

## Chapter 10

# The Conclusion Is Just the Beginning: Continuing the Conceptualization of a Critical Complex Epistemology

There is so much more to deal with relating to these issues, especially in the way that constructing new epistemologies may be central to human survival. While this is no short book, it is merely an introduction to these knowledge-related issues and their impact on numerous dimensions of human life including the production of selfhood, power relations, the dynamics of colonialism, and ecological sustainability and its implications for the planet's future. These are grandiose claims, admittedly, but I don't believe that such ostentation discredits their reality and importance. As I come to this last chapter of *Knowledge and Critical Pedagogy: An Introduction*, I realize how much more I have to write on the topic. I am already planning new books and articles that pick up where I leave off here. With these understandings in mind, I'll bring this book to a close with a description of a few more dimensions of a critical complex epistemology.

### The Inseparability of the Knower and the Known

As we have discussed throughout this book, knowledge is something humans produce—it is not sent by God or by the aliens who the *National Enquirer* claimed spoke to President Bill Clinton and Brad Pitt. Beings who came from particular places and times have constructed what we call valid knowledge—these knowledge producers were individuals with many of the great strengths that humans can develop and with many of the weaknesses that afflict all of us who claim to be human. Thus, knower and known are inseparable dimensions indelibly connected to anything we call knowledge. With this in mind a critical complex epistemology understands that any rigorous knowledge work involves studying the construction of the selfhood of the knower and the impact it has on what any group of people claim to know. In this context we gain a profound appreciation of the fact that all knowledge is inscribed with temporal, spatial, ethical, and ideological factors that shape the consciousness and vision of the knower, the knowledge producer.

Over the last several decades the notion of objectivity has been debated over and over again in the domains of science and philosophy. The FIDURODian concept of seeking objectivity (defined as being detached from and disinterested in a phenomenon

being studied—a state viewed as facilitating neutrality and thus helping bring about accuracy in the production of knowledge) and avoiding subjectivity (the view of a phenomenon that rests in the mind of the observer producing a view of the world grounded on individual perspectives, attitudes, and feelings on object of study not neutral facts) is central to traditional scientific notions of rigorous research. One of the points I have made throughout this book involves the notion that any epistemology must account for the interaction of the perceiver with the reality he and she encounters. Thus, this is what we mean by the interaction of the knower and the known. Numerous analysts have attempted to deal with this basic epistemological problem by maintaining that any position that fails to discern the co-construction of knower and known misses a central dimension required of rigorous, thick knowledge production.

In this effort to signify the connection between knower and known some scholars (Talbot, 1993) have avoided the use of the terms objective and subjective, substituting instead the word, “omnjective.” This brings us to one of the central issues involving knowledge and critical pedagogy—the relationship that connects knowledge, researchers, and the phenomenon being studied. Indeed, one of the key differences between FIDUROD and a critical complex epistemology involves the role of the researcher. In a FIDURODian context knowledge producers must distance themselves from a study. This could be illustrated by a group of researchers standing behind a one-way mirror observing the behavior of selected individuals in order to minimize prejudice believed to come from too much personal familiarity with the human subjects of the inquiry. A more critical approach to this interaction might be exemplified by researchers who enter into the culture of those individuals being studied working with them in relation to a problem they are facing. In the process the researcher engages the individuals being studied as co-researchers in the project, carefully considering their perspectives on the issues in question.

Obviously, these two approaches constitute very different epistemological perspectives on the interaction connecting knowledge, researchers, and the phenomenon under study. Thus, the FIDURODian researcher remains as anonymous as possible, while a critical scholar understands that his or her input into a study, his or her subjectivity, must be viewed as an important and transparent aspect of the process of inquiry. How, critical researchers ask, can we remain disinterested and anonymous when our concerns, values, experiences, ideology, language, race, class, gender, and sexuality help shape everything we do in a study. As enactivist scholars Umberto Maturana and Francisco Varela (1987) have argued, the world of phenomena is a province that is *brought forth* by the actions of the observer—that is, it is enacted by the researcher in relation to the world. Thus, in a more constructivist epistemology researcher and researched are not only part of the same process, they actually bring one another into being (Chiari & Nuzzo, 1993; Thayer-Bacon, 2000; Bettis & Gregson, 2001; Thomson, 2001; Thayer-Bacon, 2003).

Thus, in a critical complex epistemology our understanding of the nature of the relationship between knower and known adds to the quality, the rigor of both studying knowledge production and the act of research itself. Indeed, scholars and their scholarship encounter profound problems when they analyze knowledge claims without carefully studying the process by which such claims are formulated. As the

great physicist, Werner Heisenberg (1963) put it so eloquently decades ago: “what we observe is not nature itself, but nature exposed to our method of questioning” (p. 58). Implicit within Heisenberg’s observation is the necessity of studying the complex set of relationships that lead to particular methods of questioning. One could argue that such a study is called epistemology. On one level it seems obvious that what emerges as knowledge depends on the questions that are asked about a topic. This understanding is central to any critical theory or critical pedagogy, for it helps open the vault that holds covert insights into why certified scientific knowledges, disciplinary canons, and official curricula contain certain “facts” but exclude others.

Without such epistemological insights we are unaware of the way the relationship between knower and known operates to shape both our consciousness and what we perceive as the world. Without these insights we are oblivious to what we mean by the assertion that the asking of questions is a form of world making. In the vacuum left by an absence of epistemological understanding in general and the relationship of the knower and the known in particular, knowledge can never again be viewed as the uncovering of disinterested, neutral, objective truth. Concurrently, education can never be seen as the deliverer of universal truths to students. Knowing and human being come into existence only in the context of particular socio-political and cultural relationships.

And out of these complex, multiple interactions come the human judgments about the way various physical, social, cultural, political, pedagogical, etc. phenomena fit together and make sense. The nature of the interconnection between knower and known in these larger contexts makes knowledge, indeed, creates the world. “Facts” simply don’t exist without interpretation, and even if such a phenomenon were possible such data would be nothing more than a conglomeration of random and meaningless fragments until brought together by human consciousness (Capra, 1996; Hatab, 1997; Parker, 1997; Thayer-Bacon, 2000; Dougiamas, 2002; Thayer-Bacon, 2003). The nature of the knower and known, you ask. They’re cousins, identical cousins connected at the spine.

## **The Centrality of the Perspectives of Oppressed Peoples—the Value of the Insights of Those Who Have Suffered as the Result of Existing Social Arrangements**

As discussed through out this book, the notion of criticality at its core revolves around the effort to understand the causes of human suffering and to do what is necessary to end it. A critical complex epistemology begins with the effort to internalize the nature of this suffering and to use such an understanding as a grounding for not only all knowledge that we produce but also to reshape who we are in the world. I know that I am a different person, and I see myself, the world, and my work in the world from alternative perspectives because I am constantly aware of the existence of human suffering in the world. Opening oneself up to the suffering

of others is part of the ontological process that makes us fully human. Developing a sensitivity to the causes and nature of dispossession, deprivation, and pain of our brothers and sisters in diverse social locations is a central task of a critical pedagogy. Of course, since this emotional understanding shapes all knowledge we produce, it is also a central dimension of a critical complex epistemology.

I have written extensively on the power of subjugated and indigenous knowledge in this book and other work (see Kincheloe & Steinberg, 1997; Semali & Kincheloe, 1999; Kincheloe & Steinberg, 2007) so I will make this section short. It is so essential for criticalists—especially males and individuals from North America—to listen carefully and learn from the insights of individuals who are subjugated by existing socio-political, cultural, and pedagogical relationships. A central dimension of the process of decolonizing knowledge comes from this critical listening and exposure to diverse perspectives. Drawing on Foucault (1980) and his insistence of employing these so-called “inferior” knowledges is key to the critical project. In his studies of power Foucault appreciated that power always elicits a form of resistance from those who are oppressed. In this resistance, in this insurrection of subjugated knowledge, a critical complex epistemology finds a central source for understanding the socio-political, psychological, and educational domains.

