Living and Learning Sustainability: Pedagogy and Praxis in Sustainability Education

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**Keywords:** critical pedagogy, sustainability education, agency, praxis, sustainability, political economy, enforced dependency, critical theory, hegemony, counterhegemony, peak oil, climate change, local food, place, (re)localization, resiliency, service learning.

**Abstract**

In this dissertation, the author develops a critical pedagogy of sustainability and promotes its application in higher education. This pedagogy is a form of praxis rooted in Gramsci’s theory of agency. It weaves together threads of related theory rooted in social critique and analysis of global political economy, recognition of the importance of *place* as a context and construct for sustainable living, local food action, and counterhegemonic sustainability education praxis. The author also discusses examples from her teaching that illustrate how engaging students in sustainability-oriented action projects, and in reflection on that engagement, can embody sustainability education praxis.

The critical pedagogy of sustainability developed in this dissertation involves inter- and transdisciplinary engagement with students and community members in an effort to catalyze the conceptualization and living of sustainable practices. This transformative praxis departs from practices dominant in higher education today in that it involves students in the process of naming the world and defining desired action. It seeks to (re)integrate fractured modern identities and worldviews. It is counterhegemonic in orientation so that it directly confronts the political economy of late capitalism and its means of production as primary drivers of the sustainability crisis. It seeks to authentically reconnect people with each other and with the land. It embodies sustainable forms of leadership and entails educational processes and content that encourage personal and community engagement. Since the pedagogy the author advocates is also the pedagogy she practices, she draws upon student reflections on their experiences in her End of Oil course as one means to indicate what might be possible in terms of student learning and praxis.
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Chapter 1: Introduction and Overview of Contents

Confronting the Sustainability Crisis

Day by day, the news rolls in: the planet cannot sustain life as we know it. Subjected to attack by the global growth economy on all fronts – the oceans, the land, water, the atmosphere – the earth’s systems are breaking down. Species extinction rates now match those of major planetary die-off events, ocean fisheries are in decline from overfishing and other forms of human disturbance, and a warming climate threatens planetary scale, permanent dislocations of human and nonhuman life and the radical alteration of the earth’s productive cycles. Meanwhile, the global economy continues to satisfy the appetites and created needs of rapidly growing numbers of people globally who are now entirely dependent upon it. Ironically, this dependence creates widespread allegiance as well as ample opportunity for the powerful to profit from scarcity. And so, the story of Western industrial capitalism’s conquest and rule over a diminished world continues.

Humans have unleashed a juggernaut of self perpetuating and self-reinforcing systems of power and exploitation, and that juggernaut is destroying the diversity of human societies along with the diversity and resilience of other life forms and ecosystems. If continued unchecked, these systems of power and exploitation will ultimately bring an increasing human death toll while also irreversibly and extensively altering the course of all life on earth. Addressing this crisis in human institutions and systems of power is therefore an ethical and survival imperative. We must understand why this destruction is occurring and develop ways of being in the world that respect the lives of other species with which we share this place and time. Socio-ecological sustainability must be the highest priority for human civilizations, and through examining and
critiquing unsustainable social systems, we can – and must – set some guideposts for current and future action toward sustainability.

This dissertation encapsulates my attempt to theorize and practice forms of education that rise to the occasion in which we find ourselves at the opening of the 21st Century. Many of us are truly up a creek without a paddle, and even worse, some of us are paddling our society along with the mainstream current in blissful ignorance that we are in fact headed toward a devastating watershed of socio-ecological collapse. What is an educator to do in these times in an effort to help our students and communities avert disaster – or, in the more likely scenario, to help prepare ourselves and others to engage in sustainability-oriented action in the wake of disturbing, if not devastating, changes in our world? I offer my theories and the example of my practice in answer to this question. In doing so, I recognize the many deeply insightful, articulate theorists and activists whose ideas have confronted, in their current and earlier stages of development, the very destructive forces that I confront today. I recognize that, no matter how well articulated their arguments have been, their theories, up to this point in time, have proven inadequate to permanently, seriously challenging the power structure of modern, industrial society. Still, their ideas live inside me and in countless others and serve as a lens for novel ways of seeing, understanding, and being in the world. While I cannot claim that my pedagogical theories and practice, however revolutionary, are up to the task of remaking society, my work does invite others to join with me in the process of moving our communities and our world toward sustainability, and this work is the best I have to offer to my readers, my students, and my community.
Content Overview

This dissertation addresses what is perhaps the central question for sustainability educators today: in this time of converging socio-ecological crises and a rapidly closing window of time in which to act effectively to mitigate or prevent devastating forms of socio-ecological collapse of modern societies, exactly what should sustainability educators teach and how? This is a question I have been working with for a number of years as an inter- and transdisciplinary educator of undergraduate students at a small, public, liberal arts college. In the broader terms of asking what one needs to know and do to create a better society, I have been working with this question for most of my life. I have long been at work as a student and citizen developing a big picture understanding of the world and working toward socio-ecological justice based on my growing understanding. This process of questioning, learning, and acting is a life’s work that is never complete. It represents my dialectical and dynamic interaction with the world as I know it. It entails an opening of both my mind and heart to the harshness and the beauty of the human condition and to the beauty and decline of the ecologies that give humans and other beings life. It is a painful process that is, at the same time, laden with the joy of meaning-making, work that makes my own life worth living, even in the face of mounting crises that may, in the end, prove unsolvable.

My focus in this dissertation and as a sustainability educator is directed toward higher education. I develop a theory of critical pedagogical processes that, at their best, can engage students, faculty members, and the community in sustainability-oriented praxis. This transformative praxis departs from dominant modes of higher education today in that it involves students in the process of naming the world and defining desired action. It seeks to (re)integrate our fractured modern identities and worldviews. It is counterhegemonic in orientation so that it
directly confronts the political economy of late capitalism and its means of production as primary
drivers of the sustainability crisis. It takes a transdisciplinary approach to integrating the
academic disciplines and seeks to heal dichotomous and destructive fractures within the modern
worldview such as those separating humans from nature and men from women. It seeks to
authentically reconnect people with each other and with the land. It embodies sustainable forms
of leadership and entails educational processes and content that encourage personal and
community engagement and that foster sustainable living.

Since the pedagogy I advocate is also in many ways the pedagogy I practice, I draw upon
student reflections on their experiences in my End of Oil course as one means to indicate what
might be possible in terms of student learning and praxis within the context of sustainable
pedagogy. It is my hope that my pedagogical theories and practical experience will prove useful
to other sustainability educators who choose to adapt my work to their specific historical and
socio-ecological contexts. Though I strongly advance my theories, I see myself as engaged in a
conversation with others about what we need to know and do to be responsible educators and
people, given our individual and collective histories and the mounting challenges to living
sustainably. In no way do I propose to have the last word in this conversation. To do so would be
to proclaim my perspective as the only viable perspective and also to proclaim the end of history.
I only hope that my thoughts and the examples of my actions will prove useful in some way to
others who share my concerns and hope to make a difference in our world.

My work emerges in many ways from the work of a diverse set of critical social theorists
that include both Western and indigenous theorists who have focused their attention on various
embodiments of perhaps the central social contradiction of modern societies: domination and
oppression – a contradiction that must be resolved in order to actualize social justice, which is in
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turn a fundamental constituent of sustainability. My theory of sustainability in important ways hinges upon Gramsci’s (1971/1999) theory of agency and praxis so that my theory of sustainability is a praxiological theory. It is born in history, and it is also capable of influencing history through its lived application. My pedagogical theories build upon the works of critical educators such as Paulo Freire (1970/2000) and Peter McLaren (2005; 2007; McLaren & Farahmandpur, 2005; McLaren & Houston, 2005; McLaren & Jaramillo, 2007; McLaren & Kincheloe, 2007; McLaren & Kumar, 2009) who advocate counterhegemonic forms of education and agency as means to confront and alter the destructive and unsustainable trajectory of capitalist society and its central dynamic of domination and oppression. My counterhegemonic stance is rooted in an analysis and critique of globalized, neoliberal political economy and its overarching tendency to create and enforce unsustainable forms of dependency among people everywhere. I see combating these socio-ecologically destructive forms of dependency as central to counterhegemonic struggle for sustainability, and I draw upon the social and economic theories of Richard Douthwaite (1999a; 1999b; 2004) and others to argue that reducing and ultimately eliminating social dependencies associated with provision of basic needs is of paramount importance. In my focus on the sustainable, localized provision of basic needs, my pedagogical theories also draw upon the work of place-based educators and diverse theories of place as well as on the work of those advocating sustainable, localized forms of agriculture as embodiments of counterhegemony in service to sustainability. My work weaves these threads of related theory together to form a theory of the critical pedagogy of sustainability that is rooted in social critique, analysis and critique of global political economy, recognition of the importance of place as a context and construct for sustainable living, local food action, and counterhegemonic sustainability education praxis.
The pedagogy I advocate is a form of praxis rooted in Gramsci’s theory of agency. It involves inter- and transdisciplinary engagement with students and community members in an effort to catalyze the conceptualization and living of sustainable practices. The study of food production and food security are central to this critical pedagogy. In addition to developing a theory of the critical pedagogy of sustainability for higher education, I draw upon examples from my own teaching to illustrate how engaging students in sustainability-oriented action projects, and in reflection on that engagement, can create an important nexus for sustainability education praxis.

My overarching purpose in this dissertation is to develop a theory of the critical pedagogy of sustainability and to promote its application within higher education settings. I begin in chapter two by developing a critical social theory of sustainability. This theory informs my critique of the political economy of late capitalism and the construction of a second social theory that is central to the development of the critical pedagogy I advocate: the theory of enforced dependency as a pillar of the capitalist system. This theory is developed in chapter three. Using the theory of enforced dependency as a launching point, I then argue in chapter four that (re)inhabitation of particular places can serve as an effective vehicle for confronting and combating enforced dependency and for actualizing sustainability. Taking localized food production and consumption as especially important aspects of (re)inhabitation, in chapter five, I argue for local food sustainability as a central focus for combating enforced dependency and for promoting personal and community autonomy as important forms of counterhegemony. I follow this discussion by developing in chapter six a theory of the critical pedagogy of sustainability in higher education and arguing for its widespread application as a form of sustainability education praxis. This critical pedagogical theory builds upon and integrates all of the theories developed
in previous chapters and also embodies an important component of my praxis as a sustainability educator: the articulation of theory. Lastly, in chapter seven, I provide examples of how I have implemented my theories in my engagement with students and community members in- and outside the higher education classroom. These examples represent a further articulation of my sustainability education theories as they apply within a specific context.

The entirety of my dissertation embodies an instance of sustainability education praxis in that I articulate theories and reflect upon the application of my theories in an effort to further refine my teaching. My praxiological activities, therefore, also include praxis as a member of the academic community in that I offer my theories and examples of my pedagogical praxis to other educators as theoretical constructs and as contributions to the academic conversation about what sustainability education is and what it should be.
Chapter 2:  
The Critical Social Theory of Sustainability:  
A Theoretical Foundation for Sustainability-oriented Education and Praxis

In an effort to provide a framework for education and action toward addressing the sustainability crisis, I articulate in this chapter a critical social theory of sustainability. This theory draws upon key concepts from a diverse body of social critique including the theories of the Frankfurt School of critical theorists, Gramscian theories of praxis and agency, indigenous voices who critique modern capitalist society and offer alternatives to it, deep ecology, ecopsychology, and more. The critical social theory of sustainability articulated here can usefully inform education and praxis within the present realm of converging sustainability and economic crises of late capitalism. In the process of articulating the critical social theory of sustainability, I draw upon a wide range of critical theory, beginning with the CST of the Frankfurt School. Frankfurt School theorists, particularly Marcuse, serve as both a strong foundation and a springboard for articulating a critique of unsustainable societal and cultural aspects of domination and oppression of both people and nature.

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1 I use the term late capitalism explicitly to imply several things. I propose that the capitalist system is nearing its logical conclusion because it is both consuming the resource base necessary for its functioning and concentrating wealth in fewer and fewer hands. Intense concentration of wealth in the global economy increases both the extent and intensity of suffering and discontent among the dispossessed, and it spurs their resistance to the system, thereby threatening capitalism’s indefinite continuance. Concentration of wealth also impedes the circular flow of money required for continued consumption within the ever enlarging and overproducing capitalist system. This flow is being impeded to such an extent that the global economic system itself is nearing a breaking point. We cannot have continued growth in production in the face of depleting resources such as oil, fresh water, and arable land, and we cannot have continued economic growth at the same time that the ability of consumers to purchase goods is rapidly eroding. The system is starving and bankrupting itself. I do not, however, imply that we need only sit back and wait for the system to come apart of its own weight. In fact, such passivity in the face of impending collapse would virtually guarantee chaotic responses in which the uninformed and unprepared would lash out in desperation against many who had contributed little to creating the disaster. We must prepare for the end of capitalism by building alternatives to it, especially concerning the provision of basic needs. We must work to take the system apart and also be prepared for its possible sudden collapse. This rationale for using the term “late capitalism” draws on the works of Mandel (1972/1975) and Jameson (1991).
Why Choose Critical Social Theory as a Point of Departure for Sustainability-oriented Theory and Praxis?

As my understanding of the social roots the global sustainability crisis has grown, I have found it frustrating to hear calls to change our way of being in the world through individualized and isolated attempts at personal development and spiritual enlightenment while the societal aspects of human life on earth – those aspects that delineate our shared experience and outline the possibilities for our collective treatment of others and the earth – have remained largely unquestioned “realities.” Within the hegemonic social systems of modern-day global capitalism, the material, cultural, political, and economic aspects of our lives become increasingly circumscribed so that we have little choice but to participate in systems that undermine the very kind of personal and spiritual growth necessary for creating systems of healthy, sustainable living. I refuse to believe that a broad segment of society freely chooses to support these systems. I believe, instead, that our participation in collectively violent, even self-destructive systems derives in large measure from the design and functioning of interlocking systems of social power that characterize the modern, industrial, global-capitalist world. This belief parallels the central thesis of critical social theory (CST).

For many of us, our modern experience is like riding a runaway horse headed for a cliff. We feel powerless to change direction and fearful of leaping off, even though many of us are well aware of the ultimate peril we are in if we stay the course. We’re aware of the perils of the warming climate that is a result of industrial production and industrial style living; we’re aware of collapsing fisheries and dying coral reefs, of poisonous pollutants that harm ecosystems and our own bodies, and of the myriad other socio-ecological problems that have their roots in the industrial capitalist growth paradigm – but at least to this point in time, we have not collectively engaged in widespread, significant reconfiguring of our ways of life. The juggernaut of
continued globalization and economic growth rolls on. Still, many of us do realize that, without changing social power relationships, we have little hope of realizing true personal and spiritual growth that is most possible in community (rather than in the act of the contradictory isolation of egocentric efforts toward self improvement). We need systemic change so that community life, as lived in particular places, can recapture center stage as the appropriate vehicle for personal fulfillment, learning, and sustainability-oriented change.

Given this context, and due to CST’s central focus on critiquing and changing social power relationships characterized by domination and exploitation, I see the potential for CST to open windows of possibility for (re)creating sustainable societies.² Critical theorists attempt to comprehend, critique, and alter social structures and phenomena that embody features of oppression, domination, exploitation, and injustice. Through critiquing and altering these systems, critical theorists hope to change or eliminate these structures and phenomena and extend the scope of freedom, justice, and fulfillment. Oppression, domination, exploitation, and injustice figure prominently in today’s sustainability crisis, and these prominent aspects of the unsustainable paradigm provide openings for using critical theory as a vehicle for sustainability-oriented change.

Since critical theorists work to reveal the dynamics of entrenched power as it shapes social systems, CST as a framework for inquiry and action also presents distinct opportunities for developing empathy for those who find themselves trapped within interlocking social systems of domination and oppression. Cultivating such empathy can itself open possibilities for personal

² I place “re” in parentheses here and in other places throughout this dissertation in recognition that place-based cultures and remnants of these cultures remain in diverse places globally. For members of these cultures, the “re” in such words as re habitation and relocalization may not apply, and there may be no need to re-create sustainable cultures. The parenthetical “re” also recognizes that, for some peoples and places, examples have never existed or no longer exist to draw upon for place-based living, meaning that localized systems of sustainable living must be created for the first time from scratch. I will discuss the role of place in sustainability in Chapter Four.
and spiritual growth through recognizing one’s material, economic, social, political, and spiritual relationships to others – including countless others hitherto virtually unseen and unrecognized as having any bearing on the meaning and lived experience of one’s life. So, most certainly, I do advocate spiritual growth, but growth that is a shared experience, not a jealously guarded, solitary journey. The spiritual growth I advocate as most important to realizing sustainability derives from deep understanding of systems of domination and oppression as these have come to be and continue to be perpetuated in a wide variety of social and ecological settings. In the process of spiritual growth, this understanding is further cultivated through a growing empathy toward people and nature caught up in these destructive systems, and this deepened understanding is melded with practice. When engaging in this process, one is moved toward living a life in which his/her values and actions form a coherent whole that strives toward sustainability and justice.

I came to this conception of sustainable epistemology and spirituality through my own long process of observation and exploration and the resultant development of my worldview. I was fortunate, early on in my education, to be taught histories of people and movements that confronted and transformed unjust realities. These histories included the history of the labor movement and the struggle to regulate food quality and cleanliness. I also studied histories of many injustices perpetrated and suffered, stories in which the powerful forced their will upon others most decisively. In this vein, I learned the histories of the robber barons of late nineteenth and early twentieth century America and how these wealthy and powerful men built their empires on the backs of miserable masses of people. I learned about the institution and the legacies of slavery that have systematically disadvantaged descendents of slaves for generations, and I learned about the brutal conquering of the Native American tribes in my home state of
Arizona by the descendents of Western European colonists. Later, I learned about democratically elected Latin American governments toppled in coups staged by the government of my country, the United States, and I learned about how global systems of finance and dept systematically maintain the former colonies of Western European countries in a state of economic and social disadvantage and dependency that mirrors their colonial past. More recently, I learned about how injustices perpetrated upon people and Western industrial society’s subjugation and destruction of nature mirror one another. And I have learned and continue to learn many, many more stories that coalesce around similar themes.

These stories have led me to formulate a critique of domination as unjust and destructive to both people and nature. More recently, I have come to see how the destructiveness of domination is ultimately self-destructive to the dominant. Climate change, oil depletion, and the decline of ecosystems worldwide offer ample evidence that those who perpetrated the destruction have set in motion phenomena that will ultimately harm or destroy them as well. That my work as an educator and scholar derives from foundations in critical social theory is quite natural given my educational background, my interest in justice, and my understanding that entrenched and self-perpetuating social power are at the center of socially and environmentally destructive human behavior worldwide.

