. Always prescient, Francisco Varela (Scharmer & Varela, 2000) understood early in his career that special research methods needed to be devised to study the bizarre, unpredictable world of consciousness. We know about the physiology of the brain, he maintained, but we don't know about the nature of consciousness—and consciousness may be the most sophisticated dimension of being human. What an epistemological irony this is: the most amazing phenomenon yet discovered is often dismissed because its makeup doesn't fit with our mechanistic epistemological assumptions and thus our research capabilities.

Several decades before Varela's work, the great Russian psychologist Lev Vygotsky was also concerned with a science that had not developed either an interest or methods of studying the development and nature of human consciousness. In this context Vygotsky maintained that the study of consciousness must involve more than traditional empirical notions of "direct evidence." The psychological student of consciousness must be more like a crime investigator and make use of indirect evidence and circumstantial insights such as the manifestations of consciousness in aesthetic productions, literary work, philosophical treatises, and various forms of anthropological data (Kozulin, 1997; Vygotsky, 1997). The implications of Vygotsky's contemplations for a critical complex epistemology in general and the study of a phenomenon such as consciousness in particular are profound. Even at the end of the first decade of the twenty-first century such 80-year-old ruminations can revolutionize the way we explore consciousness.

The point is so obvious that it should not have to be made here—but this is unfortunately not the case: consciousness is central to what it means to be human. Phenomenologists have traditionally argued that the study of consciousness within traditional science has been limited by two central factors: (1) consciousness is unlike any other phenomenon found in the cosmos; and (2) most dimensions of consciousness cannot be appreciated using the mechanistic epistemology of positivist science and the methods of direct observation and measurement it sanctions. Indeed, consciousness cannot be studied in the same way a structural engineer might examine a bridge (Husserl, 1970; Steward & Mickunas, 1974; Schwandt, 2000).

Varela is again helpful, here, as we are faced with the development of a method of studying consciousness. In his work on consciousness Varela drew upon sources as diverse as phenomenology and Buddhism to construct a method he labeled, suspension.

Varela uses the term, suspension, to refer to humans' amazing ability to take themselves out of the contemporary West's "normal waking consciousness" and its habitual ways of ignoring and repressing the multidimensional states of consciousness all individuals are capable of achieving. In this context, Varela argues, we can learn more about consciousness and its diverse dimensions by moving from a first person perspective to a third person vantage point. Here we can begin to see dimensions of consciousness that were occluded by our immersion in the "I" of the first person. We can begin to discern more clearly the constructed and constructing nature of consciousness (Scharmer & Varela, 2000).

Adding to Varela's insights on the study of consciousness is the work of curriculum scholar, William Pinar. In his notion of *currere* (the Latin root of the word, curriculum) Pinar develops an epistemologically grounded research method for studying students' consciousness of their educational experience. In *currere* Pinar takes phenomenology and runs it through the insights of psychoanalysis and aesthetics providing us with a profoundly valuable insight into the inner world. Like Varela, Pinar is attempting to get us beyond commonsense, that which we take for granted in consciousness. As we loosen our identification and association with the substance of our socially constructed consciousness, we begin to gain a degree of conceptual distance—a meta-perspective on our psyche. In this new mindspace we are better equipped to view those modes of consciousness that are shaped by cultural conditioning and unconscious obedience to the manipulations of dominant power (Pinar, 1975, 1994, 1999). Employing our critical complex epistemology in conjunction with Varela's suspension, Vygotsky's indirect evidence of consciousness, and Pinar's *currere*, we can devise a synthesis that opens a new era of knowledge production in the study of consciousness.

Thus, a critical complex epistemology cannot separate itself from the effort to study the multidimensional nature and the social construction of consciousness. Knowledge workers guided by our epistemology employ the aforementioned methodologies along with the textual analysis of hermeneutics to gain new levels of self-awareness. Such self-awareness is important not only for its intrinsic value but also for the way it contributes to our sophistication as knowledge producers and educators. As critical complex analysts situate themselves historically and socially, they gain the ability to see things about themselves and the world never before imagined. Thus, they are empowered to make informed decisions about who they want to become and how they will cope with the imperial ideological forces that permeate hyperreality.

The Importance of Uniting Logic and Emotion in the Process of Knowledge and Producing Knowledge

A critical complex epistemology is dedicated to using both the logical and emotional dimensions of the human mind in research, knowledge production, and pedagogy. In such a synergy our logical understandings of the world take on far more complexity and insight when combined with the variety of ways humans know through affect and feeling. One of the reasons that many forms of religious fundamentalism

have experienced great success in the contemporary era is that they are unafraid of tapping into the power of human emotion. Of course, there are a multitude of factors—e.g., the belief that they and they alone have the truth—that make fundamentalism in any religion a dangerous and divisive force. But fundamentalist leaders do understand that people living in the hyperrational, imperial world often feel a need to connect to the emotional power of human consciousness.