Obviously, one can uncover these subjugated knowledges around issues of race, class, gender, sexuality, ability, colonialism and even age. In this age-related context researchers have often disregarded the insights of children in larger efforts to regulate and shape children’s behavior in ways that resonate with dominant power blocs. In work on the nature of contemporary childhood (Steinberg & Kincheloe, 2004), my colleagues and I have been amazed at the way children’s voices are consistently dismissed even in an era where children’s knowledges of the world have become profoundly insightful and certainly worthy of inclusion in research on a wide variety of domains. In many ways this concern with subjugated insights brings us back to the importance of standpoint epistemologies in a critical complex politics of knowledge. Standpoint epistemologies coming from people who find themselves oppressed in some location(s) along the multiple axes of power provide critical pedagogues, critical researchers, and critical activists with initial frameworks for beginning an analysis of a particular phenomenon that leads to informed, contextualized, and pragmatic action.

In this knowledge domain researchers/scholars/activists can gain perspectives that have been erased in FIDUROD and the dominant power-saturated knowledges such an epistemology produces. Again, this notion comes with a caveat—there is no essential, final, intractable subjugated perspective on the way the world operates. Thus, there is no correct place from which such insights take us to begin our journey into subjugated knowledges and the insights they provide. With every research project, with every effort to engage in anti-oppressive labor in the world, we must explore the subjugated perspectives available and make our decision about where to start in the context at hand. Moreover, the space from which a standpoint epistemology is developed is not deterministic—that is where one stands or is placed in the web of social reality does not determine how one sees the world. A critical complex epistemology will have to analyze diverse perspectives of subjugated people

coming from basically the same socio-political, spatial, and temporal locale. This is why I call it a critical *complex* epistemology instead of merely a critical epistemology (Kincheloe, 1995; Harding, 1998; Shoham, 1999; G. Jardine, 2005).

## **The Existence of Multiple Realities: Making Sense of a World Far More Complex Than We Originally Imagined**

The more we know about the world, the more we understand the complexity of both human consciousness and the social and physical worlds we inhabit. Because of the social construction of knowledge and consciousness, we are acculturated from infancy to discern only a tiny dimension of what our culture designates as “reality.” Our cultural context, the tacit epistemologies and ontologies to which we are exposed, and, of course, the machinations of dominant power, undermine our ability to see beyond the reality we expect to see. Thus, we are limited beings who in contemporary Western societies operate in a restricted conceptual framework that blinds us to aspects of the cosmos that fall outside our matrix. Alfred North Whitehead (1968) argued that humans need to be open to a variety of modes of evidence, for once we epistemologically close ourselves off to diverse experiences we lose touch with the encounters that may be the most valuable in helping us shape our future in a just and creative way.

Indeed, it is in our encounters with this new evidence that we begin to appreciate the diverse dimensions of existence, the multiple realities that continue to emerge as we study the world. The epistemological explosions that occur as we begin to integrate consciousness, body, context, and relationship are central to a critical complex epistemology. Such detonations of knowledge, are held in check by a variety of factors from Western colonialism, to corporatized media and its informational politics, to FIDUROD. Language as it now exists is also a limiting factor in our efforts to explore the multidimensionality of the cosmos, as we have no way of expressing the complexities that emerge when our conceptual lenses are readjusted. There is no limit to the types of languages we can develop as we break away from the socio-linguistic blinders of Western culture. Indeed, in this context we can develop new telepathies of now invisible modes of expression. The quickest way to get to these new modes of communicating, thinking, and producing knowledge is to explore the previously dismissed, to take seriously subjugated perspectives, and to dedicate ourselves to learning from difference.

Engaging in these activities we remove the numerous obstructions to connecting with and beginning to understand multiple realities coming from the perspectives of “others” and the dark alleys of the universe with which we are presently unfamiliar. A critical complex epistemology provides laser surgery to remove the epistemological cataracts from our lens of perception. The number of interpretations that creative analysts can bring to any set of scientific data reminds us of how differently diverse scholars might make sense of any single phenomenon. Understanding that these diverse interpretations exist is not a detriment but a great benefit to scholarly

rigor. There is an epistemological parochialism that insists there is one level of reality. Such parochialism is exacerbated to new level of insularity when that particular level of reality is viewed as the one constructed by the dominant power of one's particular time and place—"my reality." Advocates of a critical complex epistemology are so in awe of the *mysterium tremendum* (the overwhelming mystery) of the world, that they find it impossible to simply rule out any new terrain of knowledge or mode of consciousness because it doesn't fit existing Western ways of seeing and being.

The transgressive idea in the FIDUROD-saturated contemporary West that what passes as "reality," "consciousness," and "reason" are mere social constructions in our infinitesimally tiny spatial and temporal sliver of the cosmos is profoundly frightening to those reductionists who accept dominant "truth." The Western scientific quest for certainty has created a mindset that soothed the collective cultural consciousness with a belief that we have it all correct. Challenges from concepts such as the critical complex epistemology in this context are not represented as simply different points of view, but as threats to "our way of life" (Griffin, 1997; McClure, 2000; G. Jardine, 2005). The fact that many people are beginning to realize that "we" might not have it all right—especially when they have encountered no alternatives to the FIDURODian perspective—has the bourgeoisie running for the Prozac and the Valium. The fraternity just ordered seven kegs for Thursday night. And BTW, do crystal meth and Oxycontin ease the anxiety?

The sense that we might not have it right is enhanced when we begin to understand phenomena such as emergence and autopoiesis. In this context we realize that traditional Western science has found great difficulty dealing with the idea that various physical, biological, and social systems generate their own organization. As they constantly reproduce the organizational structure that created them in the first place, they autonomously move to new levels of complexity and capability. In this context we understand that there are multiple levels of reality that transcend traditional Cartesian-Newtonian ways of seeing the world. Not only does the interaction of observer-observed create diverse realities, but currently inexplicable forces of time, space, matter, and consciousness *interacting in autopoietic relationships* create new dimensions of reality that we are yet unable to even name. The new ordering codes in the physical, social, psychological worlds change all the rules we thought we had identified. When Westerners ignore these new domains, these multiple realities, they incorporate the pathological dimensions of FIDUROD's one-truth epistemology into their consciousness. They destroy the innate possibility and excitement that such new modes of reality make possible.

Understanding the nature of consciousness and its role in epistemology, ontology, the socio-political domain and pedagogy is a never ending quest—every year that goes by we gain new insights into consciousness and its connection to matter and what has been referred to as reality. There is much speculation among scholars from a variety of disciplines that consciousness is not bound to traditional notions of the space-time continuum. In this formulation consciousness is the grounding out of which all energy and matter arise—the reality in which energy and consciousness exist cannot be separated from consciousness. Thus, consciousness is a yet to be understood phenomenon that may consist of more dimensions than previously

understood. Western society's focus on normal consciousness as the only state of mind worth addressing and even then in the most narrow of ways is a major impediment to the development of a critical complex epistemology and its understanding of multiple realities (Goswami, 1993; Bridges, 1997; Lutz et al., 1997; Varela, 1999; McLeod, 2000; Scharmer & Varela, 2000).

The interaction of time, space, matter, the social domain, and consciousness is one of the most intriguing issues of our time. How can criticalists see the world anew, in a way that allows humans to view diverse aspects of reality hidden to contemporary Western observers? How can the new insights that come from these experiences shape understandings that allow us to take actions that profoundly change a suffering world?

There is a great potential to be found in these multiple realities, the multidimensional nature of human consciousness, and the social, cultural, cognitive, and political economic actions these dynamics make possible. These issues are directly connected to a critical complex epistemology and a critical politics of knowledge.

The relationship between mind and matter is obviously an epistemological (and an ontological) matter. Does consciousness actually shape the physical universe? *We know it shapes the social universe.* Is consciousness made of a cloth that interacts in some presently unknown way with what we now call matter? A critical complex epistemology makes sure that such phenomena in general and such questions in particular are central features of the contemporary information environment and that they inform everything that takes place in a critical pedagogy. I would not be spending the thousands of hours it takes to address these issues if I didn't believe that a critical complex epistemology helped provide us a key to discern the multiple realities obscured by Western science that can help unlock the door to a new vision of humanness and human action.

FIDUROD has placed matter as the most important dimension of "true reality." This is not surprising in an epistemology that assumes the existence of a material, mechanistic universe. What a different set of realities we encounter when we contemplate the possibility that the uni(pluri)verse consists as much of mind/consciousness as it does of matter. If this is the case, then we return to our idea that reality exists in part because we can imagine it existing in a particular way. In this context multiple realities exist because our consciousness can conceive of them. Knowing this we can create awe-inspiring avalanches of knowledges, concepts and spectacular ways of being (Peat, 1989). Foucault (1980) understood many of these dynamics as he examined the nature of epistemes and **positivites**—knowledge-related phenomena that exist on a different level of reality, an enfolded order, than our everyday encounters with information. Thus, we gain a hyperdimensional epistemological awareness—a recognition of the divergent dimensions of reality that tacitly shape human life.