CST’s emphasis on praxis – a unity of theory and practice – has also made that body of work very useful to me in framing my work as a sustainability educator. Through my teaching, I have sought to engage students in praxis, and I believe it is because much of my teaching has centered on the theme of sustainability that the desire to do something about pressing problems studied has been a natural outgrowth of my professional development. Once I began to comprehend the depth and severity of the challenges facing humanity, I wanted to do more than
understand why and how unsustainability characterizes our modern, globalized world – I wanted to effect change. This impulse represents a strong parallel between my thinking and that of the Frankfurt School theorists who initiated CST. According to Bentz and Shapiro, “Horkheimer and his associates of the so-called Frankfurt School wanted to rehabilitate the original Marxian conception of an integral relationship between theoretical knowledge of society and the practice of radical social change” (1998, p. 151). Certain threads of CST continue to correlate with my findings from study I undertake in support of my teaching, and certain core ideas and themes in CST have held up well against reality as I have observed, studied, reflected upon, and attempted to change it.

In this chapter, I argue that critical social theory offers an appropriate lens for uncovering and analyzing the sources of the sustainability crisis. Within the current context, critical theory can provide educators and change agents working toward sustainability with the conceptual and analytical tools for understanding and synthesizing the many diverse aspects of the sustainability crisis in such a way as to reveal its central organizing themes. In this chapter, I build upon the foundations of CST that focus attention on social power relationships as playing formative roles in creating and perpetuating socio-cultural and socio-economic systems characterized by domination and oppression. I demonstrate how the domination and oppression of people mirrors domination and oppression of nature; and, from this premise, I formulate the critical social theory of sustainability. This theory, an extension of CST, is explicitly ecological in its orientation and explicitly oriented toward praxis. The CST of sustainability is also situated within an analysis of fossil fuel energy depletion and the impacts of that depletion on the global growth economy. In the energy depletion and overall economic context for the CST of sustainability is developed and articulated in Chapter Three of this dissertation.
sustainability can illuminate vital and appropriate avenues for change through education and action. It is my hope that the critical social theory of sustainability will facilitate sustainability praxis rooted in a worldview that sees domination and oppression as the central socio-ecological problem of our time.

We now turn our attention to examining how and why CST serves as an appropriate vehicle for both comprehending and acting to avert the converging socio-ecological crises of late capitalism.

*Why Are We Witnessing Converging Socio-ecological Crises of Sustainability, and How Can Critical Social Theory Help Us Understand the Sources of these Crises and Act to Resolve Them?*

These questions shape the conceptual framework of this chapter. For some time in my teaching and learning, I have been developing a set of theories about why and how modern, Western European-based, globalized, capitalist societies are characterized by what I call *enforced dependency* of individuals, communities, and entire societies on unsustainable social systems and institutions.\(^4\) My emerging theory is not entirely new. It shares a great deal with the critical social theory developed by the Frankfurt School beginning in the 1930s. Perhaps what *is* new about my theories is the direct and deliberate application of critical social theory to the rapidly converging socio-ecological and political/economic crises of our day, including global warming and the current or near-future peaking of global oil production. Others are working to explicitly extend critical theory into the realm of sustainability, but their efforts are fairly recent and not widespread.

Critical theory applies well to macro analysis of our unsustainable world and especially to the study of unsustainable systems and institutions and how these reproduce themselves in societies. According to Morrow and Brown (1994),

\(^4\) The theory of enforced dependency will be developed and articulated in Chapter Three.
[Critical theoretical] analysis at the level of system integration may involve concepts involving functional-type part-whole relations. This involvement entails the macrosociological assumption that society, as a contradictory totality, must be analyzed structurally as a process of reproduction and transformation of agency/structure relations over time. But system integration here is understood in terms of an interpretive structuralism that rejects the analogy of organic systems in favor of open, historical social formations. (p. 269)

Here, Morrow and Brown, in describing one thrust of critical social theory, elucidate a framework for analysis that I find useful in attempting to understand and alter social sources of unsustainable systems. They note how CST focuses attention on the structures of society built and perpetuated through systems of social power. They emphasize that human agency can alter these structures over time and that the structures of society are not analogous to laws of nature and are, therefore, open to challenge and change. In describing system integration as the result of “open, historical social formations,” not natural laws, Morrow and Brown imply that CST critique, as a response to historically and culturally specific social formulations, does not attempt to uncover absolute truths. CST theories and actions based upon those theories must always remain contingent and open to emerging histories and interpretations of those histories.

As a vehicle for analysis at the system integration level, CST can be used to address questions such as these: In spite of the development and dissemination of a great deal of credible evidence pointing to a need for socio-ecological change to mitigate converging socio-ecological crises, why do large scale social systems exhibit an inertia that seems to preclude making needed changes? How do systems of social power reproduce and reinforce themselves over time, and how are these systems related to the inertia present in unsustainable social systems? What roles
do individuals and groups, operating at various levels and in various capacities, play with regard to reinforcing or resisting systems of social power?

These are questions that can lead to understanding important social and historical forces at work in the current unsustainable social paradigm. This understanding can be articulated as social theory, and it is this kind of theorizing that I undertake in this chapter. Note that the form of theory building in which I engage recognizes that systems, in their formation, functioning, and possible alteration or destruction, exist within history as the cause/result of specific conditions and the actions of individuals and groups. These same systems, therefore, can be altered through individual and group agency: people both create systems and are, in many ways, created by them. This chapter explores this dynamic.

In order to articulate why and how CST can serve as a vehicle for sustainability-oriented understanding and action, and in order to create a foundation for explicitly extending this body of theory into the realm of sustainability, I must first grapple with the meaning of the term sustainability. I must then elucidate the conceptual framework of CST to this point in time. Doing so will help me to identify the threads of that body of work that most effectively support the extension of CST into the realm of sustainability education and action.

**A Working Definition of Sustainability**

A central argument of this chapter – that sustainability must be the top priority for human societies – first requires an examination of the meaning of sustainability. The first widespread use of the term “sustainable” derived from its definition in the 1987 report of the World Commission on Environment and Development headed by Gro Harlem Bruntland: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (quoted in Allen, Tainter, & Hoekstra,
2003, p. 25). Many have critiqued the anthropocentrism of this definition. For our purposes here, the expressed concern for the long term future is useful, but this definition does not take us far in discussing with any precision the sustaining of human ecology, the sustaining of broader ecological systems, or the relationship between the two.

Our definition here must integrate humans and environment: to conceptualize humans as separate from environment and nature is unacceptable because this dichotomy is part and parcel of the current unsustainable paradigm’s power structures and systems of exploitation. This separation infuses the themes of our unsustainable, late capitalist, global reality. Here, I use theme in the way that Paulo Freire (1970/2000) defines it in Pedagogy of the Oppressed. According the Freire, in order to understand and change the current unsustainable paradigm, people oppressed by it must be able to “name the world”: to conceptualize themes of oppression as a key activity toward transforming the world and ending oppression (p. 88).

In order to conceptualize themes of oppression, it is important to identify who and what is oppressed. I argue that the systematically impoverished, all those whose cultures and places are being destroyed by globalization, and the middle classes – who live in a state of enforced dependency upon unsustainable economic and social systems – are oppressed under the current paradigmatic system. What besides oppression can one call the calculated circumscription or utter elimination – for profit – of opportunities for personal choice; for physical, emotional, and spiritual health; and for living in healthy, reciprocal relationship with place? Nature is also oppressed in that, in a pattern that parallels the oppression of people in society, its purposes and very being are subjected, controlled, and systematically destroyed to create profits and economic growth. Those who reap the profits and hold the increasingly concentrated wealth and power of the world are the oppressors, though they too will become oppressed under the converging
ecological and social crises of our time, if these crises come to pass with the full force of their potential for destruction. Even now, both oppressors and oppressed suffer dehumanization under the current paradigm. According to Freire (1970/2000), “As the oppressors dehumanize others and violate their rights, they themselves also become dehumanized” (p. 56).

If humans and the natural world operate as an integrated system, if the denial of an integrated human/nature complex is at the heart of many converging crises in the world today, and if social justice is necessary for ecological sustainability – all points argued here – we need a definition of sustainability that calls us to analyze and potentially transform human/nature relationships. James Pittman’s *living definition of sustainability* (2007) offers us such an integrated vision that focuses on the health and integrity of human/nature systems. Pittman defines living sustainability as “the long-term equilibrium of health and integrity maintained dynamically within any individual system (organism, organization, ecosystem, community, etc.) through a diversity of relationships with other systems.”

Pittman’s living sustainability describes what I will call socio-ecological living sustainability. I use *socio-ecological* in addition to *living* because *ecology* – the study of the earth household – is inherently concerned with relationships – with systems views – and these views are central to exploring power and exploitation. Using the term *ecology* highlights the fact that the systems referenced in the definition include both living and nonliving components of earth systems. This definition is *socio-*ecological because society is embedded within ecology, and the definition is *living* because, like all life, it is open to change driven by historical and natural forces. This openness to change highlights an important aspect of the definition: it is place specific; what might be sustainable in a given context is not necessarily so in every context. The appropriateness of changes to and adaptations of this definition is therefore place-specific in the
same way that the appropriateness of life adaptations is in many ways determined by the specific context. This definition, to remain viable, must take form and evolve in living situations. 

*Sustainability*, then, is a set of lifeways lived within specific, historical circumstances. Within these lifeways, considerations of the “long-term equilibrium of health and integrity” remain the central focus for communities.

Systems characterized by sustainability thusly defined would contrast sharply with the global capitalist world of today within which both humans and nature are used as tools to translate the health and wealth of the world into vast riches for a few and servitude and suffering for many. According to this definition of socio-ecological living sustainability, a sustainable society and world must prioritize the health and integrity of all community members and must foster relationships that create and support their well being and recognize their intrinsic value. This definition of sustainability invites serious, justice-oriented exploration of the world as it is and as it could become. It invites both critique of the world as we know it and the building of alternatives to the current reality.

This concept of sustainability clearly includes social justice and recognizes that all possibilities for sustainability depend upon our abilities as individuals and communities to effectively and radically transform our world within a framework of intra- and intergenerational justice. In such a transformed world, we would extend the concept of community membership to both human and nonhuman nature in order to (re)establish community and individual lifeways based on respectful reciprocity. As in many indigenous societies (Armstrong, 1995; Cajete, 2001; LaDuke, 1999; Martinez, 1997; Nelson, 1983; Salmon, 2000; Sveiby & Skuthorpe, 2006), healthy, reciprocal relationships among people and between humans and nature would replace
relationships characterized by unhealthy co-dependence between the dominant and the oppressed – a form of human to human and human to nature relationship that pervades global capitalism.

Throughout this dissertation, the term sustainability refers to the concept of socio-ecological living sustainability, and my work here is directed toward sustainability-oriented transformation within the life systems of the world. In order to lay groundwork for developing a critical social theory of sustainability, we now turn to the history and intellectual roots of CST in an effort to identify those threads of existing theory most appropriate to extending CST explicitly into the realm of sustainability theory and action.

*Intellectual and Historical Roots of the Critical Social Theory of Sustainability: A Foundation for Sustainability-oriented Education and Praxis*

Critical theory is closely associated with the Frankfurt School of social theorists whose ideas represent an articulation and extension of Marxist-derived social theory for 20th century historical contexts. Theory relevant to my own work includes some contributions of the Frankfurt School theorists. Additional relevant theory includes works that articulate well with certain core ideas generated by the Frankfurt School but that do not necessarily recognize or explicitly draw a connection with Frankfurt School thought. I draw from and integrate works both within and outside Frankfurt tradition in developing a critical social theory of sustainability that, in turn, serves as the foundation for my critical pedagogy approach to sustainability education.

*Overview of Critical Theory*

Critical theory is closely associated with the Frankfurt School of social theorists (Max Horkheimer, Herbert Marcuse, Eric Fromm, Walter Benjamin, Theodor Adorno, and others) whose ideas represent an articulation and extension of Marxist-derived social theory applied to 20th century historical contexts. According to Bentz and Shapiro (1998),
[CST] attempt[s] to understand, analyze, criticize, and alter social, economic, cultural, technological, and psychological structures and phenomena that have features of oppression, domination, exploitation, injustice, and misery. They do so with a view to changing or eliminating these structures and phenomena and expanding the scope of freedom, justice, and happiness. The assumption is that this knowledge will be used in the process of social change by people to whom understanding their situation is crucial in changing it. (p. 146)

Bentz and Shapiro further summarize the nature and purposes of CST: “The purpose of [critical theory] inquiry is to change oppressive social conditions and to educate some or all of the public about these conditions and the possibility of changing them” (p. 157).

In critical theory, context is of the utmost importance in understanding and transforming social systems (Bentz & Shapiro, 1998, p. 146). Critical theory examines how large scale social systems manifest themselves in and reproduce themselves through specific phenomena and, reciprocally, how these phenomena contribute to the construction and perpetuation of the larger system. In critical theory analyses, systems are historically situated and can only be grasped as products of and active agents within particular histories. Critical theory draws upon the concept of dialectic developed by Marx and Hegel in that it calls for analyses of historical phenomena, both small and large scale, in terms of their internal contradictions (Bentz & Shapiro, 1998, p. 147). Additionally, critical theory is concerned with the agency/structure dialectic of society: possibilities for proactive change or agency are paired in a unity of analysis with existing power structures in society that mitigate against changes and, thereby, reinforce and reproduce oppression (Morrow & Brown, 1994, p. 228).

Generation of critical theory involves using reflexive methods based in negotiation and argumentation. These methods can include historical analysis and interpretation, textual analysis, self-reflexive analysis, and metatheoretical argumentation, such as epistemological critique of

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5 These self-replicating and self-reinforcing aspects of the social systems of globalization underpin the concept of enforced dependency developed in chapter three.
research methods and heuristics (Morrow & Brown, 1994, p. 232). CST engages in immanent critique and ideology critique as central processes for generation of theory. In immanent critique, institutions and societies are analyzed according to their ability to keep their word. Such critique uses the society’s or institution’s own standards as the measure of success rather than critiquing the institution or society from the outside. For example, if a society claims to be free, immanent critique could serve as a means to determine the extent to which that society lives up to its own conceptions of freedom. Ideology critique is similar to immanent critique in that it deals with rhetorical contradictions. Ideology critique of a society or institution focuses on contradictions between official stories (ideologies) and experience (Bentz & Shapiro, 1998, p. 148). The widely believed notion that any person in America has real potential for living the “American dream” serves as a good example of an official story that could be a focus for ideology critique. In probing this notion, one could ask both how and why the American dream became a widely held notion as well as how and why the story of the American dream differs from the lived experience of many Americans.

A central premise of critical theory is that a more just world is an intrinsically valuable goal for human societies, and that a more just world would be one in which social relationships of domination and oppression were continually reduced, and ultimately eliminated (Bentz & Shapiro, 1998, p. 146). Critical pedagogy, as we shall see in chapter six, represents the work of realizing these goals through a praxis anchored in a critically informed view of the world (Freire, 1970/2000, chap. 1). According to critical theorists, we must uncover, critique, and engage in praxis to eliminate oppressive power relationships. This work is necessary precisely because oppressive power is at the heart of all social injustice (Freire, 1970/2000). The ultimate goal of critical theory is widespread praxis, ultimately resulting in liberation of the oppressed and
oppressors alike (Freire, 1970/2000, p. 88; Morrow & Brown, 1994, p. 158). The freedom experienced in such a world would be both negative (freedom *from*) and positive (presence of opportunity). CST strives toward freedom *from* the heavy burdens and constraints of oppression and freedom *to* realize one’s humanity in healthy, mutual relationship with others. Both of these freedoms are heavily constrained within the globalized industrial capitalist paradigm. I will argue in chapter three that the collectively violent⁶ principles upon which the paradigm operates systematically concentrate wealth and power in fewer and fewer hands while also extending and deepening dependence on the system.

The scope of CST is vast, especially when the critical project is extended into the realm of the current sustainability crisis. Understanding the systemic and ideological factors that create and enforce the continuance of oppressive human to human and human to nature relationships is a daunting task that includes understanding, among other things, both the functions and composition of natural systems (of which humans are part), understanding political economy and geopolitics, understanding the use and abuse of power in human systems, and understanding the historical and ecological legacies that inform unequal power relationships in global systems. Though grand in scope, CST does not offer a grand-narrative version of history and does not subscribe to drawing direct analogies between human social systems and natural history/systems. Because of its insistence on the role of historical specifics in creating current realities, CST avoids insinuating the inevitability of the world as we know it today.

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⁶ See Summers & Markusen, 1992/2003, p. 215. These authors define collective violence as actions by large numbers of people that inflicts harm on people and/or environment.
A Brief History of Critical Social Theory

In this section, I discuss particular themes and threads of critical theory that are most important to developing the critical social theory of sustainability.7 I build upon some of the central tenets of CST, integrate these with other important and related socio-cultural and socio-ecological theories, and thereby create a solid platform for extending CST into the realm of the current sustainability crisis. First, I will revisit the history of CST in brief in order to chart its trajectory and envision how that trajectory might usefully be extended into the future as an effective vehicle for sustainability-oriented change.

The Institute for Social Research of the University of Frankfurt, later dubbed the Frankfurt School, was founded in the early 1920s (McLaughlin, 1999, p. 111). Under its first director, Carl Grünberg – an Austro-Marxist – Marxism became the theoretical basis of the school’s program (Held, 1980, p. 29). In 1930, Max Horkheimer became the director. Under his direction, theorists associated with the Institute worked to adapt Marx’s theories of political economy to the contemporary context. These theorists recognized that the economic determinism developed by Marx had not accurately predicted the capitalist world of the twentieth century. Though they found much of value in Marx’s original analyses, these theorists working in 1930s Germany contended with questions of why conditions of political economy had not triggered the socialist revolution predicted by Marx and, most importantly, why fascism was on the rise within the capitalist context. In exploring these questions, Frankfurt School theorists turned their attention to socio-cultural aspects of modern life. They contended that aspects of culture serve to entrench the powerful in their positions of advantage and to create momentum and inertia within socio-economic systems in ways that simultaneously reproduce and extend the capitalist sphere

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7 More thorough and detailed histories of the Frankfurt School and critical theory are available elsewhere (Dant, 2003; Held, 1980; McLaughlin, 1999).
while also undercutting impetus toward socialist revolution. This particular thread of CST, powerfully articulated by Marcuse in his *One-Dimensional Man* (1964), is of particular importance to developing the CST of sustainability as a theory that effectively grapples with how hegemony manifests in society as socially and environmentally destructive collective behavior. This thread of CST helps us comprehend how and why such behavior continues, even in the face of widespread knowledge about poverty, social and environmental injustice, and widespread ecological decline.

Another important theoretical development of the Frankfurt School that dates from the 1920s is the melding of the Marxist theoretical tradition and its insights concerning political economy with Freudian psychoanalytic theory regarding identity formation and social repression of instinctual urges (Held, 1980, chap. 4). This melding created a springboard for the Frankfurt theorists’ critiques of culture as a central vehicle for development and reproduction of the administered society and its capitalist political economy. This synthesis also created openings for exploring individual malleability and susceptibility to ideological control.