FIDUROD is simply unable to deal with the possibility that valuable knowledge and insight can be gained via emotional forms of knowing. Thus, Western science encounters a profound epistemological problem, as fidelity to objective, rigorous science as it is defined in the mainstream of science disallows use of some of the most powerful aspects of human perception. The ability to cultivate and make meaning from our emotional "gut" feelings, our intuition, and our imagination is central to the next stages of human evolution. In the colonial matrix constructed by imperial power, logic is the province of male Westerners from upper-middle and upper class locations who have been properly educated. Emotion, intuition, and the imagination are associated with women and non-Western peoples from colonized and indigenous backgrounds. Such ways of knowing, of course, are placed on a hierarchy of civilization with—and I know this is hard to believe—logic taking precedence over emotion (Thayer-Bacon, 2000, 2003).

The Italian critical philosopher, Antonio Gramsci was well aware of these epistemological issues as he wrote in his notebooks in Mussolini's prisons in the late 1920s and 1930s. Scholars, he maintained, commit a profound epistemological error when they trust that a person can know without "feeling and being impassioned." An example of connecting logic and emotion from Gramsci's perspective involved critical scholars' ability to "feel" the passions of the people and connect such emotions to their analyses of oppression. In this context, such an emotional connection could facilitate critical scholars' and oppressed peoples' efforts to appreciate the lived world impact of their location in history and the ways subjugation plays out in the construction of consciousness.

Thus, the identification of socio-cultural and political economic forces is not the only task of the critical scholar. As one identifies the structures of power, he or she must both interpret and experience their affective consequences. Without this emotional dimension I believe that it is hard to change the oppressive social order in a way that creates history. The impediments to such a transformative activity are so great, the work so hard, the personal costs so high that it is much easier for individuals to opt for an easier and more personally aggrandizing path. Even those who are originally committed to such work fall into the trap of hierarchical formality where a logic of bureaucracy shapes the relationship between "the intellectual" and "the people." The intellectuals move to the higher rungs of the organizational ladder, in the process taking on the benefits of a higher caste (Gramsci, 1988). It takes powerful ideological vis-à-vis affective commitments to subvert such tendencies of privilege.

A critical complex epistemology takes these emotional/affective dynamics very seriously. In this context an evolving critical pedagogy understands that contemporary Western peoples' incapacity to emotionally appreciate the effects of what dominant and colonial power has done and continues to do to themselves, to their less-privileged

brothers and sisters, and to the health of the planet is in many ways a form of large-scale social pathological behavior that in the long run will destroy the human species. There are many horror movie-like scenarios by which such destruction can take place—ecological disaster, nuclear war, biological calamity, unbridled terrorism, etc. The point is that as a market-driven social mobility becomes the goal of more and more of the earth's people, wealth keeps being distributed in grotesquely unfair ways, economic development takes precedence over any concern for ecological consequence, ad infinitum, a form of mass suicide takes place.

If we cannot emotionally feel the suffering such mass psychosis is causing and will continue to cause large groups of people then we are existentially dead. We are the human casualties of an emotional narcissism, the capacity of power to construct our ideological and affective consciousness, and FIDUROD's ability to decontextualize knowledge production to the point that we are unable to discern connections between a wide variety of phenomena and their injurious effects. A critical complex epistemology understands that it has an important role to play in the effort to reverse such frightening tendencies. As such a way of seeing reconnects logic and emotion it induces us to care about these stark realities, to overcome our individual quests to confuse the boredom of contemporary life with short term adrenaline rushes, and to tap into the libidinal energy within all of us in a critical effort to work together to avoid irreversible damage to human life.

I am often amazed by the contemporary social, political, and educational arrangements that produce boredom among children and young people. With so much to do to avoid catastrophe in the social domain, with so much creative potential combined with libidinal energy in the individual realm, there is no reason for young people or old people for that matter to be bored in their life. A critical pedagogy is dedicated to engaging affect in an effort to relieve such boredom—in the process changing the world and avoiding continuing disaster for the human species. Dominant Western power, its upwardly mobile class ambitions, it epistemological and ontological ways of seeing and being have created large-scale social problem with intimacy, an inability to connect emotionally with other people and especially other individuals in different cultures and socio-political settings.

In such a context a critical complex epistemology works to create knowledges that strike an emotional-intellectual chord in the collective consciousness of humanity. In this context feminist theorists help contribute to a critical complex epistemology's ability to critique the patriarchal dynamics that have operated to further this pathological approach to affect and emotion. FIDUROD's objectivity is directly connected to dominant forms of masculinity and its effort to not only separate emotion from both the epistemological and ontological realms but to take control over such dynamics (McClure, 2000). Thus, one of the goals of Western science has been to remove feeling/affect from the process of knowing and the process of being. The mechanistic dimensions of such central dimensions of being human are profoundly implicated in the mess in which the world currently finds itself. Indeed, the epistemological dimensions of the separation of logic and emotion rest at the core of what criticality is all about.