Superstring theory in physics postulates that there are ten, eleven, or 26 dimensions of space-time, depending on which variant of the theory you reference. Quantum physics has taught us for decades that the world is more like an organism than a mechanism. When quantum physicists study the interaction between two electrons they find that despite the great distance that may separate them, they react

simultaneously when placed under observation. Thus, it seems obvious that the highest levels of research in the high status realm of physics reveal a pluriverse, a world of multiple realities even at the physical level (Goswami, 1993; Wolf, 1993). A critical complex epistemology understands that multiple realities also exist at the social, psychological, and pedagogical levels. In a critical complex epistemology we gain the ability to travel between different dimensions bringing the insights and concepts found in one domain to another dimension. In this way we begin to view one dimension through the logics of another. Profound advances in all domains of human endeavor can be made when we engage in this trans-dimensional travel. Just the journey back and forth between epistemology and pedagogy changes forever the way, for instance, that we conceive of the purposes of the acts of teaching and learning.

### **Becoming Humble Knowledge Workers: Understanding Our Location in the Tangled Web of Reality**

In our epistemological ruminations we have learned that despite the FIDUROD data machine and the corporatized politics of knowledge that knowledge can never be decontextualized and separated from particular value assumptions. All significant information emerges from a particular context, from a particular location in the web of reality. With this in mind a critical complex epistemology studies the complex process by which one's location in the socio-physical web of reality helps shape the knowledges particular individuals produce in different times and places. An individual raised and acculturated in a specific temporal and spatial locale will be exposed to diverse dimensions of the natural world, divergent cultural belief structures, and idiosyncratic relationships to the numerous power blocs discussed in *Knowledge and Critical Pedagogy: An Introduction*. While critical pedagogues focusing on the politics of knowledge may clearly discern these forces at work in the socio-cultural and political economic domains, they often neglect the role of the physical environment in shaping this web of reality.

Knowledge production is inseparable from place (Kincheloe & Pinar, 1991)—indeed, in indigenous cultures, for example, we see the relationship between knowledge and land very clearly (Semali & Kincheloe, 1999). The modernist West's alienation of human beings from their physical locations has, no doubt, undermined this connection to the natural environment. Many inhabitants of Europe, North America, and other “developed” domains around the world cannot yet comprehend the sophisticated insights many indigenous people produce in regard to the physical web of reality surrounding them. Even those Westerners growing up in the most alienated urban/suburban spaces, however, are still epistemologically and ontologically influenced by this notion of place—whatever that place may be.

When the native peoples of Alaska see snow they are not inventing it. Instead, they are operating in their physical web of reality to make sense of a natural world



phenomenon that native peoples in the Torres Islands between Queensland in Australia and New Guinea, for example, don't experience. The way the Inupiat, Yupiks, Aleuts, and many other native peoples in Alaska distinguish patterns in their analyses of snow based on their numerous experiential encounters with it has constructed an invaluable body of knowledge about the phenomenon. Obviously, where these peoples stand in the web of reality helps shape their perceptions and the knowledges they produce. In this context, as I have previously maintained, where we are located in the web of reality does not *determine* the knowledge we produce or our consciousness. All peoples must use their ingenuity to construct compelling knowledges and to cultivate critical consciousnesses.

Understanding is always connected to tangible circumstances, embedded in cultural contexts shaped by historic hermeneutic conventions, and affected by the power relations of the moment. A critical complex epistemology is acutely aware of these dynamics and knows that moving to a higher level of insight and knowledge production demands that we appreciate the way they operate in our lives. Any geo-politics of knowledge, any critical complex epistemology, and any critical pedagogy account for and act upon these realities. In such accounting and acting critical workers know that there are benefits and liabilities to seeing the world from a particular location in the web. The salient point here is that to be unaware of these epistemological dynamics is to ensure that limitations will outweigh the benefits of our "standpoints." If we are unaware of how our experiences and situations shape our knowledges and insights, we will undoubtedly be oblivious to the ways that dominant power insidiously works its black epistemological magic. In our conceptual coma there is no challenge to oppression and the human suffering it ensures (Rouse, 1987; Capra, 1996; Harding, 1998; Mignolo, 2001; D. Smith, 2006; Leisty, 2007).

Ignorance is a more subtle concept than Westerners have traditionally understood it to be. "Ignorance of what" becomes a very important dimension of how ignorance is designated. In a FIDUROD-based epistemology ignorance is typically used to denote a deficit in relation to a universal body of knowledge—a corpus of information that does not include data from one's immediate surroundings, one's appreciation of her place in the web of reality. Moving from the epistemological to the pedagogical, we can begin to discern profound implications for teaching and learning. A critical complex epistemology grounds a critical pedagogy that understands that all individuals bring particular knowledges to the educational table. In such a context criticalists believe that teachers should be aware of such information and use it in every way they can to move the students to an awareness of the knowledges that others bring to the same table. Here we come to appreciate again the benefits and liabilities of our own vantage point in the tangled web of reality.

As a critical complex epistemology focuses on specific occurrences, unique individuals, and the places people inhabit, it concurrently seeks to understand their interconnections, their mutual influences on one another, and the knowledges that emerge in this interaction. Criticalists ask what happens when we place these dynamics within the larger contexts of physical, social, cultural, political economic, and other dimensions of the world. Thus, the particular and the whole are both valued in a complex epistemology, but always within a historical context. Individuals

informed by a critical complex epistemology understand these ways of seeing and use them to enhance their analytical abilities. As they improve their ability to make meaning they always do it in a way that manifests their humility—their understanding of the limits of their perspective. Indeed, the more we understand the web of reality and the ways we are enmeshed within it, the more we appreciate that humans are incapable of gaining a providential perspective on the cosmos and themselves.

We must all kneel at the epistemological alter and confess our subjectivity, the idiosyncrasy of our perspective, the shortcomings of our knowledge. Without such epistemological supplication to our students, our readers, our fellow cultural workers, critical educators will be caught in the bear trap of the vanguard intellectual, the *man* with the answers, the expert, the arrogant being who calls for an abstract notion of equality, but who treats those below him or her on the status ladder as the unworthy. Professing new perspectives, not truth, humble criticalists work toward social justice and the elimination of human suffering. Such critical scholar-teachers are mindful that any interpretations they might offer are tenuous because they don't have access to the long view of history, knowledge of yet unidentified patterns of which they are unconsciously a part, and the power influences of which they are unaware (Levy, 1997; Harding, 1998). We are all affected by our particular location in the Great Cosmic Spider's web of reality. And as the half human, half fly insectman cried out from the spider web in the 1958 version of the movie, "The Fly": "Help me, help me." Don't worry insectman, a critical complex epistemology is on its way.

### **Standpoint Epistemology: Locating Ourselves in the Web of Reality, We Are Better Equipped to Produce Our Own Knowledges**

The feminist theoretical notion of standpoint epistemology helps advocates of a critical complex epistemology better understand their location in the web of reality and produce thicker, more rigorous, and more usable knowledges. Drawing on subjugated knowledges, the ways of seeing of those who have been oppressed by dominant power blocs, standpoint epistemologies provide critical perspectives not only on patriarchy but also whiteness, capital/class elitism, heteronormativity, colonialism, and other forms of oppression. With these perceptions at the front burner of a multilogical critical consciousness, new cognitive and conceptual domains are provided to knowledge producers. Such insights change their ways of seeing and being and open new intellectual and activist vistas for their analysis. A critical complex epistemology uses these perspectives to initiate dialogues with various forms of Western knowledges—especially the so-called "northern" critiques à la the Frankfurt School of critical theory, feminism, critiques of racism, **queer theory**, poststructuralism, and other transgressive discourses from the European tradition.