In 1933, the Institute was moved to Geneva as the Nazis rose to power in Germany, and in 1935, it was moved to Columbia University in New York (Held, 1980, p. 34). Particularly since the school’s exile to the United States, theorists of the Frankfurt School and their disciples such as Jürgen Habermas have created a diverse body of theory that has touched many disciplines. It can hardly be said that the critical theorists of the Frankfurt School tradition agreed in all aspects of their work or that they were even working within the same field of study at any given point in time. Therefore, several models of critical theory with divergent foci emerged (Held, 1980, p. 34). According to Held,

The themes covered by the Frankfurt School [during its exile from Germany] … are extensive. They include discussions of theories of capitalism, of the structure of the state,
and of the rise of instrumental reason; analyses of developments in science, technology
and technique, of the culture industry and mass culture, of family structure and individual
development, and of the susceptibility of people to ideology; as well as considerations of
the dialectic of enlightenment and of positivism as the dominant mode of cognition. As
always, it was the hope of Horkheimer and the others that their work would help establish
a critical social consciousness able to penetrate existing ideology, sustain independent
judgment and be capable, as Adorno put it, ‘of maintaining its freedom to think things
might be different.’ (1980, p. 38)

In the post World War II era, Horkheimer and Adorno maintained their focus on extending the
valuable contributions of Marx and other leftist thinkers into the contemporary context while, at
the same time, attacking Soviet Marxists. Accordingly, they pleased neither “conservative
authorities nor radical thinkers,” and their politically independent positions led to challenges
from all sides (Held, 1980, p. 39).

Marcuse’s work became highly popular with the New Left in the 1960s and 1970s due to
his commitment to politics and to contemporary radical social struggles. During this time, he
became perhaps the most prominent theoretician of the left. Through Marcuse, the critical work
of the Frankfurt School in the areas of culture and authoritarian/bureaucratic society became well
known, and it was Marcuse that began to expand the work of critical theory into the realm of

After the 1970s, as the social struggles of the past two decades died out or manifested in
less directly confrontational settings and efforts and as the neoliberal political economy and the
radical individualism of the so-called me generation moved into full swing, interest in critical
theory in academe and politics slowed to a trickle. In the current time, in which the divide
between rich and poor has never been wider and in which the very mechanisms that once seemed
capable of driving an ever more rapid expansion and deepening entrenchment of the capitalist
project seem themselves to be breaking down – an opportunity is emerging to build upon the rich
body of critical work developed and instigated by Frankfurt School theorists from the 1930s
though the 1970s. Some of their insights may apply equally well, if not better, to interpreting today’s societies.

Early critical social theory, with its roots in Marxist analysis, had a great deal to say about society and economy and very little to say about our relationship to nature, though its critiques of society and political economy are highly relevant to sustainability-oriented theoretical exploration and praxis. As sustainability-oriented theorists, educators, and activists come to see with increasing clarity that oppression of people and domination and destruction of nature are two sides of one coin representing the same exploitive values and practices, CST-oriented analysis is being extended to include human relationship with environment (Gruenewald, 2003; Kahn, 2010; Kovel, 2002; Leonardo, 2004; Merchant, 1999, 2008; O’Connor, 1991/2008). This more inclusive analysis of domination and oppression is not entirely new (Marcuse, 1972/2008), but the CST emphasis on socio-ecological critique is only recently gaining strength.

**Toward a Critical Social Theory of Sustainability**

In the remainder of this chapter, I draw upon chosen themes and ideas within CST and other critical theories, selecting those that I deem to offer the strongest and most appropriate foundations for confronting the converging sustainability crises of the modern world and for encouraging sustainability-oriented agency. I include the work of theorists not usually associated with the CST of the Frankfurt School, but whose theories articulate well with the central premises and purposes of the CST of sustainability. Some contemporaries of Frankfurt School theorists together with some theorists active since the 1970s (when interest in CST began to wane) share central values and tenets with CST. The work of a number of these theorists is immensely helpful to developing a critical social theory of sustainability, and I integrate portions
of their work into this emerging theory. I also situate my own work within the CST tradition as an extension of that body of theory into the current global context of peak oil, climate change, and limits now in sight for global growth capitalism. I do not offer a comprehensive or fixed version of the critical social theory of sustainability, but one that works historically and provisionally, and one that serves as an appropriate foundation for praxis in my college and community.

**Questioning the Modern Worldview**

Critical social theory is historically specific, rooted in the context of modernity as a system of beliefs and values that evolved out of the Enlightenment. Many critiques of society offered by critical theorists hinge upon a critique of the intellectual systems that define modernity. *Dialectic of Enlightenment* by Theodor Adorno and Max Horkheimer (1944/1972) is an obvious example. In order to form a basis for understanding and interpreting CST, we begin here with a discussion of modernity as an intellectual and social construct.


According to Spretnak, within the modern worldview, humans are viewed as primarily *economic beings*. It follows that the satisfaction of human material needs and desires is of primary importance, although, as Spretnak points out, the emphasis on accumulation typical of capitalist societies actually worsens the material foundation of the natural world that is the foundation of all human systems (1997, p. 219). Spretnak claims that the values, beliefs, and
orientations inherent in modernity reinforce the likelihood that humans living in the modern world will conceive of themselves and behave as *homo economicus* (Spretnak, 1997, p. 219).

Among these values, beliefs, and conceptual orientations are:

- Progressivism, “the belief that the human condition progresses [in a linear fashion] toward increasingly optimal states as the past is continually improved upon”;
- Objectivism, “the belief that there is a rational structure to reality, independent of the perspectives of any particular cultures or persons, and that correct reason mirrors this rational structure”;
- Rationalism, the conception that “knowledge, belief, and the basis for action are properly derived solely from reason … ’untainted’ by emotions”;
- A mechanistic worldview, the belief that “the physical world is composed of matter and energy, which operate in various constellations of cause and effect according to ‘laws’ of nature [so that] occurrences of creative unfolding and complex interactive responses in nature have no place” in our conception of the world;
- Reductionism, the idea that “understanding physical entities … is achieved by breaking them down into smaller and smaller parts”;
- Scientism, “the belief that all fields of inquiry can attain objective knowledge by modeling their practices after the investigative methods of science”;
- Emphasis on efficiency through standardization, bureaucratization, centralization of power and decision making, and hierarchical institutional systems;
- Anthropocentrism, the belief that humans are what matters most in the universe;
- Emphasis on instrumental reason, “modes of thinking used to achieve desired ends rather than to determine values”;
• Opposition to nature that includes a conception of “nonmodern societies … as having been ‘held back’ by unproductive perceptions of holism and by conceptualizations of human culture as an extension of nature with reciprocal duties”;

• Compartmentalization, where life is “considered to exist in discrete spheres … such as family life, work, [and] social life”;

• A belief in the value of throwing off the chains of religion and superstition through rationalism; and

• “The shrinkage of the cosmological context, the sacred whole, to the scale of humans” (Spretnak, 1997, pp. 219-221).

Spretnak notes that this system of values, beliefs, and orientations is also highly gendered – that modernity is “hypermasculine” and patriarchal because valued ideas and practices are identified as characteristic of males while devalued ideas, practices, and characteristics – such as emotionality, empathy, and identification with the earth (as in earth-centered, Pagan or indigenous belief systems) – are indentified as characteristically female (Spretnak, 1997, p. 221). This gendered bifurcation of values and practices parallels the false dualism of the human/nature construct. Once such dualisms are internalized, a hierarchical arrangement of differentiated parts follows, and that which is seen as other to those in power is devalued.

The system of beliefs inherent in modernity is further supported by Christianity’s emergence as the dominant religion of Western Europe and its colonies. In her essay “Reinventing Eden: Western Culture as Recovery Narrative” (1996), Carolyn Merchant states that “the story of Western civilization since the seventeenth century … can be conceptualized as a grand narrative of fall and recovery.” She continues by stating that “three subplots organize its argument: Christian religion, modern science, and capitalism” (p. 133). Merchant’s essay focuses
on the human dominion theme of the bible, rather than the human stewardship theme, with regard to human/nature relationship. Although the stewardship theme is also clearly present in the bible (Barbour, 1993, pp. 75-77), Merchant correctly identifies the dominion theme as the one that has most easily joined forces with both scientism and capitalism to reinforce the systems of power that emerged during the modern age. The modern recovery narrative Merchant explicates is that of female, fallen nature being subdued and civilized through conceptually male systems of rational belief and action.

Within the construct of modernity, the myth of scientific rationality replaces other ways of knowing. According to Tim Dant (2003):

Critical theorists argue that the form of myth actually resurfaces within the adoption of the [rational] methods of science and technology as the only adequate mode of knowledge. What appears as rationality … begins to operate as myth in the sphere of culture…. As a cultural system it becomes mythic through rigidifying the processes of nature, treating them as predetermined and beyond the power of human will. It is the unitary and unbending form of reason in modernity that lends itself to domination, both of nature and of human will. (p. 25)

As the epistemology of the modern era, rationality itself is reified and, therefore, becomes irrational making possible the use of reason to serve ends that destroy nature and that are, thereby, ultimately self-destructive. Therefore, the CST of sustainability includes critique of the ways in which values and assumptions that comprise the modern worldview inform unsustainable socio-cultural systems.
**The Critique of Domination**

A central focus of the CST of sustainability is critique of domination within socio-ecological systems as unsustainable. This section draws upon theoretical critiques of domination and oppression as formative dynamics of global, industrial capitalism and capitalist culture. Marcuse’s critique (1964) anchors this discussion because it most effectively addresses the question of why socio-ecological problems of unsustainability have reached the crisis stage while penetrating critiques of the sources of this crisis have been available for decades. The critique of domination offered here also draws upon indigenous and ecofeminist thought and includes voices from the environmental justice movement. These critical traditions extend the critique of domination into new areas highly relevant to developing the critical social theory of sustainability. I also draw upon Karl Marx’s (1844/1964) theory of alienation of labor as a process that heavily contributes to domination and oppression of common people. Karl Polanyi’s (1944/1957) work also proves important here in that he offers a critique of industrialism that sheds light on the human history of community in a way that speaks to the importance of (re)establishing reciprocal, sustainable relationships between people and between people and place. I draw upon the work of Pierre Joseph Proudhon (1902/1966) as well for insight into how government has contributed to enforcing the dependency of the masses upon those who dominate global society.

At the very center of CST lies the critique of domination that lays bare the exploitive and destructive mechanisms of modern, corporate, globalized capitalism. It is through this central organizing critique that CST can be usefully extended into the realm of sustainability. The critique of domination is relevant to conceptualizing a critical social theory of sustainability because it so aptly serves as a means to comprehend and contribute to reversing the destruction
of people and nature – both of which serve as fodder for the growth economy and the extension of the capitalist regime into every corner of the globe. The destruction of nature is at the center of the sustainability crisis. This destruction proceeds along with the obliteration of diverse human cultures developed in specific places and ecosystems, indigenous cultures that embody both the means and meaning of living in unmediated relationship with nature as the source of all life. The CST of sustainability focuses on domination and oppression in the realms of both society and nature, and it is particularly concerned with how the domination and oppression manifested in both realms articulate with and reinforce one another.

According to Marx (1844/1964, pp. 106-119), alienation is a facet of the capitalist mode of production through which human work is fragmented and the relationship of that work to nature as an integrated system is abstracted and obfuscated (p. 114). According to Marx, work and production are natural to humans and are done in the absence of physical and material need (p. 113). Work is a meaningful activity through which humans express their species being and contemplate their relationship to nature and their meaning within nature. Through work, humans change nature and thereby change their own nature. In order for this process to be a meaningful expression of humanity, however, workers must control the processes and the products of their work. According to Marx:

It is just in his work upon the objective world … that man first really proves himself to be a species being. This production is his active species life…. The object of labor is, therefore, the objectification of man’s species life: for he also duplicates himself not only, as in consciousness, intellectually, but actively, in reality and therefore he contemplates himself in a world that he has created. In tearing away from man the object of his production, therefore, estranged labor tears from him his species life…. (p. 114)

Wage labor and the introduction of the detailed division of labor in the nineteenth century reduced workers to a commodity – labor – and robbed them of control through the deskilling of
artisans. Marx also recognized that these changes in production transferred the locus of work from the home to the factory (Dant, 2003, p. 61). This dislocation and the resultant abstraction of the market economy further centralized power and control in the hands of management and created the conditions for widespread commodity fetishism. Factory production and the centralization of control inherent in the capitalist mode of production systematically undermined self-sufficiency and created a system of enforced dependency of workers on the free market distribution of commodities.

Polanyi similarly cites factory production as the basis for creating a mode of production and a self-regulating market that would undercut and eventually virtually eliminate the ability of people to work and support themselves independently of the capitalist system:

> Although the new productive organization was introduced by the merchant … the use of elaborate machinery and plant involved the development of the factory system and therewith a decisive shift in the relative importance of commerce and industry in favor of the latter…. The more complicated industrial production became, the more numerous were the elements of industry the supply of which had to be safeguarded. Three of these … were of outstanding importance: labor, land, and money. In a commercial society their supply could be organized in one way only: by being made available for purchase…. The extension of the market mechanism to the elements of industry – labor, land, and money – was the inevitable consequence of the introduction of the factory system in a commercial society…. As the organization of labor is only another word for the forms of life of the common people, this means that the development of the market system would be accompanied by a change in the organization of society itself. All along the line, human society became an accessory of the economic system… (1944/1957, p. 75)

Polanyi concludes that “improvements” of industrialism were “bought at the price of social dislocation” (p. 76).

Writing a century before Polanyi on the question “what is property?”, Proudhon (1840/1966) makes similar points to those of Polanyi (1944/1957) with regard to the

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8 Similarly, Kropotkin (1902/1989) argues that systems of mutual aid, free association, and decentralization of social power and control -- that characterized tribal societies, village life, and the medieval cities of Europe during the era of the craft guilds -- represented forms of social organization themselves characterized by nonalienating production. We will return to these ideas and discuss their relationship to sustainability in chapters three through five of this dissertation.
commodification of the basic factors of production. He concludes that property is theft 1) because it is a means of eliminating traditional access by common people to the basic factors of production and 2) because these factors of production were not created by property owners but were stolen from the natural commons that is the birthright of every person. While Polanyi (1944/1957) and Marx (1844/1964) emphasize the mode of production as a central causative factor in the alienation of labor, Proudhon (1902/1966) emphasizes the role of government in sanctioning the creation and maintenance of rights to private property as a central cause of the alienation of producers from the factors of production. Both of these forms of alienation and the concentrated powers that produce them have combined to enforce dependency of common people on goods and services produced by means over which they have little control.9

The forms of material and psychic domination that characterize global growth capitalism have their roots in the alienated dependency fostered by the capitalist economic system and its means of production as well as by governments that historically created and maintained the rules of the capitalist system. The CST of sustainability recognizes that the organization of labor and production combined with widespread dependence on the free market as a provisioning system are central means through which the capitalist order dominates and controls individuals and societies globally. Therefore, alternate means of production and consumption that reduce dependency and that foster community control of economy and the restored subservience of economy to society should inform social critique and action in support of sustainable living.

Critical theorists extend Marx’s critique of the mode of production by analyzing how domination, characterized by both social control of the individual and dependency of the individual on the system, is perpetuated and entrenched through culture. These theorists

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9 We will explore these issues of enforced dependency in more depth in chapters three through five of this dissertation.
developed a critique of work as capitalist production and reproduction extending beyond the realm of industrial production and into all aspects of modern life. Dant (2003) summarizes the thinking of Adorno and Horkheimer on this point:

As enlightenment thinking has taken hold of modernity, technology has led to a systematic organisation of work that employs tools and machinery in the domination of nature. That systematicity has extended to the domination of workers, whose work life … is driven by the rhythms and demands of machines. What the critical theorists argue is that these processes extend into the cultural life of modern society. Just as the worker is dominated at work, so (s)he is at home and in leisure, which leads to a restriction of private life outside the process of production. (p. 46)

According to Adorno and Horkheimer, the culture industry produces “consumers as so many automatons, all thinking and acting in the same way” (Dant, 2003, p. 47) so that amusement, as part and parcel of the reproductive mechanisms of late capitalism, is an essential element of work that sustains the capitalist order (Dant, 2003, p. 47). Similarly, Baudrillard claims that, in both work and non-work, the individual participates in the circulation of signs, symbols, and values that reinforce and perpetuate the system of late capitalism. Dant summarizes Baudrillard’s critique in stating that “Marx’s analysis of the mode of production has collapsed into the sphere of consumption” (2003, p. 57).

The continual expansion and deepening of domination and exploitation of people and nature is ecologically unsustainable, and it is moving industrial society toward social collapse. While domination of landscapes and human others seemed for a time to benefit the dominant, we are now witnessing diminishing returns on the strategy of subjugation for production and profit as these strategies confront natural limits (Meadows, Randers, & Meadows, 2004), and perhaps the limits of human tolerance for abuse (Homer-Dixon, 2006, pp. 204).

As Joseph Tainter noted in his work The Collapse of Complex Societies (1988), societies become vulnerable to collapse as an outgrowth of an internal dynamic of increasing
complexification. Certainly, late capitalist industrial society is the most complex in human history. According to Tainter, social complexity – evidenced by society having “more parts, different kinds of parts, more social differentiation, more inequality, and more kinds of centralization and control” – is a problem solving strategy (p. 37). Societies invest in growing complexity as a means to solve problems and may receive high returns on this investment early on in terms of social adaptation to stresses. These investments have costs in terms of money, effort, energy, etc., and they will eventually yield diminishing returns, but societies keep investing in complexity because they do not stop encountering problems (Homer-Dixon, 2006, p. 223). It is important to note that this continual investment in further complexity as a means to solve social problems benefits some more than others – typically those with disproportionate social power. Eventually, according to Tainter (1988), for growing numbers of people, the returns on continued investment in complexity become small or even negative when compared to the alternative: collapse of the complex society into a reduced state complexity (chap. 4), perhaps into a form in which “small, internally homogeneous, minimally differentiated groups [are] characterized by equal access to resources, shifting, ephemeral leadership, and unstable political formations” (p. 37). Late capitalist society is likely nearing such a collapse as continued investments in technologies, bureaucracies, economic integration, and political control create a plethora of problems that require social response.

Living as they did prior to both the obvious convergence of socio-ecological crises of sustainability and the rapid upswing in the pace of globalization, and also having been touched directly by the rise of fascism in Europe, the founders of critical theory focused a great deal of attention on destructive collective behavior, exploring how and why individuals participate in extensive collective violence and self-degrading behavior instigated by authoritarian leaders or
by an overarching social system pervaded by authoritarian logic. Individual humans have adapted and bent to the needs and judgment of community since time immemorial (Tar, 1977, pp. 88-89), but critical theorists recognized something qualitatively different in the bending of human will and desires to fit the capitalist mode of production and capitalist cultural reproduction. They also noted technology’s central and catalyzing role in fostering capitulation to the logic of the system (Marcuse, 1964, p. 158).

Critical theorists, immersed in the intellectual tradition the Enlightenment (though they directly confronted and challenged Enlightenment thinking and constructs) (Tar, 1977, p. 88), tended to focus on the individual as the rightful center of sovereignty and the central focus for considering questions of human mental and social health. With their partiality to Freudian analysis, critical theorists tended to interpret the domination of the human sphere in terms of individual repression and to focus less attention on the destruction of indigenous and place-centered communities as a characteristic phenomenon of the capitalist machine. The focus of critical theorists on the individual derives from their emphasis on autonomy. According to Maeve Cook (2005),

Critical social theory is not individualist in the sense of asserting the priority of individual goals at the expense of communal and social values or in the sense of conceiving of human beings atomistically, as self-contained centres of ethical value. Indeed, critical social theories frequently appeal to an idea of social solidarity and understand ethical value in intersubjective terms. Nonetheless, this kind of theory is individualist in two important senses. First, in the sense that it prioritizes individual human flourishing over that of the collective. Second, in the sense that it stresses the need for the individual herself to be able freely to accept a given conception of human flourishing as the best …. The concept of autonomy articulates its commitment to individual freedom in this sense. (p. 383)

The focus on individual repression is as relevant today as it was during the times in which the founders of critical theory were living. In particular, Marcuse’s concept of repressive desublimation of individuals within late capitalist society remains a most relevant critique of a
complex form of domination that continues to pervade industrial societies. Marcuse elucidates this concept in his *One-dimensional Man* (1964) where he argues that individuals in late capitalist industrial societies participate in their own oppression as they are coerced by the dominant culture to surrender their liberty in exchange for material objects and comfort and the sensuous consumption of products of the culture industry. In Freudian terms, desublimation would mean an end to repression of the satisfaction of sensuous individual desires. Marcuse argues in his development of the oxymoronic concept of repressive desublimation that, when the satisfaction of these desires becomes the central organizing principle of society, possibilities for democracy shrivel, and people allow tyrants to shape the realities of the lived experience of the masses. For Marcuse, under late capitalism, desublimation for the masses ironically leads to their captivity and repression in all facets of life, other than the satisfaction of raw material needs.\(^\text{10}\)

Marcuse argues that uncovering the contradictions of advanced industrial society has become an incredibly difficult for most people because the powers that be have done such a masterful job of creating a world in which their particular needs for maintaining their hegemony have been made congruent with the perceived needs of the many. In such a world, the possibility for critique is heavily undermined even as domination and oppression persist.

Marcuse (1964) implies that democracy can only exist absent the coercive and self-reinforcing repressive desublimation that characterizes late capitalist industrial society: “The rights and liberties which were such vital factors in the origins and earlier stages of industrial society yield to a higher stage of this society: they are losing their traditional rationale and content” (p. 1). He continues:

\(^{10}\)Marcus’s concept of repressive desublimation is similar in some but not all aspects to Antonio Gramsci’s (1971/1999) concept of hegemony which will be discussed later in this chapter. Social control through repressive desublimation requires that the individual attain a relatively high level of material comfort, while hegemonic social control extends to all or nearly all levels of society.
The concept of alienation seems to become questionable when the individuals identify themselves with the existence which is imposed upon them and have in it their own development and satisfaction. This identification is not illusion but reality. However, the reality constitutes a more progressive stage of alienation. The latter has become entirely objective; the subject which is alienated is swallowed up by its alienated existence. There is only one dimension, and it is everywhere and in all forms. The achievements of progress defy ideological indictment as well as justification; before their tribunal, the ‘false consciousness’ of their rationality becomes the true consciousness. (p. 11)

In Marcuse’s analysis, the technological and material progress, the increasing ability of workers to enjoy the material benefits of this progress, and the messages of the culture industry that coerce participation and identification with the system have conjoined to overwhelm critique of domination and have served to integrate large segments of society as willing participants in the capitalist project. Control of the messages of the culture industry by powerful elites has further intensified since Marcuse’s time with the concentration of media ownership through industry deregulation (McChesney, 1999). The system and its participants adopt identical goals, attitudes, and logic that manifest a self-reinforcing and self-perpetuating way of life. Resistance has thereby been rendered futile, and it is perceived as contradictory to the well-being of the individual.

For critical theory, Marcuse sees a perpetually negative role: “The critical theory of society possesses no concepts which could bridge the gap between the present and its future; holding no promise and showing no success, it remains negative” (Marcuse, 1964, p. 257). Still, Marcuse sees some chance that critical theorists and the most exploited within the capitalist system may serve as agents of social change. With regard to critical theory itself, he states that it “wants to remain loyal to those who, without hope, have given their life to the Great Refusal”
1964, p. 257).\textsuperscript{11} For Marcuse, critical theorists have a role to play in change in that they keep alive a deep critique of domination, one that leaves them virtually without hope.\textsuperscript{12}

Of the most exploited within the capitalist system, those for whom repressive desublimation itself is out of reach materially, Marcuse writes: “Their force is behind every political demonstration for the victims of law and order. The fact that they start refusing to play the game may be the fact which marks the beginning of the end of a period” (1964, p. 257).

Of the potential of the exploited masses to employ critical theory in realizing the radical overthrow of the capitalist order Marcuse states, “The chance is that, in this period, the historical extremes may meet again: the most advanced consciousness of humanity, and its most exploited force. It is nothing but a chance” (1964, p. 257). Now, more than 40 years after Marcuse wrote \textit{One-dimensional Man} (1964), the dispossessed within the globalized capitalist system grow in number and proportion on a daily basis, even within highly industrialized societies. The logic of labor control through capitalization and resultant job loss combine with the concentration of wealth and the cannibalizing dynamic of the system which pays its workers/consumers ever lower wages while requiring them to consume more. As the United States, the nation epitomizing repressive desublimation, sits with the rest of the world on the brink of a second Great Depression, there exists a unique opportunity in the history of the industrialized world to bring together the historical extremes of which Marcuse spoke, but doing so to the effect of successfully challenging the capitalist order would require that people both comprehend and act upon a far-reaching critique of the domination and destruction embodied in the capitalist order.

\textsuperscript{11} When Marcuse wrote \textit{One-dimensional Man} (1964), there appeared to be no clear end in sight to technological progress and concomitant increases in the material well-being of industrial society. Therefore, he argues for a “great refusal” to participate in a wholly unfree society characterized by repressive desublimation.

\textsuperscript{12} Marcuse closes \textit{One-Dimensional Man} (1964) with these words: “At the beginning of the fascist era, Walter Benjamin wrote: It is only for the sake of those without hope that hope is given to us” (p. 257).
Such a conjoining of thought and effort based on a critical assessment of society could encourage a humane outcome to the collapse of global growth capitalism, but it is perhaps far more likely that collapse will come with few prepared to make sense of it and that, even for those who are thusly prepared, actions in crisis may not follow reason. The concepts of autonomy and individual rights are central to Marcuse’s argument, but the solutions to the social crisis of a one-dimensional society must be collective, and we have little time to cultivate both understanding of the system and collective action appropriate to realizing a freer and more just society. Still, as the sustainability crisis unfolds, what can be done to address human and ecological nightmares but to argue for and work to create a break from past patterns that created the crisis?

The critique of domination through culture does not end with the recognition that capitalist forms of domination extend into the realm of culture. It is important also to recognize that capitalist forms of domination share a lineage with racism and sexism that arose within complex societies even prior to the advent of industrialism. Like all manifestations of social domination, racism and sexism derive from a mindset that fragments socio-ecological wholes and ranks them, rendering the worldview of those who perpetuate these systems of domination far too narrow, exclusionary, and conflictive/aggressive to serve as a useful foundation for (re)creating sustainable societies.

In “The Rape of the Well-maidens: Feminist Psychology and the Environmental Crisis,” Gomes and Kanner (1995) analyze gendered aspects of oppression that inform unsustainability. According to these authors, understanding the acculturation of male children within Western society is important to understanding the socio-ecological crises of our time. They argue that Western society’s high valuation of radical autonomy and the association of that autonomy with males are highly destructive to developing healthy interpersonal and human/nature relationships.
According to Gomes and Kanner (1995), to be male – or to secure a position of power within society (whether one is male or female) – is to separate from and appear not to depend upon others and nature (p. 113). They conclude that “radical autonomy is a cultural ideal that does not allow for other forms of growth, especially those based on relationship and connection” (p. 113), and “domination becomes a way to deny dependence” (p. 115) which is seen as a weak, feminine quality.

Within the modern capitalist order, this form of male-identified domination is directed at both human others and nature, and it thereby severs the dominant from their potential to develop holistic, sustainability-oriented relationships with people and nature. According to Gomes and Kanner (1995),

By acknowledging our dependence, we allow gratitude and reciprocity to come forth freely and spontaneously. This is especially true when power in a relationship is fairly equal…. When we deny our dependence on another person, we threaten not only to engulf them but to feed on their strength and vitality, often until we have used them up…. A striking parallel is seen in the physical destruction of ecosystems…. (p. 115)

Gomes and Kanner demonstrate that perpetuating systems of gender inequity is inherently self-destructive and unsustainable. Within such systems, women are socialized to be nurturing caregivers while men are socialized to seek radical autonomy, and both men and women often seek social power through cultivating the appearance of radical autonomy from others and nature. Since radical autonomy is not actually attainable, those who seek to assert their complete independence may be driven to “dominate the world so thoroughly that the autonomy of all else is wiped out” (Gomez & Kanner, 1995, p. 114).

Gomes and Kanner (1995) contribute an important aspect to a critique of domination that can serve as a foundation for developing the CST of sustainability. They emphasize that gender-based discrimination and domination contribute in important ways to the unsustainability of
modern social systems, and they point to the reduction and eventual elimination of these forms of discrimination and domination as important aspects of developing sustainable socio-ecological systems.

Robert Bullard’s “Confronting Environmental Racism” (2008) offers a critique of domination based on race. Bullard offers an excellent overview and supporting evidence for racism as an important factor influencing the siting of dirty industries and environmentally damaging activities of all kinds. It is especially important that Bullard demonstrates that racism operates as a clearly distinguishable factor apart from class status.

Racism infused colonialism (Pagden, 1982/1988), and Bullard draws important connections between 1) colonialism as an act of conquering territory and turning people and places of these conquered territories toward activities that generate wealth that is extracted and brought to the centers of power and 2) continuing "internal" colonialism within countries. The concept and practices of colonialism, internal colonialism, and globalization, with their racist foundations, form the foundation for the environmental justice movement. This movement has as one of its goals the end of the discriminatory placement of hazardous production and waste facilities near communities whose ethnic and economic history and status disadvantage them in terms of social power (First National People of Color Summit, 1991/2008).

The critique of domination on the basis of historically constituted notions of race is important to developing a CST of sustainability that can inform social action for similar reasons that a critique of gender discrimination is important to developing such a theory. Sustainability

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13 In his book *This Sovereign Land: A New Vision for Governing the West*, Daniel Kemmis (2001) makes a similar argument about the West within the U.S. serving as an internal colony for the entire nation. Bullard's argument also closely relates to Alan Miller's article "Economics and the Environment" (1999). Miller's discussion of world-system theory highlights how colonialism has never really ended; it has only been transformed into economic colonialism that continues to manifest in the dependency of economically peripheral nations on the centers of power.
means an end to destructive domination and engulfment of the other: be the other women, racialized groups, or nature.

The critique of domination also extends to language itself so that, in order to create sustainable societies, we will need to live into being a language of sustainability. According to Horkheimer, “The spoken word cannot deny its collective coinage, for language is a true reflection of social structure” (as quoted in Tar, 1977, p. 92). It follows that, in a culture of domination and oppression, we would speak the language of subjugation. In her article “Keepers of the Earth” (1995), Jeannette Armstrong, a member of the Okanagan tribe of British Columbia, discusses linguistic foundations of human domination of nature. Throughout her article, she discusses differences between Okanagan and English in the way that each represents relationship. According to Armstrong, the very structure of English as a language creates a mental understanding of humans as separate from environment, whereas in Okanagan, human and earth share the same root syllable. Humans themselves are conceived of as the “land dreaming capacity” (p. 321); they are the earth. Specifically, Okanagans embody their homeland – and all that shares that homeland with the tribe. They are made of and directly related to that which the land has provided to them (p. 323).

Armstrong (1995) shows how the subject/object construction of English and other Western European languages (which nearly always represent humans as the subjects acting upon objects) helps create a mental construct oriented toward domination rather than reciprocity. As Armstrong shows, there are alternate ways of being in the world, though globally dominant cultures face serious linguistic challenges to conceptualizing them.

The critique of domination outlined here lies at the heart of the CST of sustainability. This critique builds upon the foundations of Marx’s critique of the alienation of labor and
Polanyi’s critique of modern industrial society’s subservience to the free market economy. It incorporates the insights of Adorno, Horkheimer, and Marcuse regarding the extension of capitalist domination into the realm of culture, and it highlights the important role of otherization based on gender, race, and ethnicity as contributing factors in the sustainability crisis. We now turn to a discussion of how (re)inventing human to human and human to nature reciprocity can form a foundation for sustainability praxis.

**Reciprocity as an Organizing Principle for Sustainability**

The critique of domination provides us with highly useful insights about how and why the structures and functions of global society are leading us to the brink of socio-ecological disaster, but it does not provide a roadmap leading us back from the brink. According to sociologist Robert J. Antonio (1981), “Critical theory has emphasized primarily the negative moment of the dialectic. It has attacked domination, rather than describing explicit, determinate possibilities for new social formations.” (p. 341). The critiques developed by critical theorists effectively point to the sources of the human/nature destruction we are witnessing and open the beginnings of paths toward sustainability-oriented social change, but the question remains for us to answer as we face the sustainability crisis: how exactly can collective human life and action be reconciled with natural limits and the health of the natural while also generating meaningful and satisfying lifeways?

The character and processes of the collective life of humans lie at the center of questions of sustainable living. Ideas and examples that can usefully inform the character and processes of sustainable community life will focus the discussion of chapters four and five of this dissertation. For now, suffice it to say that two problems of unsustainable, global capitalist society must be addressed: the vast scale of capitalist society and the near complete lack of forms of human to
human and human/nature reciprocity that can serve as the basis for building meaningful relationships. As a number of authors note, individuals bending their desires and actions to serve community need not result in demeaning relationships in which the individual is dominated and repressed (Armstrong, 1995; Berkes, 1999; Martinez, 1997; Polanyi, 1944/1957). In fact, individuals can grow intellectually and spiritually and develop meaningful relationships with people and places through engaging in community building work (Loeb, 1999). The vast scale of global society interferes with building or even recognizing reciprocal relationships, and the capitalist system integrates the individual into its logic through manipulation and instrumental relationships in which the person serves as a means to an end rather than a center of experience and value in his/her own right.

Even in the face of the momentum of the capitalist system, however, we need not assume that collective life must consist of domination and oppression or that meaningful, reciprocal relationships are somehow unnatural in human society. As Polanyi aptly demonstrates in his classic work *The Great Transformation* (1944/1957), self-regulating communities, founded upon principles of reciprocity have been the norm for all but the most recent human history. It is in the process of creating free markets that communities and the lives of individuals have been made secondary and subservient to a self-regulating free market. Polanyi states:

The outstanding discovery of recent historical and anthropological research is that man’s economy, as a rule, is submerged in his social relationships. He does not act so as to safeguard his individual interest in the possession of material goods; he acts so as to safeguard his social standing, his social claims, his social assets. He values material goods only in so far as they serve this end. Neither the process of production nor that of distribution is linked to specific economic interests attached to the possession of goods; but every single step in that process is geared to a number of social interests which eventually ensure that the required step be taken. These interests will be very different in a small hunting or fishing community from those in a vast despotist society, but in either case the economic system will be run on noneconomic motives. (p. 46)
According to Polanyi, although despotism occurred in societies prior to the advent of the capitalist system, all forms of noncapitalist economy had served the priorities and relationships of societies, not the reverse. That free markets shape modern societies to the extent they do today is a radical historical departure, and this development is a major motive force behind the forms of domination and oppression analyzed by critical theorists. Polanyi continues:

The explanation, in terms of survival, is simple. Take the case of a tribal society. The individual’s economic interest is rarely paramount, for the community keeps all its members from starving unless it is itself borne down by catastrophe, in which case interests are again threatened collectively, not individually. The maintenance of social ties, on the other hand, is crucial. First, because by disregarding the accepted code of honor, or generosity, the individual cuts himself off from the community and becomes an outcast; second, because, in the long run, all social obligations are reciprocal, and their fulfillment serves also the individual’s give-and-take interests best. Such a situation must exert a continuous pressure on the individual to eliminate economic self-interest from his consciousness to the point of making him unable, in many cases …, even to comprehend the implications of his own actions in terms of such an interest…. The premium set on generosity is so great when measured in terms of social prestige as to make any other behavior than that of utter self-forgetfulness simply not pay. (1944/1957, p. 46)

Derek Jensen (2000), drawing on the work of anthropologist Ruth Benedict, makes similar points to those made by Polanyi. He explains how many indigenous societies “eliminate the polarity between selfishness and altruism by making the two identical” (p. 212). According to Jensen, in a society which operates on principles of mutualism and reciprocity, to behave selfishly would be considered insane (p. 212). Indigenous authors and authors who have studied indigenous societies emphasize, as Polanyi and Jensen do here, the importance of social relationship and reciprocity. By contrast to modern industrial societies, many traditional indigenous societies are not inherently oppressive but are, instead, governed by mutuality and reciprocal relationship within the community and between the individual or community and nature (Armstrong, 1995; Berkes, 1999; Cajete, 2001; Kropotkin, 1902/1989; Martinez, 1997; Nelson, 1983; Polanyi, 1944/1957, chap. 4; Salmon, 2000; Sveiby, & Skuthorpe, 2006).
Aggressive and conquering, armed with advanced technology in the form of weapons and aided in conquest by disease (Diamond, 1999; Mann, 2002), Western society has overwhelmed nearly all that remains of precapitalist indigenous societies. But, the sustainability crisis will mean an end to global growth capitalism due to natural limits (Astyk, 2008; Campbell & Strouts, 2007; Guggenhein, 2006; Heinberg, 2005; Homer-Dixon, 2006; Intergovernmental Panel on Climate Change [IPCC], 2007; Li, 2008; Meadows, Randers, & Meadows, 2004; Simmons, 2005), and if we are to live well beyond the crisis, or perhaps even survive, we will need to (re)learn life in reciprocating society.