As one would anticipate, standpoint epistemologies arise at a particular historical moment in a specific socio-cultural location. While they address particular issues

of their *Zeitgeist*, they produce ways of seeing that may have relevance in diverse places far into the future. Of course, one accounts for the origins of such epistemologies and the knowledges they support—but a critical complex epistemology maintains that this is a key feature of all knowledge work. Criticality's use of such ways of seeing exert a huge difference in the nature of knowledge production, as they force researchers and educators to begin their information work—their research and curriculum development—somewhere other than from the center of oppressive power. In such a context the knowledge frameworks used in a variety of contexts come from women, queer individuals, colonized and indigenous peoples, and the targets of racism, class bias, and religious hatred. With standpoint epistemologies we return once again to Hegel's attention to what the slave has to say about the master and the workings of chattel system in general.

In many ways standpoint epistemologies are not as unusual as the Western scientific eye may assume. While there is no doubt that they are local epistemologies and knowledges, a critical complex epistemology asserts that all knowledges are to a major extent local. Indeed, mainstream science is always appropriating local knowledges to extend its intellectual and socio-political objectives. An obvious question arises: where does FIDUROD's universalistic science end and local knowledge begin. Because of the local dimension of all knowledges and the problems with the effort to universalize such knowledge, the question is impossible to answer. The "borderlands" dimensions of standpoint epistemologies that lead to interactive conceptual frameworks—to a bricolage of different perspectives—help us specify the principles, benefits, frameworks, and discursive practices that shape the modes of knowledge production that dominate our historical and spatial moment. In a critical complex epistemology this is an invaluable service. Indeed, in this context we begin to understand that a standpoint is not only a perspective but also a form of critical political labor to understand and challenge the hidden constructs that structure macro-social realities and the phenomenological lived worlds of individuals.

Thus, we are back to our central point: standpoint epistemologies help us understand the interrelationships between diverse knowledges and power matrixes that form the web of reality. It helps criticalists develop the 3-D vision to see through the lead walls of power that hide the structures shaping social life. In this context our ability to produce knowledge in ways that resonate with our beliefs and concerns is enhanced, as we become better informed of the power inscriptions on the methodologies, designs, conceptual matrixes, etc. that shape hegemonic forms of research. Concurrently, of course, these same dynamics are used to help construct and justify socio-political and educational realities often created to serve the needs of the elites who occupy dominant power blocs. Standpoint epistemologies from racial, class, gender, sexual, colonial, and many other perspectives grant us insights into the tectonics of culture that can be used to produce information that can propel critical pedagogies and socio-political movements.

In indigenous cultures we recognize the existence of standpoint epistemologies in the stories that are passed down from generation to generation. In this context, the indigenous storyteller maintains control over the production of information—not the outside researcher. The recognition of the need for indigenous storytellers

to maintain their epistemological power is profoundly important in a colonial world that continues to oppress the indigene (Harding, 1998; L. Smith, 1999). At the same time, it is essential in a critical complex epistemology that indigenous storytellers and criticalists engage in a synergistic dialogue that helps generate new and more successful ways to undermine colonial oppression while imagining new ways of being human in the hyperreal globalized world. Sandy Grande (2004) makes this point brilliantly in her book, *Red Pedagogy: Native American Social and Political Thought*. Such negotiations—though they are always complex, delicate, and multidimensional—can change all of our lives for the better. In the process of such negotiations we all come to ask questions never before imagined. The possibilities made possible by such intersections of different conceptual frameworks and ways of life are infinite.

As we better understand the web of reality—the multiple webs of reality—we are empowered to employ the new frameworks we encounter and construct to produce forceful new information. Teachers in the twenty-first century era of standardization and deprofessionalization are in dire need of the ability to produce their own knowledges about their work. The despotism of expert, neo-positivist knowledges about teaching and learning coming from the centers of power is, simply put, destroying the educational profession. Thus, as I have argued elsewhere many times (Kincheloe & Steinberg, 1998; Kincheloe, 2003a) teachers (and students) must become researchers if critical educational reform is to become a reality. Indeed, in much of my earlier work I argued that critical teachers had a responsibility to become researchers, knowledge producers, and critical complex epistemologists—and, importantly, the duty to share these abilities not only with their students but also with the general public. When this happens a critical pedagogy grounded on a critical complex epistemology will have begun to realize its potential.

## **Constructing Practical Knowledge for Critical Social Action**

The knowledges that emerge from a critical complex epistemology are action-oriented modes of practical cognition. Such knowledges depend on a rigorous knowledge of a phenomenon and the contexts that shape it rather than a set of abstract rules developed to solve neatly formed and abstract problems. Thus, going back to Chapter 1, a critical complex practical knowledge is directly related to a critical complex epistemology of practice. The lived world in general and in education in particular is far too complex to simply lay out universal step-by-step solutions to particular dilemmas. If a critical complex epistemology is to be of any help to critical educators and other cultural workers, then it must understand the complexity of everyday life and the multiple realities we all must confront. Of course, a central assertion of *Knowledge and Critical Pedagogy: An Introduction* has involved the concept that FIDUROD's disinterestedness and the inaction that surrounds it is viewed in the regressive epistemological context as a virtue. Acting on a radical love or a compassionate spirit is not a part of the FIDURODian ethic.

Of course, what we are talking about in a critical complex epistemology is making education something that really matters in challenging knowledges that perpetuate injustice while also understanding and helping to end human suffering. These are obviously action-oriented, practical goals. Thus, criticality is not interested in producing spectators, taciturn bystanders who are afraid to act. A critical complex epistemology is devoted to praxis, to informed action that moves individuals and groups to make and remake history—and in the process shape the future. As a scholar-teacher working in this context I want to produce compelling knowledges that are strategically valuable in the struggle against racism, sexism, homophobia, class bias, religious intolerance, and colonialism and for new ways of seeing and being in the world. As a critical complex epistemology constructs new levels of awareness and reveals the defects of mechanistic views of the physical and social worlds, it realizes that these worlds are more amenable to reinvention than previously imagined.

Thus, a critical complex epistemology promotes a form of practical knowing, a knowing-in-action that initiates praxis. This practical knowing is intimately connected to developing a precise sense of purpose for our knowledge work and the actions it makes possible. FIDURODian descriptions of purpose such as producing accurate knowledge of the world are not sufficient in a critical complex epistemology. We must go farther in carefully considering the use value of our knowledge in a critical theoretical context. Criticalists produce dangerous knowledge, which by nature imply knowledges that take action in the world as they challenge existing dominant power relations. This notion of the use value of knowledge takes us back to the pragmatic test often referenced by John Dewey (1916): what is the consequence of the knowledge we produce. Adding criticality to Dewey's pragmatism, we ask what is the consequence of our knowledge in helping those in need, those who are suffering.

Thus, practical knowledge leads us to critical epistemologies of practice that recognize the purpose of what we are attempting to accomplish, the forces that may undermine our success, and the complexity of producing knowledges that lead to recognizing and solving idiosyncratic and ill-defined problems (Rouse, 1987; Peat, 1989; Blackler, 1995; Lomax & Parker, 1996; Geeland & Taylor, 2000; Reason & Bradbury, 2000; Bettis & Gregson, 2001). In this context we turn again to the power of difference and the insight of indigenous knowledges. Linda Tuhiwai Smith (1999) writes about Maori ways of knowledge production, maintaining that such research is based on concepts of decolonization, healing, transformation, and mobilization. These dynamics inform all Maori ways of seeing and speak to the practical outcomes of this indigenous form of inquiry. The implications of these four dimensions of Maori research can be discussed in the great dialogue between indigeneity and criticality that Sandy Grande (2004) constructs. In this context critical knowledge producers gain new insights into what it means to produce practical information.

As we understand Maori and other indigenous epistemes as well as the ways of seeing of a wide diversity of other cultures, we begin to develop not only more practical knowledges but also new ways to protect ourselves from the tacit epistemologies and ideologies of dominant power blocs (G. Jardine, 2005). In this

context we refuse to become prisoners of the socio-political constructions of our time and place. We are episto-bandits on the lam, escaping to new ideological hideouts where we can unite with our collaborators in our dangerous work. We will not be conceptually incarcerated by the hegemonic epistemological system and, thus, will not produce the data it demands of us. Here a critical pedagogy constructed on a critical complex epistemology imparts an intellectual understanding of these dynamics and an affective desire to use them in the struggle against oppression and suffering. In this way we embrace a hyper-praxis—the best-informed critical action we can presently construct.