Examples of indigenous lifeways can help us conceptualize the principles and processes at work in a functioning, reciprocating society. Jeannette Armstrong (1995), comments on her life lived in two worlds: the Western world dominated by oppressive industrial capitalism and the lifeworld of her traditional indigenous culture. She describes her experience of Okanagan socio-cultural and environmental destruction within the dominant society: “I have always felt that my Okanagan view is perhaps closer in experience to that of an eyewitness and refugee surrounded by holocaust” (p. 317). In reading her essay “Keepers of the Earth” (1995), we learn that the Okanagan people see themselves as one with their land, as incarnations of the land itself (p. 324). The land gives the Okanagan people their language – their entire system of meaning making (p. 323). As noted above, in Okanagan, people are earth, and they have a duty to take care of the earth that is the source of all life (p. 324). We also learn that, Okanagans conceive of the individual as a melding of four selves: the physical self, the emotional self, the thinking/intellectual self, and the spiritual self. According to Armstrong, all four selves are important and must exist in balance with each other as complementary parts of a whole person (pp. 320-322). This view differs from modern Western thinking in which the rational intellect is
more highly valued and trusted than other parts of the person. In Okanagan culture, a leader is not characterized above all else by his/her intellect. Instead, leadership ability is judged by a person’s emotional ability to connect with others (p. 321) – not by her/his ability to forcefully or coercively bend others to her/his will, nor by his/her ability to systematically extract surplus value from others and nature within rationalized systems of production.

Like Armstrong, Dennis Martinez (1997), a Native American of O’odam and Crow tribal heritage, emphasizes how indigenous peoples have lived in reciprocating relationship with the land. According to Martinez, many indigenous societies have not only avoided inflicting long term damage to ecosystems, they have developed a culture of care for the earth that has made their presence on the land an ecological benefit. Martinez (1997) explains how Indian burning and indigenous harvest of plants and animals benefited the long term health of native homelands. He also explains how, when the U.S. Forest Service sought to protect the land and species harvested by natives by prohibiting their use of land, plants, and animals, the ecosystems declined due to the absence of native participation in ecological processes (pp. 116-118). Charles Mann, makes similar points in his article “1491” (2002) in which he discusses evidence that the Americas were highly populated prior to the arrival of Western colonial conquerors. According to Mann, the human imprint on the land was everywhere, and human presence was in many cases nondestructive, even beneficial. He claims that modern societies, in order to live sustainably, will need to “find it within themselves to create the world’s largest garden” (p. 53).

Referring to preindustrial, precapitalist human history, Martinez states: There had to have been a way for people to have lived sustainably, because these populations, smaller than we have at present, were here for a very long time. People could have exhausted a resource in any given generation very easily, had they not had a fundamental restraint and a fundamental notion of reciprocity – what to give back to that system. (1997, p. 110)
Martinez makes it clear that he is not subscribing to the myth of the noble savage (p. 110), a myth that conceptualizes natives as half-human creatures, not even intellectually capable of doing harm. For indigenous societies past and present, learning to live sustainably on the land and developing cultures centered around doing so was and is a very practical matter for sustaining all aspects of the human being. Living sustainably in the long term has not meant no mistakes made by individuals and cultures – take Easter Island for example – and it has not meant that native cultures are and were entirely devoid of conflict or violence. It has meant that many indigenous societies, unlike the Easter Islanders, developed cultures that allowed them to carry on for long periods of time in the specific places, the specific ecological environments in which their cultures served to articulate sustainable connections between people and place. Such societies are described by Enrique Salmon (2000) as “kincentric.”

The critical theory of sustainability articulated here does not subscribe to the notion that the sole aim of environmental activism should be to maintain pristine landscapes, untouched by human presence. Instead, it seeks above all to develop ideas and practices that restore health to the interaction between humans and environment. What restoration means with regard to particular places and human uses of environments must be decided on a case by case basis, and the decisions themselves must remain contingent over time as changes occur on the land and in human societies. The CST of sustainability recognizes that, in the words of Martinez (1997), “There are very few places on this globe that one could adequately describe as pristine” and that “the anthropogenic landscape” has existed for a very long time (p. 109). The CST of sustainability subscribes to the view articulated by Martinez that “biological diversity and cultural diversity are linked. You cannot have one without the other” (p. 109).
Given precapitalist human history as articulated by Polanyi (1944/1957), Mann (2002), and others, and given that indigenous societies offer us examples of living in healthy relationship with nature (Armstrong, 1995; Berkes, 1999; Cajete, 2001; Martinez, 1997, Nelson, 1983; Salmon, 2000; Sveiby & Skuthorpe, 2006), the restoration of systems of reciprocity and mutuality within contemporary lifeways should serve as a central focus for a critical social theory of sustainability. In the words of Dennis Martinez, “Do you think you can go on and on, decade after decade, taking and taking and taking and not expect something bad to happen? It’s impossible. It’s a complete violation of Natural Law” (1997, p. 119).

*Gramsci’s Concepts of Cultural Hegemony and Passive Revolution as Bases for Analysis and Action*

Like the critique of domination and the notion of reciprocity, the concept of cultural hegemony deeply informs the critical social theory of sustainability. The concept of hegemony discussed here is articulated by twentieth century Marxist political theorist Antonio Gramsci (1971/1999, pp. 57-58). Gramsci’s conceptualization of bourgeois cultural hegemony helps us to identify cultural barriers to acting in opposition to entrenched systems of social power that negatively impact the environment and quality of life for many. Gramscian Marxism is concerned with why revolutionary movements have failed in Western countries (Salamini, 1974, p. 363) and why fascism arose in Europe, concerns Gramsci shared with the critical social theorists of the Frankfurt School. Both the German theorists and the Italian theorist were intellectually active during the rise of European fascism.

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14 This section deals with modern hegemony as an expression of bourgeois social control. It is important to recognize that Gramsci advocates a form of hegemony of the masses within which the contradictions of society would be eliminated and the necessity for Marxist praxis would cease to exist (Salamini, 1974, p. 372).

15 Capitalist cultural hegemony, therefore, inhibits the (re)creation of subsistence cultures rooted in notions and practices of reciprocity.

16 While imprisoned by Mussolini’s fascist regime, Gramsci wrote perhaps his most famous work, *The Prison Notebooks* (1926-1934/1996).
According to Gramsci (1971/1999), “Hegemony designates a system of social control, and specifically the control of the subaltern classes and groups, without the preponderant use of force/coercion.” It is a system characterized by domination whereby the oppressed assume the values and worldview of their oppressors and, thereby, engage in their own oppression (pp. 57-58; see also Persaud, 2001, p. 37). Hegemony has cultural and political components. Political hegemony, the control of decisions of society, may occur through force, as in political dictatorship, or it may result from deep social penetration of cultural hegemony. Gramscian analysis focuses on the latter form of hegemony, in particular how hegemony serves as a platform for bourgeois capitalist domination in modern societies. According to Leonardo Salamini (1974), “Gramsci conceives of hegemony as an ideological phenomenon first, and only secondly as political fact” (p. 368). Accordingly, we can speak of the colonized minds of people who live in and believe they choose to participate in capitalist, consumerist societies. Ideological hegemony is the social “leadership” Gramsci sees as a precondition to achieving political leadership in modern capitalist societies and a continuing condition to maintaining it:

A social group can, and indeed must, already exercise ‘leadership’ before winning governmental power (this is indeed one of the principal conditions for the winning of such power); it subsequently becomes dominant when it exercises power, but even if it holds it firmly in its grasp, it must continue to ‘lead’ as well. (Gramsci, 1971/1999, pp. 57-58)

Gramscian cultural hegemony functions as an internalized colonization in which subaltern classes actively participate in their own oppression in cultural, economic, and political life. Freire (1970/2000) eloquently describes this system in action:

At a certain point in their existential experience the oppressed feel an irresistible attraction towards the oppressors and their way of life. Sharing this way of life becomes an overpowering aspiration. In their alienation, the oppressed want at any cost to resemble the oppressors, to imitate them, to follow them. This phenomenon is especially prevalent in the middle-class oppressed, who yearn to be equal to the ‘eminent’ men and women of the upper class. (p. 62)
In a Western world replete with racism, sexism, and classism, conceptual divisions wherein the myth of meritocracy is largely assumed truth, many of those oppressed by dominant groups internalize belief in their own inferiority along with belief in the corresponding superiority of dominant individuals and groups. Modern capitalist society is a hegemonic society, and cultural hegemony is a powerful elixir that unites people – even those whose interests are not well served – in reinforcing the trajectory of history led by dominant groups and institutions.

Gramsci’s concept of passive revolution (1971/1999, pp. 105-120) is also important to understanding how cultural hegemony is perpetuated and violent revolution averted by hegemonic blocs. Passive revolution becomes necessary when subaltern groups recognize that their interests differ from those of dominant groups and when this recognition and the social turmoil it engenders threaten to rupture the hegemonic order. In order to maintain hegemonic control, political leaders may undertake passive revolution in which they act in opposition to their own short-term interests by engaging in alliances and pursuing top-down reforms that mitigate the sources of dissatisfaction among the subaltern classes. Passive revolution, by avoiding a rupture in the overarching socio-economic and political order, serves the long-term interests of the powerful. It also deepens cultural hegemony by creating the illusion that dominant and subaltern groups share important common interests.

The Gramscian concept of cultural hegemony is highly compatible with critical theory whose proponents contend that aspects of culture serve to entrench the powerful in their positions of advantage and to create momentum and inertia within socio-economic systems in ways that simultaneously reproduce and extend the capitalist sphere while also undercutting impetus toward socialist revolution. As already noted, Marcuse’s *One-Dimensional Man* (1964) is a prime example of CST in this vein. In *One-Dimensional Man*, Marcuse develops a far-
reaching and sophisticated analysis of repressive desublimation as a form of hegemony he observes in American society. Although Marcuse never cites Gramsci in this work, his arguments build a strong bridge for uniting CST with Gramscian analysis of hegemony. In *One-Dimensional Man*, Marcuse compellingly and clearly analyzes the interests and mechanisms that create, perpetuate, and deepen social, economic, and political hegemony. Marcuse’s work articulates directly with that of Gramsci regarding cultural hegemony and passive revolution as social phenomena central to defusing the potential for revolution in capitalist societies.

However, it is important to recognize that, as a precondition to widespread repressive desublimation, a fairly high level of material comfort must be enjoyed by many people (Marcuse, 1964). Cultural hegemony, on the other hand, can pervade all social classes. Therefore, Gramsci’s concept of cultural hegemony is even more effective than Marcuse’s notion of repressive desublimation to developing a CST of sustainability that is applicable to socio-economic contexts of extreme poverty and to societies existing on the periphery of the integrated system of global capitalism.

The hegemony that grew within colonized populations continues today and supports global capitalism as a world-system. Citizens of poor and indebted “developing” nations are led to believe that they will one day enjoy the economic security emblematic of their former conquerors, and many internalize this myth. Idealized images of Westerners and Western lifestyles portrayed in media such as Hollywood films (Henzell & Rhone 2002), magazines, and advertisements continue the seduction of the oppressed worldwide into the hegemonic system. Helena Norberg-Hodge describes hegemony in action in Ladakh in the film *Ancient Futures* (ISEC, 1993) wherein she documents the social dislocation and environmental damage that occur when Western culture and global capitalism descend upon a subsistence culture. She attributes
the Ladakhi people’s willingness to participate in these changes that damage the local environment and disrupt social systems of belief and reciprocity to a “psychological pressure to modernize.” According to Norberg-Hodge, much of this pressure stems from Western media and advertising as well as contact with Western tourists. Hegemonic belief systems operate to further entrench the powerful within the world-system as well as within individual nations.

Cultural hegemony parallels the critiques of CST. In questioning hegemonic cultural reinforcement and perpetuation of oppressive capitalist society, CST admits that we have been lied to – and that we lie to ourselves and others about deeply important things. CST argues that many of our hopes and beliefs about our culture, our politics, and the workings of the world are in fact built upon lies. And some of the lies give rise to alluring and comforting fables in the form of official stories of our institutions and societies: that we and our modern culture are on a linear and upward path to ever growing and improved knowledge and material wellbeing (and the corollary belief that all pre-modern and non-modern societies were/are lesser, backward, ignorant), that we as free people collectively chose our current reality because it was the best choice possible, that we moderns are freer than any other people has ever been, that we live in a meritocracy rather than a class based society, that everyone in the world wants to (and should want to) be just like us (and the corollary that those who are not like us are somehow inherently defective) (Bennet, 2007; Clark, 2005; Jarecki, 2006; Spretnak, 1997). Social systems that effectively perpetuate hegemony successfully create illusions of freedom and choice along with ideological myths that become so deeply interwoven within the social fabric of a nation, a people, a culture that to unravel the rotten threads would threaten the very integrity of the social fabric. Successfully hegemonic systems also imperceptibly require people to weave the threads of lies into their own identities so that a threat to hegemony is perceived by individuals as a
threat to personal integrity. Therefore, if taken seriously, a CST-based critique calls for a rather painful assessment of what lurks behind the façade of our culture as well as an assessment of the shadow parts of ourselves that articulate with oppression.

Cultural hegemony is also present in critiques about the utility of CST as a lens for analysis and praxis toward sustainability. It is quite natural that, for members of dominant cultures, the kind of deeply probing analysis generated by a CST-based inquiry informed by notions of Gramscian cultural hegemony would lead to deeply disquieting emotions: a sense of betrayal, guilt, sadness, rage (Bennet, 2007; Clark, 2005; Jarecki, 2006; Jensen, 2004). Such emotional awakenings can prompt us to ask: isn’t CST too depressing, incapable of inspiring and motivating for change, and just too uncomfortable to be worth it? Even those who are comfortable with many forms of deep cultural critique represented by such schools of thought as deep ecology and ecopsychology may experience a particular distaste in thinking that we are pawns and tools of powerful interests. It is natural in a hegemonic culture to sense that there must be something wrong with ideas that question the very foundations of society. Such critique, after all, is – and explicitly aims to be – destabilizing in that its ultimate goal is the remaking of society itself.

Because they shed light on important processes of domination and exploitation active within unsustainable hegemonic societies, Gramscian conceptions of hegemony and passive revolution offer important insights that create points of departure for critical pedagogy based on the CST of sustainability. Recognizing that these processes are entrenched in our societies clarifies that engaging in counter-hegemonic critical pedagogy is a very challenging prospect. Still, given that the sustainability crises will increasingly compel us to critically examine our social forms and practices in an effort to identify the impetus behind these crises and to develop
sustainable collective life, opportunities may increase for counter-hegemonic thinking and education to play increasingly prominent roles in creating a sustainable future.

**Epistemology and Ontology of the Praxis of Sustainability**

To this point, I have articulated a critique of unsustainable, industrial, capitalist societies. This critique is informed by CST, the Gramscian concepts of hegemony and passive revolution, and indigenous worldviews and systems of reciprocity. Even if we find this critique accurate and convincing, without a concomitant theory of praxis that locates both critique and agency within the process of history, we are left with an idealist foundation for action. According to the idealist formulation, if more people know that our flawed society has placed us on the brink of catastrophe and why, then society will change. If we assert, as I suggest here, that both the materialist and idealist conceptions of consciousness and being are operative in any one person or context – that consciousness determines being while being also determines consciousness – we have begun to articulate a foundation for sustainability action. We can hope that enough minds are open to sustainability-oriented critiques of society and that sustainability-oriented changes in society themselves will influence people’s consciousness. This is an essentially Gramscian conception of agency (Gramsci, 1971/1999, pp. 333-334).

In this section, I probe a central tenet of CST: that social formations are historical by nature and, therefore, open to change through human agency – that nothing in human history is destiny or absolute since all history is contingent upon past and future action. It is important to remember that CST not only calls for us to identify the sources and processes of domination and hegemony; it calls upon us to *liberate ourselves* from oppression. I see in CST, and in the CST of sustainability under development here, an ultimate conviction that people have the capacity to transform the world. Otherwise, why theorize about the need for transformation? And as
educators, why would we teach sustainability? The purpose of this section is to articulate a strong foundation for the central role of praxis in sustainability-oriented education and social change.

Gramsci articulates social critique and a philosophy of praxis that derive from historicist foundations. His notion of praxis serves exceptionally well as a springboard for the philosophy of sustainability praxis, an essential component of the CST of sustainability. Gramsci’s Marxism is highly original in that he focuses attention on the role of critical consciousness building as an important and necessary subjective aspect of revolutionary change. Salamini summarizes Gramsci’s view on the role of subjective consciousness in realizing radical social change:

The domination of a class over another is always the domination of a given [worldview] over another; consequently any revolutionary movement, if it is to be successful, has to be preceded by a profound intellectual and cultural reform of human consciousness. (Salamini, 1974, p. 378)

In this aspect, Gramsci’s work strongly parallels the pedagogy of Paulo Freire (1970/2000).

According to Salamini (1974), Gramsci’s philosophy of praxis arises from the premise of hegemony as a cultural and ideological fact (p. 370). Since the ideological hegemony of the bourgeois effectively assimilates the masses into supporting the interests of the minority ruling classes, Gramsci sees “ideological revolution as a precondition for political revolution” (Salamini, 1974, p. 368). According to Gramsci, in order to engage effectively in revolutionary change, people must develop a critical self and social consciousness that allows them to step outside hegemonic culture and recognize how they have been manipulated into supporting a capitalist society that does not serve their best interests. Salamini (1974) summarizes Gramscian theory regarding the role of critical consciousness in informing radical social change:

In historical situations where the power resides formally in the hands of ruling classes, the working classes, politically organized and conscious of their role, can and must exercise an ideological hegemony by subtracting themselves from the bourgeois ideology
and progressively attracting into their orbit all other subaltern classes. Ideological
hegemony (defined as ‘intellectual and moral direction’) is a preliminary condition for
the actual seizure of state power and the creation of a new state. The proletariat, Gramsci
contends, can and must become a dominant class before becoming a ruling class. (p. 368)

The Gramscian formulation of the role of consciousness in building a hegemony of the masses
that has the power to move society toward liberation from social contradictions closely parallels
Marcuse’s call for people to engage in “the great refusal” to collude with the capitalist project
(1964, pp. 255-257). This formulation also strongly parallels the Freirean (1970/2000)
conception concientization as a process through which individuals become capable of “naming
the world” (p. 88) – of clearly comprehending their own situation and interests – rather than
allowing hegemonic bourgeois interests to name the world for them.

Gramsci (1971/1999) sees the development and recognition of the concept of hegemony
itself as a major step in reasserting the roles of human consciousness and agency in Marxist
praxis:

Critical understanding of self takes place therefore through a struggle of political
‘hegemonies’ and of opposing directions, first in the ethical field and then in that of
politics proper, in order to arrive at the working out at a higher level of one’s own
conception of reality. Consciousness of being part of a particular hegemonic force (that is
to say, political consciousness) is the first stage towards a further progressive self-
consciousness in which theory and practice will finally be one. Thus the unity of theory
and practice is not just a matter of mechanical fact, but a part of the historical process,
whose elementary and primitive phase is to be found in the sense of being ‘different’ and
‘apart’, in an instinctive feeling of independence, and which progresses to the level of
real possession of a single and coherent conception of the world. This is why it must be
stressed that the political development of the concept of hegemony represents a great
philosophical advance as well as a politico-practical one. For it necessarily supposes an
intellectual unity and an ethic in conformity with a conception of reality that has gone
beyond common sense and has become, if only within narrow limits, a critical
conception. (pp. 333-334)

The concept of hegemony places Marxist thought and action within the realm of human
strategies for social change. This conceptual framework informs Gramsci’s reassertion of
Marxist humanism through which he reclaims Marxist thought from the hands of scientific
Marxism with its theories of “necessary, constant, or immutable economic laws” (Salamini, 1974, p. 372). In Gramsci’s thinking, “Any law of automatism admitted in the analysis of sociohistorical phenomena tends to stifle human will and human creativity and tends to mystify and alienate human consciousness” (Salamini, 1974, p. 372). Adherence to belief in automatism creates in individuals a dangerously passive response to modern capitalism, one that can serve to reinforce the hegemony of bourgeois society (Salamini, 1974, p. 363).

Though he emphasized the role of consciousness in realizing social change, Gramsci saw idealism as incapable of uniting theory and practice (Salamini, 1974, p. 364). His philosophy of praxis is absolutely historicist. Salamini (1974) elucidates the humanist and historicist foundations of Gramsci’s philosophy of praxis:

A basic historicist assumption is that any idea exists and develops in dialectical relationship with praxis. Praxis is history; it develops and transforms itself with history. Marxism as a philosophy then is history becoming conscious of itself, and since history is conscious human activity, man becomes the central focus of reality (humanism). In sum, in its very essence Marxism is ‘absolute historicism’ and ‘absolute humanism.’ Failure to lay the active and conscious human will at the base of a Marxist [worldview] inevitably leads, Gramsci warns, to solipsist theories (subjective idealism) for which the self is the only object of knowledge or mechanistic theories (positivism and scientific Marxism), which posit the existence of necessary laws and principles in the historical development. In this respect, Marxism is the process of historicization of human thought, which relocates ideas and ideologies in their specific and concrete historical framework, the process of relativization of existing social structures and social arrangements. (p. 371)

For Gramsci, ideas and theories are themselves historical and function historically in the ongoing creation of reality. He states:

This is the central nexus of the philosophy of praxis, the point at which it becomes actual and lives historically (that is socially and no longer just in the brains of individuals), when it ceases to be arbitrary and becomes necessary – rational – real. (Gramsci, 1971/1999, p. 369)

Still, according to Salamini (1974), Gramsci’s conception of ideas as historical does not “preclude the assessment of the truth and the validity of such ideas. Their validity is determined
… by their capacity to mobilize and guide the masses toward the attainment of ideological and political hegemony” (p. 372). The hegemony toward which society should aspire is one in which the contradictions of capitalist society that manifest in domination and exploitation are ultimately eliminated (Gramsci, 1971/1999, p. 405). Similarly, CST seeks to open up space and processes for people to "name the world" (Freire, 1970/2000. p. 88) – to tell their own truths from their own positions. These truths vary, but the process of identifying conceptions of hegemony and hegemonic powers through critique is not a completely relativistic exercise. It involves the searching for themes of oppression in our world that tend to be repeated and related in their sources, even though these themes interplay with individual and community variance to create a wide variety of specific incarnations.

Understanding the historical character and the goals of Gramsci’s notion of praxis allows us to draw clear connections between praxis and the social justice requirement for sustainability. When we contextualize praxis within the definition of sustainability articulated above, we also recognize that a society free of contradictions cannot be one that destroys humanity and nature. Such behavior would introduce contradictions into society through a form of domination that restricts the freedom of people and other creatures to realize their own ends. Therefore, Gramsci’s conception of the goal of praxis – as a process through which humans consciously develop a form of hegemony that eliminates contradictions from society – in fact embodies sustainability-oriented social change in its complete socio-ecological mileau. Such a praxis, must necessarily transcend fragmented, disciplinary inquiry and action and seek to develop an integrated worldview capable of articulating with history in all its dimensions. Such a transdisciplinary epistemology has been a central goal of critical theory from its inception (Held, 1980, p. 34).
The process of Marxist praxis as conceived by Gramsci is self-reflexive in that theory is manifested within and through history. Marxist theory is seen as infused with specific class interests that themselves contain societal contradictions which Marxism seeks to eliminate. Gramscian Marxism, therefore, foresees its own slow erosion through the process of praxis: “If … it is demonstrated that contradictions will disappear, it is also demonstrated implicitly that the philosophy of praxis too will disappear, or be superseded” (Gramsci, 1971/1999, p. 405).

Salamini (1974) elaborates:

> The task of resurrecting and rejuvenating Marxism requires a radical redefinition of Marxism itself. Marx has to be read in a new light and has to be considered as only a phase in the evolution and the elaboration of the ‘philosophy of praxis’…. Marxism as historicism signifies that it is, within history, a theory of history, itself a transitory phase in the history of the development of human thought. (pp.370-371)

Because, for Gramsci, there is no absolute theoretical validity, Gramscian Marxism does not prescribe for itself a universal validity beyond history: “Every theoretical system has validity within the limits of a specific historical context, therefore it is bound to be superseded and deprived of significance in the succeeding historical context” (Salamini, 1974, p. 371). The validity of praxis can be judged by its demonstrated and living ability to impact history so as to reduce and ultimately eliminate social contradictions. According to Salamini (1974), “The development of subaltern classes and their ascendant movement toward cultural, ideological, and political hegemony is the most fundamental criterion for the analysis of all historical, social, and cultural phenomena” (p. 387). In this way, Gramscian Marxism is highly compatible with the concept of sustainability articulated above in which sustainability is viewed as historically, culturally, and place specific. Sustainability is not a set of prescribed rules applicable to any and all situations. Instead, it is itself a process of praxis that seeks to eliminate socio-ecological manifestations of domination and oppression that circumscribe the freedom of nature and people
to realize their own ends. The effectiveness of any sustainability praxis can be judged according to its ability to satisfy these purposes.

The Gramscian conception of praxis provides an intellectual home for sustainability educators and activists living and working in a world of contradictions. Within a sustainability context, many of us are conscious of the harm we do to others and the world by simply living a “normal” industrial lifestyle, but most of us pursue only partial solutions, if any at all. But then, we are also living in a world where our choices are limited by the systems and structures within which we live, and we understandably take actions that make “common sense” within that world because we “must” do so if we wish to remain part of the world as we know it. Within this setting, our consciousness is very much shaped by our being within the world as we know it so that we may act in two contradictory ways: by adapting to the world as it is and by seeking to change the world. Even in this inconsistency, I see potential for a transformative agency. Many of us do comprehend that the world as we know it is indeed unsustainable, and many of us are taking action toward change, even as we embody contradictions of the unsustainable world within our praxis.

Through his philosophy of praxis, Gramsci creates a sociology of knowledge highly relevant to sustainability. “For Gramsci, objectivity represents an inter-subjective consensus among men; that is, objectivity is a historicized and humanized objectivity” (Salamini, 1974, p. 376). This intersubjective consensus is lived into being within specific contexts and can, therefore, actively reflect a multiplicity of worldviews based in history and place (Salamini, 1974, p. 369). This diversity, in turn, mirrors that of resilient ecosystems and societies. The CST of sustainability under development here has an explicit values framework rooted in the critique of domination and oppression. From this framework, intersubjectively determined, historically
and culturally specific guideposts for sustainability can be set and developed over time through praxis. In Gramscian terms and according to the CST of sustainability, valid knowledge is praxis: “The validity of sociological research resides not in its scientific function but rather in its ideological function, that is, in its capacity to organize the experiences of the masses” (Salamini, 1974, p. 377).

One form of Gramscian praxis is embodied by those who drain power from the system by refusing to participate in some or many aspects of society that perpetuate current social forms and power relationships. Marcuse laid the groundwork for forms of praxis that embody the recognition that simply opting out of administered society can fundamentally challenge the system (Dant, 2003, p. 62). In his advocacy of the “great refusal” at the end of One-Dimensional Man (1964, pp. 256-257), Marcuse offers no clear answer to domination and oppression, but he claims that refusal to play the game, refusal to fit one’s life to hegemonic realities, may signal the beginning of the end of the current paradigm. Chris Carlsson, author of Nowtopia (2008), demonstrates that many of those who opt out engage in unpaid work in the autonomous sphere of life that simultaneously decreases their reliance on capitalist production, distribution, and wages (chap. 1). According Carlsson, we need critical, reflexive, creative destruction of late capitalism and its culture in order to create a free and sustainable world. Gramsci (1971/1999) offers a conception of praxis that is particularly apt for these purposes.

Engaging in the great refusal, I believe, is often misinterpreted as nonaction because to refuse is seen as not constructive – constructive in the sense of actually building something. I would say that engaging in the great refusal is constructive. It means living a coherent life by refusing to collude with power in order to benefit personally at the expense of others and nature. Such action is a manifestation of the critical self and social consciousness Gramsci (1971/1999)
deemed so necessary to praxis (pp. 333-334). Living this refusal implies taking an unusual path in life by building a lifeworld that lives into being an alternative worldview: the great refusal leads to praxis. In living such a life, one is telling a powerful story to others who may be inspired to also engage in the great refusal. Those who refuse to fit themselves to the current paradigm build relationships among themselves and create ways of living that embody the refusal and that begin to advance a hegemony of the masses that may eventually resolve social contradictions based in domination and oppression. Native American resistance to Western cultural hegemony is also such (re)creation of alternate lifeways rooted in refusal to assimilate into the dominant paradigm (see for example Armstrong, 1995; Martinez, 1997; Nelson, 1983; Salmon, 2000). In Gramscian praxis, we see that alternatives to oppressive hegemony are in part present in the critique itself, which is the spark that ignites praxis (Gramsci, 1971/1999, pp. 333-334).

Homer-Dixon highlights the need for critically informed agency to address the sustainability crisis. He claims that, in a time of disintegration,

people will want reassurance. They will want an explanation of the disorder that has engulfed them – an explanation that makes their world seem, once more, coherent and predictable, if not safe. Ruthless leaders can satisfy these desires and build their political power by prying open existing cleavages between ethnic and religious groups, classes, races, nations, or cultures. First, they define what it means to be a good person and in so doing identify the members of the we group. Then they define and identify the bad people who are members of the they group. These are enemies such as immigrants, Jews, Muslims, Westerners, the rich, the poor, or the nonwhite, who are the perceived cause of all problems and who can serve as an easy focus of fear and anger. (Homer-Dixon, 2006, p. 279)

He continues by stating that extremists have an advantage over nonextremists in times of crisis. They tend to be better organized, have a more coherent philosophy, have clear goals, have a clear identity, be dedicated to their ideas, and even have a plan of action. Therefore, they can mobilize quickly (pp. 291-292).
Engaging and encouraging others to engage in consciously informed praxis now can decrease the possibilities for demagogues and fascists to seize power during the sustainability crisis. To serve these purposes effectively, praxis needs to be undertaken as pervasively as possible in a wide variety of settings. The need for praxis to remain situated within specific contexts in order to avoid becoming a failed enactment of ahistorical, idealist formulations of sustainability points to the need for small groups and localized communities to become the locus for praxis. Homer-Dixon advocates such activity, especially in the realm of developing community resilience in the basic necessities for life. He states,

> In our communities, towns, and cities, we can use small-scale experiments to see what kinds of technologies, organizations, and procedures work best under different breakdown scenarios…. By experimenting with new ideas about politics, economics, and values, we’ll be better advocates of a coherent vision of the future and a plausible way of getting there…. (2006, p. 292)

Sustainability praxis in the realm of consciousness building and creation of alternative lifeways can provide living examples and actual lifelines of resiliency in a time of crisis that can serve to catalyze further sustainability praxis. Chapters four and five of this dissertation will expand upon these ideas.

The struggle embodied in the CST of sustainability is rooted in agency and adheres to the Gramscian conception of praxis. It is always historical. The struggle manifests in history in ways that respond to the circumstances at hand; and, therefore, its particular form is always contingent. I believe at this point in time we are only now approaching a historical moment when large numbers of people might begin to engage in a great refusal of late capitalism, and this refusal might well be driven by both consciousness and the historical circumstances embodied in the sustainability crisis. The sustainability crisis will dictate that modern industrial society cannot continue in its current form. Failure could signal change. Given our personal histories and the
form and function of the world that we have inherited—characterized as it is by entrenched and self-perpetuating systems of domination and oppression that enforce dependency on the capitalist system—we may be ill prepared for the challenge of remaking societies that are just and sustainable. Still, our historical situation is changing rapidly, and we may soon find ourselves within a socio-ecological context that has more in common with traditional place-based cultures than with modern globalized societies in terms of the energy and tools we have to work with. The CST of sustainability serves as a vehicle for praxis within this new context, but it must have an explicitly ecological orientation to do so effectively.

**An Explicitly Ecological Framework for Critical Social Theory**

As sustainability-oriented theorists, educators, and activists come to see with increasing clarity that oppression of people and domination and destruction of nature are two sides of one coin representing the same exploitive values and practices, critical-theory-oriented analysis is being extended to include human relationship with the environment (Gruenewald, 2003; Kahn, 2010; Kovel, 2002; Leonardo, 2004; Merchant, 1999, 2008; O’Connor, 1991/2008). This more inclusive analysis of domination and oppression is not entirely new (Marcuse, 1972/1994), but the critical theory emphasis on socio-ecological critique is only recently gaining strength.

The modern Western consciousness abstracts humans from nature, denying the fact that humans cannot operate or exist outside of nature (Spretnak, 1997). This conceptual human/nature divide is not only a division into two, it is a tiered dualism: humans on top, nature acting in all supporting roles (as tool, as resource, as setting) (Shepard, 1995). The subjugated *other*, first conceptualized as nature itself, is born with this divide. And there have been many *others* as systems of hierarchy have proliferated to encompass gender, races, non-Western cultures, and more. Cultural systems of hierarchy in Western societies and the projection of a hierarchical
worldview upon nature itself surely are among the keystone concepts upholding the house of cards that is the unsustainable world of globalized industrialism.

The conceptualization of the human/nature complex as two separate constituents is both a false and destructive construct. Humans are inextricably embedded in ecosystems, though we may so extensively dominate those ecosystems within which we concentrate our time that we no longer clearly recognize our relationships to broader nature. We may stay indoors all day, but the oxygen we breathe still comes from the life activities of plants. We may eat in restaurants far removed from the farm, the oceans, and the rivers, but the food we eat still comes from biological processes dependent upon ecological relationships that we may manage but never fully control. Our intimate, bodily relationships with other living organisms and with ecosystems make us entirely dependent upon the natural world. And whether we recognize our impacts or not, if we live in unhealthy ways, the natural world is damaged. If the health and resilience of nature are destroyed, people ultimately suffer. Fritjof Capra describes a continuum of life and relationship in his book *The Hidden Connections* (2002). This work sheds light on the depth of the human connection to all life. As Capra shows, we share much of the story of our origin, many of our biological needs, and much of our very form and structure with all other life. We emerged through a dependence on earlier life forms, and our dependence on non-human life continues to this day (Capra, 2002, chap. 1).

How does the conception of humans as separate from the environment inform systems of power and exploitation? Instead of focusing attention on our dependence upon and our inclusion within ecological systems, we instead emphasize our ability to control and dominate nature and our ability to seemingly separate ourselves from the ecological forces that can threaten the survival of ourselves as individual creatures. Doing this, we set up a self-interested priority
system of belief and action where human “needs” – which are ever expanding under the global, capitalist system (Berry, 1987, p. 15; Douthwaite, 1999; Kovel, 2002, chap. 4) – take priority over nature. In so doing, we have devalued nature in relation to ourselves, and we are at risk of destroying that on which we depend (Kovel, 2002). Conceptual separation of humans from environment informs all other systems of thinking and action where domination and oppression of the other are seemingly justified.

Repairing this conceptual rift between humans and nature in Western society is at the heart of achieving ecological sustainability. Working to heal this division differs from preservationist directives which, recognizing the extent of negative human impacts on environments, typically aim to exclude humans from sensitive or exceptionally aesthetically appealing environments. The environmental justice movement, by contrast, seeks reconciliation between humans and the environment and creation of systems that promote the health of the human/nature complex (Di Chiro, 1996; First National People of Color Summit, 1991/2008). As noted above, this movement can therefore serve an important role in reintegrating humans with nature so as to (re)create healthy, sustainable communities. Ecopsychology and deep ecology represent additional areas of thought and work that attempt to bridge the conceptual gap between humans and nature in Western culture.\footnote{These movements will be discussed further below.}

I argue for an explicitly ecological framework for the CST of sustainability, one that conceptualizes humans and nature as an inseparable human/nature complex and one that addresses how the concept of human separability from nature informs Western cultural notions of domination of both nature and other people. I have argued that domination and oppression of people and nature stem from the same worldview and that, ultimately, domination and oppression of the natural world is domination and oppression of people who are part of the
natural world and wholly dependent upon nature. The capitalist exploiter sees everyone and everything as a means to an end – a view that negates the intimacy of reciprocity discussed above as foundational to sustainable lifeways.

As noted above in our discussion of reciprocity as a central focus for the CST of sustainability, the human/nature dichotomy – though it is clearly a foundation of modernity and of the domination of both nature and other people that are characteristic of modern capitalism – has not been and is not a feature of every culture. Ideas of human dominance are culturally specific. Many indigenous societies have successfully lived for long time spans in healthy interrelationship with place – with cultural systems of human/nature respect and reciprocity at the center of decision making and human action (Kropotkin, 1902/1989; Polanyi, 1944/1957, chap. 4). While examples exist of indigenous societies that have misused environments by misjudging their natural limits, indigenous societies that have successfully lived in healthy interrelationship with place offer us a source for new themes that could inform conscious movement of modern societies toward ecologically sustainable living. (Armstrong, 1995; Berkes, 1999; Grim, 2001; LaDuke, 1999; Martinez, 1997; Nelson, 1983; Salmon, 2000; Sveiby & Skuthorpe, 2006). The potential exists to eliminate through praxis the human/nature dichotomy of Western culture. The CST of sustainability focuses attention on the need to do so. Through examining the depth and pervasiveness of the myth of the human/nature divide, the CST of sustainability helps sustainability activists and educators develop ideas, consciousness, and actions that are appropriate to dispelling this myth.

We now turn to a discussion of the contributions deep ecology and ecopsychology can make toward advancing the CST of sustainability and sustainability praxis.
The Contributions of Deep Ecology and Ecopsychology

When searching for an effective, overarching socio-ecological critique that would lend itself to environmentally related action, deep ecology and ecopsychology appear at first glance to be more directly relevant to the task than critical theory. CST offers us a lens through which to examine the abuse of power in the “rational” modern world, particularly in the context of a capitalist economy which seems bent upon destroying, not only the foundations for its own survival, but the foundations for life itself. With some notable exceptions (Marcuse, 1972/1994), however, Marxist derived critical theory tends not to situate its analysis explicitly within an ecological context. And although critical theory can be extended to these ends (Marcuse, 1972/1994), it tends not to articulate explicitly that its central goal is the healing of the human/nature divide that undergirds Western culture. Ecological Marxist James O’Connor (O’Connor, 1991/2008) and eco-socialist Joel Kovel (2002) argue that the present planetary crises call for a conjoining of socialist and ecological vision and action. I argue similarly that deep ecology and ecopsychology need the analysis offered by critical theory in order to most effectively address environmental problems, and I propose bringing the analyses of critical theory, deep ecology, and ecopsychology into dialog in higher education settings, in both classroom and service learning experiences.