In a critical pedagogical context the phenomenological complexity of the educational act is missed by FIDUROD-based research—and, importantly, the policies and practices that emerge from them. The fact that such reductionistic researchers often tell their audiences that “the scientific research tells us that we must teach mathematics in this particular way” is particularly disturbing in its distortion of the lived complications of educational life. Such an epistemology neglects the necessity of questioning the relationship between professional information and the vague precincts of practice illustrated by infinite complications and complexities. The knowledge critical pedagogues produce in such confines have to be sensitive to these dynamics. If they are not, educational practitioners will simply ignore critical knowledge in the same way they have had the good sense to ignore positivistic/FIDURODian knowledges. Practical knowledge is sensitive to the idiosyncrasies, ambiguities, and Mickey Spillane twists of everyday life.

## **Complexity: Overcoming Reductionism**

A central point I have made throughout the book and a key aspect of a critical complex epistemology is that the world is much stranger than science has ever imagined. From quantum realities and fractiles to complex emergence, it's really quite extraordinary out there. We have entered into an era where with every year that passes our understanding of the complexity at the physical, epistemological, ontological, psychological, and cosmological levels grows more acute. At this point we understand that any dimension of the cosmos will defy human efforts to present a *complete* description, for the world is far more multifaceted than our ability to understand it and express it in our limited languages. Classical physics, for example, maintained that the world was made of tiny particles that divide reality into its discrete components.

Such separation and fragmentation of the world's phenomena does not provide a sufficiently complex view of the way the physical, social, psychological, and pedagogical worlds are constructed. The fragmentation of such traditional Cartesian-Newtonian-Baconian ways of conceptualizing reality neglect the connections and relationships between what are considered separate segments. Appreciating the nature of these connections is central to gaining new insights into the way things often work in this pluriverse. The electron, for example, contrary to the way

we were all taught about it in physics and chemistry classes is no longer considered a particle that exists continuously in the way we are accustomed to phenomena existing in “normal” reality. As we observe it, it comes and goes, appears and disappears, while performing other “irregular” actions. Physicists have realized for a long time that we cannot begin to understand the activities of even an electron if it is not viewed in relation to the totality of space-time—a dimension from which it is inseparable (Bohm, 1987; McClure, 2000).

This interconnectness is what Foucault (1980, 2002) is talking about in his explanation of how meanings of words are understandable only in the context of the prevailing episteme. Because of the embeddedness of all linguistic concepts in the interrelated network of information, he posits that a human being cannot comprehend a unitary, abstracted free-floating sliver of knowledge. The definitions and certainly the connotations of words are constantly changing. Gail Jardine (2005) insightfully articulates this Foucauldian concept when she writes:

Foucault argued that you cannot know what something is unless you know what else it connects to that gives it a place in the world, what else it involves and reflects when it comes into being, and what involves and reflects it (p. 99).

Thus, in some unexpected ways language is like an electron—one has to understand both in the context from which they emerge and how they change in relation to such a framework.

In this zone of complexity chaos theory offers two different approaches to comprehending what appears to be random behavior: (1) nonlinear dynamic systems and the way they help elucidate order behind chaos—the study of constantly changing systems based on recursion (repeating processes, patterns within patterns); (2) complexity theory and the way complex adaptive systems emerge as complexity increases. Both of these dynamics are central to the move to a more complex science. The tendency of systems to develop new modes of behavior as they complexify is an amazing phenomenon. Such a capacity indicates that the world is not lifeless, static, and mechanistic—as in the Cartesian-Newtonian-Baconian model—but a complex cosmos that develops agency, acts on its own prerogative as it self-organizes. This complexity operates in diametrical conflict with FIDUROD’s reductionism. It indicates we live in a living, active universe that develops organizational frameworks without a central identifiable authority dictating what it does.

Epistemology in such a strange, conscious cosmos can never be viewed the same way again. As argued throughout this book knowledge in a critical complex context is not resting out there somewhere until one of us humans stumbles upon it. Such knowledge in the FIDURODian context is an entity that researchers have extracted from the complex web of reality with all of its processes, contexts, and relationships—those dynamics that give it meaning. The FIDUROD-based “normal Western way of seeing” is so comfortable with these “extracted abstractions” that Westerners of diverse stripes trust that meaning rests in the fragment of data as opposed to the framework from which the information has been removed. Not to be hyperbolic, but this ontological understanding fundamentally changes our conception of the world, our role in it, knowledge, and who we are. We begin to realize how Matrix-like

(in the movie sense) our world is. I hope that such a realization leads us to rethink the nature of that world and how we can reshape ourselves in ways that undermine the fecal reality in which we're often enmeshed.

Poststructuralist discourses with their emphasis on ambiguities, diversities, ruptures, the problems with universalism, and omissions enhance our understanding of complexity. One profoundly important dimension of a poststructural critique involves its emphasis of diversity in the context of subjugated knowledge. Here poststructuralism insists that there is no universal "oppressed" perspective that should unproblematically guide criticalists in their epistemological inquests. Critical theorists/pedagogues have to be extremely careful in their privileging of subjugated knowledges, for there are so many of them. This understanding rests at the heart of critical complexity: we most definitely start our explorations with oppressed knowledge, but we make sure we don't **essentialize** the meaning of such information. This adds to the difficulty of the critical task, but makes it far more useful in the process.

The complexities, complications, and difficulties inherent in the act of knowledge production, as a study of complexity theory reveals, come from numerous directions and diverse factors. One of the most important dimensions of this complexity in a critical complex epistemology involves a rather straightforward feature of complexity: complexity as its base is linked to the ontological complexity of every dimension of the cosmos surrounding us—the physical, social, psychological, and pedagogical. All of these domains are heterogeneously structured, making the attempt to understand them and act critically within them that much more complicated. As we understand the necessity of contextualization in any efforts at meaning making, we better appreciate the ever changing and erratic arrangements of interests and viewpoints that shape phenomena. The FIDURODian notion of a fixed and invariant cosmos, seems almost childlike in its simplicity and reductionism.

Thus, a critical complex epistemology is devoted to a complexification of research, knowledge production, even the concept of science itself. The multilogical epistemology advocated here explores a diversity of knowledges—data from diverse cultures, ideological perspectives, ancient sources, and, of course, indigenous and subjugated informers. Defining research methodology as a theory and interpretation of how knowledge production works, we begin to gain new frameworks from which we can better devise and frame the questions we ask of the world. With ontological complexity in mind and the critical complex need for multiple vantage points on the different domains of study, one can easily discern the need for the bricolage that Norman Denzin and Yvonna Lincoln (2005), Shirley Steinberg (2006), Kathleen Berry (2006) and I (Kincheloe, 2001; Kincheloe & Berry, 2004) have theorized over the last few years. All issues are multidimensional and need to be viewed from diverse perspectives. All the dimensions that intertwined with critical pedagogy—the physical, social, political, psychological, and educational—are far more complicated than researchers had originally conjectured (Capra, 1996; Harding, 1998; L. Smith, 1999; McClure, 2000; Nowotny, 2000; Bettis & Gregson, 2001; Mignolo, 2001). It is time to get to work in rethinking our view of the world, knowledge, and how we teach about it.



## Knowledge Is Always Entrenched in a Larger Process

Basic to a critical complex epistemology is the notion that knowledge is always situated in a larger process(es). The processual epistemology of criticality understands FIDUROD's epistemological and ontological tendency to see the world and knowledge about it as made up of separate and unconnected entities. In such a construct researchers study these unconnected dynamics in isolated laboratory settings and focus on the categorization of their component parts—much like the way a tenth grade biology class dissects a frog. In a critical complex epistemology multiple realities and human consciousness are viewed a parts of larger process, always interacting with other dynamics and other processes. In these relationships they are never stationary but ever morphing and evolving. Thus, again we are reminded of the regressive FIDURODian concept of the intractability of a monolithic, Western-constructed reality.

Thus, the natural world, human subjectivity, consciousness, and, obviously, knowledge is always changing. In such a context contemporary standardized pedagogies transmit inert knowledges, enacting in the procedure a dead epistemology that chases final forms of universal knowledge like a kitten chases a shadow. A critical complex epistemology of process alerts us to the fact that little in the universe is as it seems to be. Abstracted data, knowledge removed from the processes of which it is a part, things-in-themselves can be profoundly deceptive. Indeed, there are serious flaws in the epistemological assumptions and the knowledge that emerges from FIDUROD. As historical contexts and situations change, what is considered true today may be considered primitive belief tomorrow. Today's maps may give us a profoundly misleading view of how to drive from Moncton, New Brunswick to the Sunnyvale Trailer Park in Nova Scotia.