It is the very fundamental divide between humans and nature in the Western tradition that both deep ecology and ecopsychology aim to heal. These two systems of belief and associated practice open windows upon the divide through which educators and others might glimpse its constitution and character. Still, as is the case with what one can see from any window, the view is informative, even inspiring, but still only partial. Enacting the principles of deep ecology and practicing ecopsychology offer us important and useful means to better understand ourselves and
our place in the world, but they must be complemented by systematic theorizing on political

economy – and action on all of these theories.

In this section, I discuss the valuable contributions deep ecology and ecopsychology can

make to conceptualizing a CST of sustainability and to acting on this theory through

sustainability education at the college level. I propose that CST, deep ecology, and

ecopsychology offer complementary theoretical and practical approaches within a CST of

sustainability. I also propose that place can effectively serve as a unifying concept and construct

within which these complementary theories can translate most effectively into the practice of

sustainability.

Deep ecology, founded by Norwegian philosopher Arne Næs, represents a clear attempt
to conceptualize humans as part of nature. Næs' first principle of deep ecology exemplifies this
goal: “rejection of the man-in-environment image in favor of the relational, total-field image”
clearly strikes directly at the dualistic hierarchy of humans over nature. The third and fourth
principles, “diversity and symbiosis” and “anticlass posture” (p. 144-145) lend themselves to
elimination of destructive hierarchies and valuing difference as a constituent of healthy
mutualism. With his fifth principle, Næs calls upon us to “fight against pollution and resource
depletion” (p. 145). Næs enjoins us to counteract the ill effects of the global economy and its
requisite economic growth, but he does not offer the kind of deeply systemic analysis of political

economy that would help us understand how to combat the problems of pollution and resource
depletion at their causal roots.

Deep ecologist Bill Devall (1980/2008) clearly recognizes that there are deep social and
economic sources to ecological destruction and depletion. He writes:
Treating the symptoms of man/nature conflict, such as air or water pollution, may divert attention from more important issues and thus be counterproductive to ‘solving’ the problems. Economics must be subordinate to ecological-ethical criteria. Economics is to be treated as a small subbranch of ecology and will assume a rightfully minor role in the new paradigm. (Devall, 1980/2008, p. 158)

Devall here envisions an appropriate reordering of social priorities – making economy serve socio-ecological ends rather than the reverse – but he does not mention the complexity and difficulty involved in the task of moving global society to this conclusion. I notice the passive voice – “is to be treated” – and ask: Treated by whom? And how? These questions invite a combination between the principles of deep ecology and equally deep theories/practices of transforming global political economy. The first of these traditions, deep ecology, is rooted in idealism, and the later is rooted in materialism. A brief explanation of the idealist and materialist traditions leads us to the suitability of critical social theory as a complement to deep ecology.

Devall’s arguments embody an essential idealism that is a source of deep ecology’s incompleteness as a theory for guiding needed change. He closes his essay “The Deep Ecology Movement” with the statement: “From the perspective of Deep Ecology, ecological resistance will naturally flow from and with a developing ecological consciousness” (Devall, 1980/2008, p. 159). According to Devall, clearly consciousness determines being, an idealist formulation. The historical materialist argument that forms the foundation for Marxist theories reverses the idealist notion of causality by claiming that being determines consciousness. As I have argued above in relation to Gramsci’s theory of praxis, both idealism and materialism, taken in their pure form, are incomplete as a foundation for sustainability-oriented praxis.

A recent, striking example of the incapability of the idealist formulation to explain behavior is played out in the film An Inconvenient Truth (Guggenheim, 2006). Al Gore relates how he once thought that, once federal legislators in the United States were supplied with good
information about global warming, they would naturally act to protect the world and future generations by creating policies to solve the problem. In reality, they did no such thing. Each of us who drives a car today also knows s/he is contributing to global warming by doing so, but we still drive. We are conscious of the harm we are doing, but most of us pursue only partial solutions, if any at all. But then, we are living in a world where our choices are limited by the systems and structures within which we live – something to which I will return below.

Marxist materialist theories are incomplete in important ways as well. Marx believed that the proletariat who were directly exploited by capitalism would develop a class consciousness that would involve them directly in political revolution, thereby allowing them to seize control of capital and end exploitation of labor. But global revolution of this nature has not occurred even though the exploitation of workers by the elite has been brutal and direct. Clearly, something more complex than can be described by naïve idealism or early Marxist materialism is at work.

Marxism is grounded in an analysis of power and exploitation. Understanding the complex processes, both economic and cultural, that today perpetuate and advance the global economy and concentrate global wealth in fewer and fewer hands requires developing an understanding of the use and abuse of social power. Developing this understanding calls for building upon Marx’s original analysis in important ways. Critical social theory can help us here since critical theorists seek to uncover the processes through which social power is perpetuated and further entrenched in modern society. As noted above, Marcuse’s (1964) concept of repressive desublimation and Gramsci’s (1971/1999) concept of cultural hegemony are of particular importance for understanding how and why the global economy continues to expand with the seeming support of the masses.
Ecopsychology offers another promising contribution to a CST of sustainability that can serve as an appropriate foundation for sustainability education. With its roots in psychology and that discipline’s traditional focus on the individual – including focusing attention on realizing full self integration and forming a healthy personal identity – ecopsychology retains a focus on the self, but the self in context. Ecopsychology recognizes explicitly that human psychological health is inextricably intertwined with the health of the environment: that when we damage the earth and other creatures, we damage ourselves. Therefore, ecopsychology deals explicitly with psychological trauma resulting from human abstraction from nature. Like deep ecology, it is concerned with healing the human/nature divide (see Rozak, 1995).

It is perhaps ecopsychology’s concern for individuals that makes it a welcome complement to deep ecology. In her essay on deep ecology and ecofeminism, Freya Mathews (1992/1999) argues that deep ecology’s focus on a relational total field image conception of all beings in nature (Næs’ first principle), combined with the deep ecological belief that nature knows best, leaves one to assume that all human action – as part of a nature that knows best – is natural and, therefore, morally unassailable. Mathews argues that concern for individuals, human and nonhuman, is at the heart of human emotional concern with and for nature, even though this concern for fellow beings can at times conflict with the health of the whole. Mathews claims that we are neither solely immersed in a larger field image of being nor solely separate beings. She argues that we are both – our relationships and our individual selves. In this way, according to Mathews, we are like the “wavicles” of quantum physics: we are two irreducible things at once (Mathews, 1992/1994. p. 240).18

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Ecopsychology’s concern with such issues as proper individual education and initiation into reciprocity with others and the natural world (Shepard, 1995, p. 30; Armstrong, 1995) and confronting and processing ecological grief (Windle, 1995), represent a concern for the individual in community while also recognizing larger ecosystemic relational wholes. Ecopsychological thought, since it concerns itself with the individual in context, may lead more directly and naturally than does deep ecology to emotional connection across the human/nature divide. In this way, it serves as a complement to deep ecology in addressing concerns of ecological health and integrity. Ecopsychology can help us recognize and consciously experience the self within the community of life. It is the denial of this sense of the fellowship of all creation that has allowed us to pillage the earth through “rational,” mechanized means of extraction and production. We need to revive the human sense of the community of all beings, and ecopsychology has a role to play in this revival.

Without a complementary grounding in systemic and structural analysis informed by critical social theory, however, followers of ecopsychology, like those of deep ecology, can fall into the idealist trap. At the extreme, they may believe that ecopsychological health will, on its own, create radically improved conditions of being, thereby bypassing a necessary confrontation with entrenched powers. I disagree. The longer we remain unaware of the powers that, often unconsciously, entrap us in the status quo, the longer we will be manipulated by these hegemonic powers. In a materialist/idealist analysis, we can come to see how our being, as experienced in the modern capitalist world, has determined a consciousness that oppresses us, others, and nature.

Ecopsychology can help us build healthy emotional connections with nature and identities that recognize our fundamental interrelationship with the natural world. Deep ecology
can help us focus on the need to emphasize relational wholes in a modern world that has too long focused on reductive thinking and analysis. Critical theory, rooted in the critique of domination, can help us analyze entrenched systems of power so that we might act effectively to dislodge them, and indigenous worldviews can help us understand the concept and practices of reciprocity among people and between people and nature. All of these strands of thought inform the critical social theory of sustainability. We now turn our inquiry to systems theory as another source for sustainability-oriented thought and action.

**Systems Theory: As Critique and Not Critique**

Systems theory can contribute effectively to developing a CST of sustainability, but it must be used with care. It is a school of thought that, like ecopsychology and deep ecology, has many adherents among sustainability advocates. The systems theory I refer to in this section is not sociological structural functionalism, nor is it political scientific systems theory (e.g. Gabriel Almond, Bingham Powell, David Easton). Instead, it derives from the sciences, including chaos theory, quantum physics, and nonlinear dynamics. The new sciences offer us important insights about holism, relationship, and creative emergence within complex systems that help us see that our world and the universe manifest from much more than simple cause and effect relationships (Capra, 2002). Since developing a sustainable worldview means conceptual reintegration of humans with ecologies and recognition of the interconnectedness of all life and all natural phenomena, systems theory offers important opportunities to develop more sustainable ways of seeing and being in the world.

But some works of systems theorists offer little direct critique of society. These works instead emphasize comprehending the workings of systems of all kinds – from ecological systems to social systems (Folke, Hahn, Olsson, & Norberg, 2005; Laszlo, 2006). Systems
theory extends to systems of all scales and scopes (Laszlo, 2006, pp. 89-109). The theory offers us important insights into how systems of all kinds may embody emergent properties and possibilities that are characteristic of systems as wholes – offering us a means of understanding why an entire system really is more than the sum of its parts. When system functioning is described as more or less autonomous, however, direct critique of the uses and abuses of social power tends to slip into the background, along with discussion of human agency. Detailed explanations of principles of system functioning can impart an almost autonomous quality to systems, as though emergence and other forms of system change operate outside human history, only minimally, if at all, influenced by human choice and action. Systems theory that does not directly engage in critique of domination and oppression can only superficially inform action, especially when the level of social analysis remains general and not concrete.

In his book *The Chaos Point: The World at the Crossroads*, sustainability and systems theorist Ervin Laszlo (2006) uses systems theory as a basis for discussing the sustainability crisis and possibilities for averting catastrophic social and ecological collapse. While Laszlo does advocate human agency in history as essential to global society in avoiding catastrophe, his critique is too general and too abstractly idealist in nature to serve as a strong foundation for sustainability-oriented action. The sources of unsustainability remain mystified since Laszlo refrains from analyzing in depth the specific economic, social, and cultural mechanisms that coerce often unconscious collusion by the masses. The form of agency Laszlo advocates is mostly within the realm of consciousness. He emphasizes human thought as an active agent in complex systems, an agent capable of triggering almost spontaneous sustainability-oriented creative emergence (p. 10). He states: “When a society reaches the limits of its stability and turns chaotic, it becomes supersensitive, responsive even to small fluctuations such as changes in the
values, beliefs, worldviews, and aspirations of its members” (Laszlo, 2006, p. 10). Here, Laszlo (2006) claims that the nature of the social system as a complex system is currently manifesting an opening for consciousness to create a shift in the social paradigm.

Chapter seven of The Chaos Point (Laszlo, 2006, pp. 61-82) is titled “What You Can Do Today.” In this chapter, Laszlo advocates the following: “shed obsolete beliefs” (p. 61), “adopt a new morality” (p. 70), “dream your world and act on it” (p. 74), and “evolve your consciousness” (p. 76). Laszlo also briefly confronts many of the destructive and unsustainable assumptions of modern, capitalist industrialism such as “nature is inexhaustible” (p. 65), “the world is a giant mechanism” (p. 66), “the market [effectively] distributes benefits” (p. 67), “the more you consume the better you are” (p. 68), “the more money you have, the happier you are” (p. 68), and “economic ends justify military means” (p. 69). Laszlo is calling upon his readers to think differently. He is also calling upon them to make a difference, but unfortunately, he offers little direct social critique that could usefully inform action. In calling us to bring new dreams of a sustainable reality to life, Laszlo states:

> When you see things as they are and ask why are things the way they are – which is likely to be very different from the way you dream it – you come across a maze of complex explanations and a tangle of unsolved problems. But if you dare to dream, and share your dream with friends and neighbors and ask, why are things not the way I dream it, you will find answers – and ways you can come together to start making a world that resembles your dream. (2006, p. 76)

This call to action assumes that people are capable of dreaming sustainable dreams within an unsustainable system and maintaining those dreams for the long haul – while, in contradistinctions, the economic and social incentives and rewards of the current social system flow from securing social power and from exploitation rather than from reciprocity and care for nature and others. His call to action also assumes that somehow, almost magically, people who cultivate a sustainable consciousness will coalesce in harmonious sustainability-oriented action.
A CST-based analysis the challenges to sustainability in a hegemonic society would question such assumptions. Most importantly, though, Laszlo’s claims here relate directly to the idea expressed early on in *The Chaos Point* (Laszlo, 2006, p. 10) that shifts in consciousness can tip the system into a sustainable state. Laszlo implies that this change can be accomplished without deeply interrogating or actively confronting the current system, a position highly contradictory to the CST of sustainability I seek to develop here. We do need to dream new dreams, but I argue that we need much more than this as a strategy for sustainability.

In order to maintain a sustainability-oriented vision and motivate action, I argue that we need a critique that can tell us more about why our socio-ecological systems are nearing catastrophic collapse and one that can offer us specific insights about how the institutions and systems of economic globalization enforce the dependency of nations, communities, and individuals on the global system. We also need a critique that can tell us about how the systems of global capitalism perpetuate themselves through the complicity of ordinary people. We need to be able to critique the cultural aspects of domination and the sources of our own collusion with the system, aspects of unsustainability of which many of us remain totally unaware. Developing an understanding of Marcuse’s (1964) concept of repressive desublimation and Gramsci’s (1971/1999) concept of cultural hegemony can help us become aware of how we have been colonized by capitalist society and how we also act to perpetuate our own domination and the domination of others and nature. A strong foundation for counter-hegemonic critique of our current society has been effectively laid by critical social theorists, and we can build upon that foundation in addressing issues of sustainability.

When it does not foreground deep critique of social history, a systems theory approach to explaining unsustainable society can offer everyone a way out of being indicted for the problems
of our world today. Noncritical versions of systems theory are unlikely to be challenged by the powerful or to make anyone uncomfortable. Nonspecific critiques that call upon readers to change the world through changing their thinking similarly deflect direct confrontation between oppressors and oppressed because they do not directly confront the domination and oppression that pervade the capitalist system. Uncritical systems theory can inspire wonder at the complexity of our societies and the natural world, but they do not call upon us to do anything specific to shape our future. Such articulations of systems theory are mostly incompatible with a CST based analysis of social systems and with the call to agency embodied in CST analysis.

Versions of systems theory that articulate with CST’s firm commitment to deep analysis of society as a historical formulation do exist, however, and these versions offer the possibility for integrating the insights of systems theory into the CST of sustainability. In his book, *The Upside of Down: Catastrophe, Creativity, and the Renewal of Civilization*, Thomas Homer-Dixon (2006) offers a version of systems theory that focuses attention simultaneously in three important areas: 1) the historically rooted systems of domination and oppression, 2) the workings of complex natural systems not created by humans, and 3) perhaps most importantly, the interactions between these two large-scale systems and among the subsystems that comprise them.

Homer-Dixon’s (2006) theory derives from the work of well known ecologist and systems theorist Crawford Holling (Homer-Dixon, 2006, pp. 225-234). Holling, and his colleagues at the Resilience Alliance, have developed a version of systems theory called “panarchy theory” (Homer-Dixon, 2006, p. 226). According to this theory, complex systems manifest themselves in adaptive cycles. These cycles have a growth phase characterized by a system’s rising potential for novelty and rising connectedness and self-regulation. In its growth
phase, a system continually gives rise to many differentiated parts that function in tightly connected relationship with one another, leaving little room for redundancy or autonomy that would increase resiliency. While complexity is increasing, a system is declining in overall resilience due to these tightly coupled, complex interrelationships that make the system brittle and increasingly vulnerable to cascading and catastrophic collapse (Homer-Dixon, 2006, pp. 226-228). Following collapse of its growth phase, a system demonstrates reduced levels of differentiation. It is “far less interconnected and rigid” and “far more resilient to sudden shock” (Homer-Dixon, 2006, p. 228). Homer-Dixon concludes that system collapse may, in the end, increase the health of the system and its resilience to shocks, but at a great price of destruction of the growth phase incarnation of the system (Homer-Dixon, 2006, pp. 227-228).

Additionally, according to Holling and his colleagues,

No given adaptive cycle exists in isolation. Rather, it’s usually sandwiched between higher and lower adaptive cycles. For instance, above the forest’s cycle is the larger and slower-moving cycle of the regional ecosystem, and above that, in turn, is the even slower cycle of global biogeochemical processes, where planetary flows of materials and elements – like carbon – can be measured in time spans of years, decades, or even millennia. Below the forest’s adaptive cycle, on the other hand, are the smaller and faster cycles of subecosystems…. (Homer-Dixon, 2006, pp. 229-230)

The entire network of adaptive cycles spans a huge range of scale in both space and time (Homer-Dixon, 2006, p. 230). In the growth phase, while high levels of differentiation and interconnectedness are emerging, systems and their subsystems can become synchronized so that the overall system becomes increasingly vulnerable to collapse triggered from any of many system levels.

According to Homer-Dixon (2006), complex global society may be increasingly vulnerable to collapse due to system synchronicity and tight system integration driven by efficiency. To support this claim, he draws on Holling’s analysis saying that Holling believes we
are on the verge of large scale, systemic crisis for several reasons. For one, adaptive cycles have become nested together in global systems with many systems and subsystems simultaneously poised on the brink of collapse. This synchronicity has been encouraged by tight interlinking of systems, and it means that continually increasing global connectivity increases chances for deep collapse triggered by high-level system collapse triggering cascading collapses in lower level systems (Homer-Dixon, 2006, p. 231). In more resilient systems with looser coupling of parts and reduced synchronization across systems and subsystems, higher and lower system cycles form a buffer for individual adaptive cycles and help to keep them from collapsing. Larger, slower moving cycles tend to provide stability, and lower, faster moving cycles tend to inject novelty that keeps the system flexible and responsive rather than brittle (Homer-Dixon, 2006, p. 230).