Indeed, such a map may change not only because geographic and transportation-related dimensions of the area are altered. It may change as our consciousness evolves, as we develop new concerns, research methods, new understandings of multiple realities, etc. The point is that when we view knowledge in a new context(s) complexity and ambiguity deepen and reductionistic answers become more and more irrelevant to the exigencies of the moment. For example, if we view schooling as part of a larger process of dominant power's effort to regulate and discipline a workforce for a corporatized world, we understand particular events in classrooms in profoundly different ways. The stench released by the arrogance of FIDURODian epistemological and curricular standardization creates a new level of regulation in twenty-first century pedagogy. Politicians who play the role of corporate lap dogs and their allies in journalism and school curriculum development gain a Texas death grip on pedagogy and consciousness construction in this ideological/epistemological context (Capra, 1996; Harding, 1998; Thomas & Kincheloe, 2006).

As critical pedagogues employ a critical complex epistemology's concept of process to their knowledge production and curriculum development they come to value the often obscured dynamics that situate the physical, socio-political, psychological, and educational domains in an ever-changing terrain. FIDUROD-based knowledge work and the pedagogy that emerges from it typically grant still pictures of a phenomenon. Such a static image represents a particular instant in time and

space—a view that is not without value. But it is a figurative photograph that is too often unaware of the significance and gravitas of the greater process in which it is positioned—a process that works to provide previously overlooked meanings and possibilities for praxis. When we view our “still life with woodpecker” as a phenomenon embedded in a larger process, critical complex epistemologists gain an appreciation of how entities transcend their distinctiveness while simultaneously retaining their uniqueness. This is an ontological concept that applies to all things-in-the world, human beings included.

This process-grounded orientation of a critical complex epistemology helps educators and researchers move into a multidimensional mind space that operates with an understanding of the inviolable connection between knowledge and context, mind and body, consciousness and the social-political milieu, facts and values, and the physical and the social. A critical complex epistemology’s concern with difference, with multiple perspectives can be viewed very clearly in this context. The Buddhist concept of impermanence and a constant state of change confronts Westerners with their comfortable notion that the permanent, abstracted self is a social construction. The self—like all other phenomena in the cosmos—is always in process. The Western effort to remove the self from these processes, to essentialize it, is to ensure great pain and suffering. To live, to move to a new, more comfortable domain the self must always be changing. If it doesn’t, boredom and psychological distress develop. Thus, FIDUROD not only provides a misleading view of the world, it is in part responsible for the unhappiness and world-weariness that afflict contemporary Westerners.

In this context the critical concept of articulation becomes profoundly relevant to our discussion of epistemological process. The Italian critical theorist, Antonio Gramsci (1988) maintained that the transformational concept of articulation referred to the notion that any socio-political construct involves a lengthy historical process of connections and disconnections. Simply put, it can only be understood in the process(es) that shaped it. The effort to understand social, cultural, political, psychological, and pedagogical phenomena cannot be removed from the complex historical processes that have brought them into existence. Informed by Gramsci’s concept of articulation, criticalists understand that process is a fundamental dimension of the multiple dimensions of the world in which we operate. Processes as part of the ontological status of the cosmos, inform all epistemological activities. Knowledge of these processes subverts the reductionism of FIDUROD’s fragmented conception of the phenomena in the world.

A critical complex epistemology cannot conceptualize knowledge without considering its past and future. Such an epistemological stance understands that any phenomenon we encounter is viewed at a specific point in its longitudinal being-in-the-world. Criticalists go as far as to argue that when information is abstracted from the process(es) of which it is a part, it is no longer able to be understood. When the epistemology of FIDUROD engages in this abstraction, what it claims to know is often a chimera—a figment of a socially constructed fantasy, a way of operating that leads us down a path to disaster. The human catastrophe that awaits us is fed by a form of knowing that strips away the complications, the complexities that provide insight

and meaning (Hall, 1986; Capra, 1996; Marshalidis, 1997; Pickering, 1999; Varela, 1999; Clifford & Sanches, 2000). We don't have to wait for the educational calamity—it is here, staring us in the face. As we observe the test-driven, hyper-reductionistic policies that destroy the concept of a rigorous, pragmatic education, we are watching a FIDUROD-incited rampage of rational irrationality. A critical complex epistemology with its understanding of process gives us a way to address such social insanity and possibly save the planet.

## The Centrality of Interpretation: Critical Hermeneutics

A critical complex epistemology is particularly interested in producing research and knowledge that are more open-ended, less finalized, more creative, performative, and more rigorous. In critical pedagogy we want to accomplish all of these things and do them in a more accessible and reader friendly way. In this context hermeneutics plays a key role in this effort to make our way through the smoky forest, the foggy night of the mysterious world to which we are connected. In the smoke and the fog our critical complex hermeneutic goal is not to provide a **mimetic** image of what our ethnographies see or our histories uncover. Instead, criticalists are interested in moving from FIDUROD's correspondence epistemology to an interpretation of relationship, significance, and relevance for action. This critical complex hermeneutic mode of knowledge production is an epistemological Juan Gris as opposed to a FIDURODian Norman Rockwell. A critical complex hermeneutics asks what meaning do phenomena hold for humans, other species on the planet, and the planet itself. Positivism and its FIDURODian progeny are not interested in such questions and concerns. Employing the genius of hermeneutics, criticalists extend their efforts to make meaning—that leads to emancipatory action—about humans and the physical and the social surroundings in which they live. Of course, these physical and social surroundings are inseparable from whom we are as human beings—they are not separate entities.

In a critical complex epistemology the nature of the hermeneutics we are dealing with here come under the larger category of philosophical hermeneutics. In this context, knowledge producers working in the domain of an evolving criticality try to conceptualize and elucidate the circumstances in which interpretation, meaning making, and understanding occur. The critical complex mode of hermeneutics advocated here fashions a form of knowledge production that moves to what is labeled “normative hermeneutics.” Such a normative dimension raises questions concerning the objectives and practices of the interpretive act. Thus, in this normative hermeneutic context critical theory/pedagogy knowledge workers labor to construct a mode of cultural criticism that exposes power relations and oppression.

Educators informed by this form of hermeneutics fashion connections between reader and text, text and its producer(s), historical situations and the contemporary moment, and one phenomenon and another. Pulling off such activities is no easy

matter but one that with practice and understanding is certainly doable. Researchers with these normative/critical insights push knowledge workers of all stripes to identify and analyze the interconnective dimensions of compelling and pragmatic interpretations of knowledge production and culture. Making these connections and then using the insights gained to address and help end human suffering in the world, of course, brings us back to the roots of criticality itself. Hermeneutics, I believe, is an invaluable tool in this effort (Rouse, 1987; Gallagher, 1992; Kellner, 1995; Kogler, 1996; Rapko, 1998; Kincheloe & Berry, 2004).

The data stored in books is in a sense not really knowledge—it is only information until human interpretation and understanding turn it into knowledge. In a hermeneutic context we are reminded that so-called facts are inseparable from the world of phenomena and the discursive cosmos of language. Concepts emerge when the mind discerns a connection between the phenomenal and linguistic dimensions of data. In the critical complex hermeneutic zone knowledge simply does not exist independently of interpretation. Hermeneutics entered Western scholarship as one dimension of epistemology—and in our critical complex version of hermeneutics, we retain that historical relationship. In this context we understand that hermeneutics presents a challenge to a traditional positivist and a contemporary FIDURODian epistemology. Originally, hermeneutics was designed to reveal insights into social and cultural life that were unreachable via traditional scientific methods.

In the world of complex emergence, quantum physics, and superstring theory, critical complexity believes that hermeneutics has a role to play in all human knowledge production. Indeed, as previously mentioned, as a piano player I understand that hermeneutics is the jazz of scholarship. A keyboardist who can play jazz can play anything, for there is so much music theoretical insight and technical expertise required to play jazz well. Any scholar/activist who can perform hermeneutic analysis is so well versed in social theory and interpretive insight that she can apply such proficiency to virtually any domain. Thus, a critical complex epistemology draws heavily on hermeneutics in its larger effort to provide a more rigorous alternative to FIDUROD. As positivism and FIDUROD have produced explanations from which observation statements are derived, a critical complex hermeneutics constructs understandings from which action can be developed. Such understandings serve as guides to new inquiries about the nature of science, social relations, ideology, and colonialism, and education (Rouse, 1987; Geeland, 1996; Parker, 1997; Harding, 1998; Grande, 2004).

Hermeneutics is a Western discourse emerging from thinkers such as Martin Heidegger, Edmund Husserl, Maurice Merleau-Ponty, as well as Michel Foucault and Jürgen Habermas that maintains that numerous forces mitigate how we interpret diverse types of texts and the world around us. We come to the interpretive act speaking some language, with a view of humans and the ways they act in the world, armed with a lifetime of experiences, and exposure to a particular range of knowledges contingent on the time and place of our existence. And all of these—and many more—factors shape our interpretation of diverse types of texts and the world around us. As many hermeneutists have described it over the last century, our interpretations of

the world always rest on previous understandings of the socio-cultural domain in which the phenomena in question and our ways of seeing were inscribed with meaning (Gadamer, 1989). Such a perspective flies right into the face of FIDUROD's consistent effort to remove such socio-cultural and basically human dynamics from the knowledge production it supports. Indeed, such processes by which human subjectivity is shaped have traditionally be swept under the epistemological rug of positivism.

Thus, in a critical complex hermeneutics we understand the new knowledge we encounter through lenses colored by our existing knowledge of the cosmos. In such a context it is easy to understand how meaning making and knowledge production in the West so easily falls into the trap of a parochial Eurocentrism. New interpretations and the knowledge they construct are always integrated into a previously existing epistemological/hermeneutic framework. Knowing this, a critical complex hermeneutics can never support pedagogies that presume that knowledge is a discrete entity that can stored in a box and later be removed in an unchanged condition. It will have aged, reintroduced to a new *Zeitgeist*, a new socio-cultural context. If a different person removes it from the storage box, she will have idiosyncratic experiences that move her to interpret its meaning in a new way. Knowledge is always inscribed by temporal and spatial factors, never timeless and local—culturally mediated, never independently constructed (Chiari & Nuzzo, 1993; Geeland, 1996; McLaren & Kincheloe, 2007).

Obviously the hermeneutics employed in this discussion of epistemology and the politics of knowledge is a critical complex hermeneutics—critical in the sense that it has engaged in a dialogue with the tradition of critical theory, and complex in that it has engaged with complexity theory. As maintained throughout this book critical theory is always focused on the ways power operates, the ways various power blocs and organizations position power in the effort to get by in the world, shape behavior, gain dominance over others, or, in a more productive vein, end human suffering and upgrade human life. Understanding that power is not merely one important force in the socio-cultural and political process, critical theory posits that human are the historical products of power. A critical complex hermeneutics emerges in the interaction among hermeneutics, critical theory's concern with power and social action, and the insights of complexity theory (D. Jardine, 1998; Kincheloe et al., 1999; D. Smith, 1999; McLaren, 2000; Kincheloe & Berry, 2004).

Hermeneutics in this context is an exercise in developing the interpretive ability, the scholarly facility of knowledge workers in any domain. In this integrated context critical hermeneutics advances interpretation to new levels, moving beyond what is visible to the ethnographic eye to the exposure of hidden structures and intentions that shift events and construct the lived world. As a critical complex hermeneutics studies the intersection of power and ubiquitous, pre-reflective social and cultural meanings, a nuanced and rigorous understanding of the cosmos emerges. A critical complex hermeneutics propels the concept of **historicity** to a new conceptual level, as it specifies the nature of the historicity that helps produce cultural meaning, the consciousness of the researcher, the construction of the research process, and the formation of human identity/subjectivity and transformative action

in the world. In this interpretive context critical theoretical concerns with praxis-based notions of socio-cultural transformation are more easily addressed, as social action informed by thick description and rigorous understanding of a social and political circumstance is made possible (Zammito, 1996; Lutz et al., 1997).

## **The New Frontier of Classroom Knowledge: Personal Experiences Intersecting with Pluriversal Information**

Drawing on our hermeneutic insights that often involve observing one phenomenon in the presence of another, one entity in light of the horizon (the context) in which it is encountered, we apply our critical complex epistemology to the knowledges students deal with in classrooms. Thus, somewhere in the interaction of phenomenological direct experience and theoretical contemplation rests the essence of critical complexity. Indeed, here rests a central feature of *Knowledge and Critical Pedagogy: An Introduction*—our critical complex epistemology and our critical politics of knowledge bring us into a contextualized present. This contextualized present is what critical pedagogues strive to create in the classrooms they construct. With this in mind we explore the new frontier of classroom knowledge, helping students and teachers juxtapose their personal experiences with multiple types of knowledge in our epistemological pluriverse.

In classrooms shaped by standardization and test score performance the significance of the fragmented data that students stuff into their memory boxes is irrelevant. The stories, the genealogies, the DNA left behind by power that saturate every fragment of data included in the mainstream curriculum are so profoundly revealing but so totally ignored in most mainstream Western classrooms. It is irrelevant, for in such thanocentric places no one is rewarded for exploring profundity in the everyday, the larger meanings that emerge from our attention to what is going on around students and teachers in the school. These everyday educational power plays call on critical teachers grounded on a critical complex epistemology to help turn these seemingly minor details in a unique view of the whole, into the stuff of emancipation. The regulatory dimensions of contemporary schooling, the standardization, the scripts, the testing, the surveillance, etc. are the constructions of dominant power. Learning to identify the workings of larger processes of power in these contexts is a key dimension of being a critical educational researcher and, of course, a critical teacher and student.

Phenomenology and hermeneutics in their critical articulation operate in the tension between particularity and generality—with generality focusing on power blocs and their insidious operations. This epistemological principle is basic to the intersection between student experience and pluriversal knowledge. The direct experience to which phenomenology connects us is one that is always in need of a form of critical interpretation that reminds us that we make sense of it from our particular locale in the web of reality. It provides us in this context with access to one—but a damned important one—of the multiple realities we have discussed

throughout the book. This contextualized present is powerful in its ability to move us to new domains of understanding. Not only is the present—the experience and the insight that comes from it—important, but also the connection of such experience with the generality of the critical is profoundly emancipatory. Such a positioning of personal experience and social theory/pluriversal knowledges is a key path to our larger goal of the decolonization of knowledge.

Here we engage in an epistemological severance between Western socio-educational and political hegemony and the construction of our consciousness. We begin in this critical phenomenological and hermeneutic project to monitor the way our own perspectives replicate the viewpoints of those in the West who dictate the “universal truths” that oppress so many in the world. As we uncover the plethora of ways that dominant power blocs colonize the mind, we begin to understand the intersection of personal experience and pluriversal knowledge anew. We become better students of how power operates, as we enumerate the ways it has shaped our own ways of seeing and being. Criticalists become more adept at exposing the hidden dimensions of Western colonial power in all of its racialized, capital-driven and class-biased, gendered, religious, and sexual articulations. In every domain, education in particular, we have to examine the power of neo-liberal markets and their impact on the politics of educational knowledge. Pluriversalism and critical multilogicality in this domain listen especially carefully to those on the “other side” of the colonial border—those who have lived in geographical areas where European powers have colonized for centuries and neo-colonized for decades (Van Manen, 1991; Mignolo, 2001, 2005).

When educators dismiss the intersection of personal experience with multiple knowledges, they take an important step toward constructing education as a mode of stupification. Universal knowledges constructed in the interest of Western power brokers float like the smell of rotten meat through the hallowed halls of education. As I study the curricula ensconced in contemporary schools, I read and listen to textbooks, curriculum guides, and teachers imparting gallant fictions about brave national leaders executing valiant and just feats, of governments that work outside the boundaries of power blocs for the good of all. The conscious notion in contemporary Western and Western-inspired schools that such data has anything to do with one’s personal experience is unthinkable in the minds of most students. These universal knowledges work primarily at a tacit, unconscious level to colonize the consciousness of those with whom they come into contact.

Thus, the decolonization impulse in the critical new frontier of classroom knowledge is omnipresent in this context. A critical complex epistemology works hard to support a critical pedagogy that helps students and teachers extricate themselves from social and interpersonal patterns of thinking and behaving. A critical complex epistemology’s dedication to examining questions of meaning, liberation via ideological decolonization, and focus on the hidden practices of the production of selfhood transcends the mimetic knowledge production and the rote pedagogies of the contemporary era. The critical pedagogy emerging in this epistemological context is always struggling with educational purpose in changing times and places while concurrently wrestling with questions of freedom, authority, social action,

and student dignity. It is constantly looking for tacit modes of colonialism that teachers and students in the schools of dominant culture do not yet understand.

Thus, a critical complex epistemology helps us ask new questions, to develop new cognitive abilities, to see through the walls of colonialism and the ways the empire has shaped our interpretations of our own experiences. At the level of the individual we gain the empowerment to reinterpret our lives in relation to the monster of dominant power. In this activity, students—especially those marginalized by issues of race, class, gender, sexuality, ability, religion, and colonialism—discover new dimensions of their genius and insight often quashed by colonial power. At this point the new frontier—an anti-colonial frontier, I might add—opens up. It is a frontier of great possibility where the knowledge of school can intersect with personal experience and insight to allow for the production of new knowledges (Harding, 1998; Mignolo, 2001; Valenzuela, 2006). Such knowledges allow new epistemological and ontological insights to emerge in a manner that produces new identities and new understandings of the damage the various Western power blocs are inflicting on a variety of oppressed peoples.

## **Constructing New Ways of Being Human: Critical Ontology**

We can become more than we are now via a critical complex epistemology, a critical politics of knowledge, and a critical pedagogy. As we develop new ways of understanding knowledge and the way it constructs the world, we construct new ways of producing our identities, our subjectivities. A key dimension of our critical identity involves our ability to imagine—our ontological imagination of what we might become as individuals and as a species. As linguistic, imaginative entities we can transcend what are believed to be innate biological tendencies and change violent and destructive behaviors that threaten other human beings and the planet in general. In criticality societies possess immanence—a sense of moving from what is to what could be. In a critical ontology that sense of immanence moves to the realm of who we are and who we can be as human beings. To me, one of the most exciting dimensions of being a critical theorist and engaging in a critical pedagogy entails opening ourselves up to a passionate imagination, where we constantly remake ourselves in light of new insights and understandings.

We are lost if we are not imaginative, exploring entities. Yet, schools in the Western empire of the twenty-first century often seem intent on quashing this very quality. A critical complex epistemology works to create conditions that cultivate the imagination, that promote a highly rigorous yet imaginative body of knowledges shaped by encounters with diverse peoples and places. And since “who we are” is inseparable from “what we know,” new articulations of selfhood are possible in such an epistemological context that respects “otherness” and difference. In my own life I could never be the same after living and working with the Rosebud Sioux (the Sicangu people) and learning the ways they saw the world, white people,



humor, research, and numerous other dynamics. Denying or discouraging students from having contact with otherness and difference is another dimension of dominant power's social control. As long as power wielders can epistemologically and ontologically isolate Western societies' "abstract individuals," they can subvert tendencies to question the one-truth ways of seeing and being.

Central to a critical ontology is the critique of the individual as the fundamental social component out of which other groups and interpersonal interactions materialize in Western societies. The notion of the abstract individual is central to traditional Western philosophies and Western religions. Indeed, the individual-society relationship has persisted as a central dilemma in Western thought. Critical ontology with its understanding of the social construction of selfhood and its never ending embrace and respect for otherness and difference helps Westerners escape from the pathologies of abstract individualism. The narcissism that emerges from a system of ideas that focuses primarily on the autonomy, self-centeredness, and economic self-interest of the individual produces anti-social behaviors that undermine the well-being not only Western societies themselves but of diverse peoples around the world. An examination of the history of Western education reveals that this egocentric dynamic has been the foundation on which the curriculum has rested (L. Smith, 1999; Spring, 2001; G. Jardine, 2005).

In a Western world gone mad with egocentrism, materialism, status-seeking, and mutating forms of colonial exploitation, critical ontology's notion that humans can be more intelligent, ethical, imaginative, environmentally sensitive, and interpersonally adept is viewed as a profound threat. Once we have jumped through the critical ontological looking glass and seen our reflection in the crystal amaryllis of criticality, we begin to understand the complexity of human existence in previously unimaginable ways. The reality Westerners have been taught via the tacit pedagogy of the omnipresent epistemology/ontology of FIDUROD begins to appear as merely one construction of a much grander schema. Concurrently, the view of the individual we have absorbed from this same conceptual framework seems woefully impoverished. In the ontological realm of being human, the scourge of egocentrism undermines our hope for a critical pedagogy, for a radical love.

It is difficult for us to deal with the global disparity of wealth, environmental degradation, colonial violence, understanding the abuses of power, ad infinitum when individuals are too busy pursuing status to attend to the needs of the group, in this case their species, other life forms, and the planet in general. The abstract individualism of Cartesian-Newtonian-Baconian epistemology/ontology keeps us from constructing a critical community of interconnectedness. Even those who study these dynamics and intellectually understand the critique offered here are sometimes so pathologically committed to Western egocentrism that they cannot emotionally commit to such interpersonal interconnectedness. Knowing is inseparable from being—epistemology is inseparable from ontology. Some of my saddest moments over the last 40 years of working toward critical goals have involved observing the pathological egocentric/merciless behavior of those who pay lip service in their scholarship and social activism to many of the values expressed here. Thus, a critical ontology understands that a logical understanding of criticality is

often not enough. Such insights have to be accompanied by a reconstruction of selfhood with affective and emotional investments in the tenets of criticality.

Obviously, a critical ontology does not mean that we simply abandon the notion of individualism for the collective. In this context we walk a tightrope between developing a commitment to the group and the needs of individuals (Kincheloe, 2007). Just as in a critical phenomenology, we are very concerned with the particular event, the life of the individual, and the local circumstance—we value all of these dimensions for their intrinsic significance but concurrently know they are socially constructed entities that must be appreciated in the larger contexts and processes of which they are parts. We have much work to do at both the individual and the social levels. Honestly, I'm not particularly happy with the "way 'we' are" in Western societies at the end of the first decade of the twenty-first century: the hierarchies, the ways men treat women, the heterosexism, racism, class bias, the competition, the fear of "taking a hit," the neo-bourgeois low affect "cool," the humorlessness about particular topics, etc. Yes, I admit it—I want to see not only a social and pedagogical revolution but an epistemological and ontological revolution as well.

Knowledge production and research always rest either consciously or unconsciously on some notion of the self. In the West from Greek philosophy on to the present, human beings have been viewed as existing outside of naturalistic constructions of selfhood in humanistic explanations of the phenomenon of subjectivity. Naturalistic descriptions focused on the unity of nature and human life, while humanistic perspectives abstracted people from the world, situating them as superior to the animals and plants because of their language and rational ability. This humanistic abstraction and hierarchicalization has throughout the history of Western philosophy often operated to subvert our sense of connectedness to the universe and to one another. In many ways such an epistemological/ontological perspective has rendered humans as existentially lost in the universe, unaware of the diverse connections inherent in being in the world and being in relationship. Human beings have culturally and biologically evolved *in relationship* to unique circumstances—we are who we are in part because of our interconnections. Humans are separate entities, no doubt, but also parts of the irreducible wholes of society, cultures, and the physical world.

Transformations in things-in-the-world are always connected to pattern constructing dynamics located spatially and temporally. A critical complex epistemology, critical ontology, and critical pedagogy are pattern-constructing dynamics that ultimately change who we are. Thus, the caution: if you want to stay exactly who you are right now, do not study these critical dynamics. Unless, you are committed to resisting any authentic connection with the new experiences such criticality produces, you will return from the encounter with new patterns, processes, and contexts as a different being. Engagement with subjugated and indigenous knowledges, different ways of viewing knowledge and its production, and the notion that we are things-in-relationship not simply things-in-themselves jettisons us into new domains, new mindspaces, new modes of seeing, being, and acting. I hope you find this as exciting and exhilarating a process as I do.

## Glossary

- Historicity** the human state of being in the world, our place in space and time and the way it shapes us. Such a concept is very important in critical and enactivist theory.
- Mimetic** having to do with the actual reality of human experience. Mimetic knowledge reflects “true reality.”
- Positivites** unified bodies of knowledge constructed via specific principles.
- Queer theory** though the term is often used to describe the fields of gay and lesbian studies, it also deals with the notion that sexual and gender identity are in part socially constructed. In this context queer theory asserts that people cannot simply be categorized using words such as homosexual, heterosexual, woman, or man.