Homer-Dixon sees the moment of a system’s collapse to a level of reduced complexity as a time for potential “catagenesis.” He defines catagenesis thusly:

[The term] combines the prefix cata, which means ‘down’ in ancient Greek, with the root genesis, which means ‘birth….’ Ecologists use catagenesis to refer to the evolution of a species toward a simpler, less-specialized form…. I retain the idea of a collapse or breakdown to a simpler form, but I especially emphasize the ‘genesis’ – the birth of something new, unexpected, and potentially good … in essence, the everyday reinvention of our future. (Homer-Dixon, 2006, p. 22)

Homer-Dixon (2006) foresees a near-term, widespread collapse of tightly interconnected social systems. He also foresees widespread potential collapse of ecological systems on which societies depend for survival and for generating economic growth. The extent and character of collapse, however, remain historically contingent on past, present, and future actions of individuals, organizations, and societies.

It is important to recognize that, according to Homer-Dixon (2006), system collapse at a particular time, of a particular character, or deriving from particular causes is not determined as
an essential characteristic of the system itself. A system’s history, as determined by agents active within the system, plays an important role in determining the character and timing of such outcomes. Homer-Dixon states, “A complex system’s history turns out to be crucially important because it profoundly shapes what the system becomes, and it can’t be rewritten or repealed” (2006, p. 26). This interaction between a system and natural/human history/agency can be described as a form of path dependence (Homer-Dixon, 2006, p. 27). When an individual or a system chooses one path or one solution from among many, later paths or solutions that come into view derive from the original choice. It becomes increasingly difficult to revisit and revise past choices which become assumptions upon which aspects and parts of a system are continually constructed (Homer-Dixon, 2006, p. 27). Systems exist and function historically and not as machines with predetermined products and outcomes. They move through growth and collapse phases according to the actions of individuals and groups that make up the system and according to natural phenomena that impact system functions. Still, possibilities for agency within a highly complex system, with its functions based on countless interlocking assumptive premises and resultant choices, does become rigidified and open to an increasingly narrow field of vision and possibility for deep change – barring, of course, the advent of collapse.

Historical contingency must be foregrounded as a central organizing principle of systems in order for systems theorists to avoid giving the impression that systems function according to natural laws that exist outside the realm of human agency. Giving such an impression would be dangerous in this time of converging socio-ecological crises, for if human ability to shape the present and the future appears out of reach, people may allow themselves to be swept along by the momentum of business as usual rather than seeking system change. And it is crucial to alter current systems in ways that increase socio-ecological resilience – if we wish to avoid a collapse
that could flatten the modern era with such force that even those aspects of modern society we might wish to retain would disintegrate. Depending on the force of such a collapse, human societies might cease to exist altogether.

Some additional aspects of the behavior of complex systems help us understand how social and ecological collapse could be so violent and total. The existence of thresholds in complex systems is one such aspect. According to Homer-Dixon (2006), the concept of thresholds in complex systems describes nonlinear system behavior. As disturbances or changes in the system accumulate, the behavior of the entire system can suddenly shift into a “radically new mode” (pp. 24-29). The converging socio-ecological crises of climate change, accumulating pollution, species loss, loss of ecological resilience, peak oil, economic turmoil, and social inequity and injustice represent accumulating and mutually reinforcing changes in our world, some or all of which could contribute to creating a threshold. Once crossed, such a threshold would create socio-ecological conditions radically different from those of the present, conditions under which survival for humans and others creatures could be in question. Like many climate scientists, Homer-Dixon sees accumulating changes in the climate system as a potential threshold:

[One] reason we should be very concerned about our climate future is likely the most important, at least from the point of view of possible social breakdown in coming decades: the prospect of abrupt climate shifts or ‘nonlinearities.’ In a world where billions of people are tightly coupled to a steady stream of services from a stable climate – depending closely on regular rainfall to grow their food, for example – a sudden flip to a new climate regime would be a prescription for chaos. (2006, pp. 168-169)

An additional aspect of the behavior of complex systems that points toward possible near term collapse is synergy. According to Homer-Dixon, “Synergy happens when people, things, or events combine to produce a larger impact than they would if each acted separately” (2006, p. 106). Synergy is facilitated by the tight interlinkages and efficiency that characterize complex
systems at the height of the growth phase. Negative synergies and system breakdown become increasingly probable within systems as they become more complex and tightly integrated.

According to Homer-Dixon, connectivity increases the likelihood of harmful, self-reinforcing feedback loops, a form of negative synergy. He provides an example that is especially apt for current times: “A stock market crash or financial panic is … a vicious circle, because selling drives down prices, begetting fear in the market and more selling, which lowers prices even more” (Homer-Dixon, 2006, p. 115). Homer-Dixon emphasizes the role that synergy can play in complex system breakdown:

A society is more likely to experience breakdown when it’s hit by many severe stresses simultaneously, when these stresses combine in ways that magnify their synergistic impact …, and when this impact propagates rapidly through a large number of links among people, groups, organizations, and technologies. (2006, p. 110)

Homer-Dixon concludes that the growth phase of global capitalist society is not sustainable (2006, p. 253). He states:

As our global social-ecological system moves through the growth phase of its adaptive cycle … it’s losing resilience…. Capitalism’s constant pressure on companies to maximize efficiency tightens links between producers and suppliers; reduces slack, buffering, and redundancy; and so makes cascading failure more likely and damaging. As well, capitalism’s pressure on people to be more productive and efficient drives them to acquire hyperspecialized skills and knowledge, which means they become less autonomous, more dependent on other specialized people and technologies, and ultimately more vulnerable to shocks…. Meanwhile, worsening damage to the local and regional natural environment in many poor countries is fraying ecological networks and undermining economies and political stability. And finally pressure is increasing within both rich and poor societies too – from tectonic stresses like demographic imbalance, growth of megacities, and widening income gaps. (p. 252)

According to Homer-Dixon, “A prudent way to cope with invisible but inevitable dangers is to … build resilience into all systems critical to our well-being” (2006, p. 283). He defines resilience as “an emergent property of a system … not a result of any one of the system’s parts but of the synergy between all its parts” (2006, p. 284), and he advocates “boosting the ability of
each [system] part to take care of itself in a crisis” as a means to boost overall system resilience (2006, p. 284). Self-sufficiency and redundancy both serve to increase system resilience.

In the systems theory of Homer-Dixon (2006), social justice and resiliency reinforce one another. Working for social justice would increase system resiliency:

- Our world’s capacity to avoid ‘deep collapse’ – or synchronous failure – depends on resilience throughout the system. In practical terms today, this means we must focus our attention on boosting the resilience of the world’s weakest societies – those with horribly damaged environments, endemic poverty, inadequate skills and education, and weak and corrupt governments. If we don’t, our entire global social-ecological systems will become steadily more vulnerable to the diseases, terrorism, and financial crises that emerge from its least resilient components. (pp. 286-287)

Increasing social justice and resilience would also mean confronting global capitalist ideology:

- In its most dogmatic formulation, this ideology says that larger scale, faster growth, less government, and more efficiency, connectivity, and speed are always better. Slack is always waste. So resilience – even as an idea, let alone as a goal of public policy – isn’t found anywhere on the agendas of our societies’ leaders. (Homer-Dixon, 2006, p. 287)

In his critique of capitalist society and call for social justice, Homer-Dixon (2006) articulates systems theory that is highly compatible with CST. His work also aids in the application of CST to the context of sustainability in that it helps us understand linkages between human societies and ecological systems that make the globalized world-system brittle and vulnerable to widespread and deep collapse. Critical theorists critique global capitalism’s drive for efficiency and its unjust processes of concentrating wealth in fewer and fewer hands. These theorists reject authoritarianism and domination of individuals by a capitalist society that increasingly treats people as things, as cogs in a vast machine. Homer-Dixon (2006) helps us see that global capitalism should be rejected, not only on the grounds that it impoverishes the quality of human existence and damages nature, but also on the grounds that it is contributing in important ways to priming both society and nature for devastating collapse.
Systems theory, as presented by Homer-Dixon (2006), offers an important analytical lens for the CST of sustainability. His theory calls upon us to consider the dynamic nature of systems as constantly changing and open to the influence of multiple agents and circumstances. Perhaps most importantly, it focuses our attention on issues of system resiliency, rather than “stability” which would indicate a more or less static state. Homer-Dixon’s (2006) theory helps us see that our socio-ecological systems are ever changing, but it also highlights the need to consider how changes affect the ability of local and global systems to respond with resilience rather than catastrophic collapse in the face of stresses and disturbances. Levels of resiliency demonstrated by communities, nations, and socio-ecological systems globally in the face of currently converging socio-ecological crises of sustainability will in many ways determine the capacity of societies, and the ecosystems of which they are part, to respond with creative catagenesis. Those systems that embody low levels of resilience will be – and are at this moment – in jeopardy of deep collapse from which little of the beauty of current complex socio-ecological interrelationships may survive.

Systems theory can contribute most effectively to a CST of sustainability that serves as a basis for sustainability-oriented education and action. In order to do so, it must be used with a view to the essential roles of history and agency in creating current realities. The systems theory of Homer-Dixon (2006) contributes effectively to a CST of sustainability that grapples with domination and oppression as features of unsustainable, brittle systems that lack resiliency. Therefore, this theory can play an important role in adapting CST to the context of the current sustainability crisis – and in pointing the way toward effective sustainability-oriented action.
The Enforced Dependency of Globalization as a Locus for Action

To this point, I have articulated a CST of sustainability that derives from a mostly socio-cultural perspective. The CST of sustainability must also confront the systems and institutions of global capitalism to elucidate how globalization itself intensifies cultural hegemony and repressive desublimation while also fostering increasing dependence of individuals on the capitalist system. Homer-Dixon describes the process thusly:

Our economic system generates pervasive insecurity; this insecurity impels us to play by the rules; our need to play by the rules encourages us to find these rules morally legitimate; and our belief that the rules are legitimate creates a huge obstacle to changing them. For many of us, the, denial is entirely rational. (2006, p. 218)

I will explore the sources that generate globally pervasive economic and social insecurity in chapter three of this dissertation. In that chapter, I will argue that capitalist political economy generates an enforced dependency of nations, communities, and individuals upon globalization. Under enforced dependency, people may see no way out of the globalized system since this system sustains them even while, seemingly paradoxically, it impoverishes and disempowers them.

Chapter three will closely articulate with the critical social theory of sustainability developed here, particularly with the Gramscian (1971/1999) notion of cultural hegemony, with Marcuse’s (1964) concept of repressive desublimation, and with Homer-Dixon’s (2006) analysis of world socio-economic systems.

Fossil Fuel Depletion as a Context for the Critical Social Theory of Sustainability

Fossil fuel dependency represents an important aspect of the late capitalist political economy of globalization. The use of fossil fuels is interwoven with the political economy of enforced dependency since fossil fuels act as a catalyst to perpetuating and entrenching the global capitalist system. This dependency will be treated in greater depth in chapter three of this
dissertation where I will explore how and why fossil fuels have, in important ways, made globalization possible. I will also examine how and why dependence on these same fuels may trigger globalization’s undoing. For our purposes here, it is important to acknowledge that fossil fuel dependency and depletion form an important context for the critical social theory of sustainability. No such theory would be complete without acknowledging this fact because fossil fuel depletion, particularly in the cases of oil and gas, points to possibilities of a near-term, radically changed political, economic, and social outlook. Declining fossil fuel production will produce a radical historical disjuncture with modern capitalism (Heinberg, 2005, chap. 3), and this very disjuncture opens possibilities for sustainability-oriented education and social change (Heinberg, 2005, chap. 6).

It is important for us to recognize that an understanding of the intensely destabilizing potential of fossil fuel depletion within global societies and economies creates an entirely new context for CST. The critical social theory of sustainability explicitly recognizes that this emerging context of fossil fuel scarcity threatens the continuity of late capitalism on the tangible grounds of resource supply. Declining availability of oil and gas threaten economic growth globally, and if the global economy contracts, the entire economic system becomes vulnerable to cascading defaults, currency crises, and economic recessions. In this event, the very existence of the capitalist order is at stake.

The Frankfurt School founders of critical theory offered insightful and important theories, particularly regarding the cultural dynamics of hegemonic society, and these theories have proven highly useful to developing the CST of sustainability. But these same theorists did not – in fact, probably could not, given their position in history – consider the future of hegemonic society within an energy decline scenario. The CST of sustainability situates analysis within a
peak oil and gas context in order to consider how and why this new scenario creates openings for rapid and pervasive social change. The CST of sustainability, rooted as it is in praxis, seeks to use these openings to the best advantage possible in advancing a sustainable socio-ecological agenda.

In later chapters, I will explore possibilities for (re)localization of societies and economies as an important sustainability-oriented strategy within the emerging context of energy decline. I will argue that pursuing (re)localization as a sustainability strategy includes engaging in a critical pedagogy of place rooted in the CST of sustainability.

**Conclusions: Toward Sustainability Praxis**

Because it can help people understand the many obstacles to sustainability embodied in the late capitalist society, the critical social theory of sustainability forms a sound foundation for sustainability-oriented education and praxis. The CST of sustainability can also help people understand historical openings for change emerging within the sustainability crisis itself. This understanding can help sustainability educators and practitioners focus their praxis in the most effective ways possible. To these ends, the CST of sustainability asserts the importance of in-depth, transdisciplinary social critique rooted in a critique of domination that explicitly recognizes that the exploitation of both people and nature derive from the same sources within capitalist society. The CST of sustainability recognizes that humans are part of nature and dependent upon nature as the source of all life. This recognition promotes a form of praxis through which human health and ecosystemic health can be pursued as a single end. The CST of sustainability derives from historicist foundations. It recognizes self-reflexively that its critique manifests in and through history and that its validity must be judged according to its ability to inform sustainability-oriented action. The continuing validity of the CST of sustainability must
be judged over time by its ability to advance sustainability through continually adapting to an ever changing socio-ecological context. It is my hope that this new theory will usefully inform sustainability praxis in a wide variety of social, economic, educational, and ecological contexts. If the sustainability crisis is not addressed through radical changes in thinking and living patterns, the world will continue to lose much of its existing beauty, diversity, and resiliency.
Chapter 3: The Political Economy of Enforced Dependency

The collective violence of globalization is keenly felt daily by the exploited peoples of the world. They feed the engines of profit with their labor while surviving in a state of enforced dependency upon the global economy. Tragically, the subsistence lifestyles that are their heritage have been rendered backward and uneconomic when compared to cheap mass production and industrial agriculture (Douthwaite, 2004, pp. 114-116; Polanyi, 1944/1957, chap. 3-5). Ironically, the relatively privileged citizens of industrialized nations such as the United States also experience the psychic and spiritual violence wrought by globalization. They may benefit materially, at least at this point in time, but they lack many of the meaningful relationships with people and nature that typified more resilient, self-reliant, and localized communities prior to the rapid expansion of globalization (Achbar, Simpson, Bakan, & Crooks, 2005; Armstrong, 1995; Berry, 1987; Martinez, 1997; Nelson, 1983; Polanyi, 1944/1957, chap. 4; Salmon, 2000).

The self-perpetuating and self-reinforcing systems of power and exploitation that are the focus of this chapter embody a global system of collective violence. Collective violence consists of “actions by large numbers of people that contribute to large-scale destruction” (Summers & Markusen, 1992/2003, p. 215). The destruction can be social, environmental, or both. I argue that the political economy of late capitalism requires collective violence and systematically entraps people as both willing and not-so-willing participants. The large scale of the political economy of globalization and the complex relationships among its principle proponents and structures diffuse responsibility for destructive outcomes and promote a culture of obedience in the face of power.

The enormity of the global economy and its inbuilt requirement for growth place heavy pressure upon people and nations worldwide to deliver compliant consumers, raw materials, and
energy to feed the system. This pressure manifests in the overt manipulation and exploitation of peoples and places of the Global South and in the increasing pace and demands of life and work in the industrial world. Within the global system, former colonies attempt to carve out their share of wealth at the same time that a specific set of global institutions, relationships, structures, and trends ensure that they remain at the service of the First World (Robbins, 1999, pp. 101-107).

This chapter is rooted in political economy. I demonstrate how the neoliberal global economy is a political entity that is far from neutral in the awarding of privileges and inflicting of harm. The global economy is not a neutral and self-regulating machine, and the very idea of the self-regulating market is itself political (Polanyi, 1944/1957, chap. 6). Nations, communities, and individuals caught in the global economy’s web – virtually everyone everywhere at this point in time – are constrained in their day-to-day and long-term decision making and actions into supporting the global system through their participation in it. Participants may or may not be rewarded by receiving the necessities of life (and sometimes much, much more – or much, much less) from the system, but their participation is ultimately self-defeating in that it undermines long term sustainability and well-being for individuals and communities. But there are few choices for most of us: we participate under threat of duress, even death.

In this chapter, I focus on the post World War II (WWII) period – late capitalism – which is characterized by the rapid growth of an increasingly integrated global economy, and I examine some of the mutually- and self-reinforcing systems of concentrated political and economic power of late capitalist globalization. Specifically, I define the concept of enforced dependency, and I analyze the structural and systemic features of the political economy of enforced dependency. In the process, I analyze certain power structures and practices that embody the momentum and
inertia of globalization, and I focus attention on the mechanisms that enforce the dependency of ever growing numbers of people on the system of global capitalism that paradoxically and simultaneously both sustains and depletes them.

Most importantly, I argue that late capitalist globalization is unsustainable because it spreads and enforces forms of dependency that undercut socio-ecological resiliency. I demonstrate that, through enforced dependency, late capitalism is consuming its own foundations and is headed for collapse. I elucidate important sources of destructive and ultimately self-destructive enforced dependency in an effort to contribute to sustainability-oriented education and praxis. As noted in the last chapter, socio-ecological sustainability, as the ultimate goal of the praxis I advocate, is conceptualized as “the long-term equilibrium of health and integrity maintained dynamically within any individual system (organism, organization, ecosystem, community, etc.) through a diversity of relationships with other systems” (Pittman, 2007).

I offer in this chapter a lens for comprehending how key aspects of globalization enforce dependency worldwide. I focus on how globalization fosters and perpetuates dependency on globalized capitalism by ever growing numbers of people in ever more locations, and I demonstrate how forms of global enforced dependency impact socio-ecological resilience and threaten our ability to live sustainably. I explore how and why the political and economic horizons of societies narrow as a result of late capitalist, neoliberal globalization so that, even should a nation, community, or society wish to reverse or change course, the late capitalist system enforces continued political and economic dependency on the global economy.¹⁹

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¹⁹ Although questions of whether or not neoliberal globalization can promote economic growth or reduce poverty are important in that they open additional avenues for critiquing late capitalism, these questions are explored in this chapter chiefly in terms of their impacts on socio-ecological resilience and sustainability.
While the poor quite obviously pay the biggest price for the economic and political gains of dominant societies and classes within the global system, I argue that everyone will lose in the end as the processes and logic of neoliberal globalization continue their forward march. Everyone loses in terms of socio-ecological resilience in the face of the currently unfolding crisis of the global capitalist system that has consumed its very foundations. In order to build more equitable and sustainable societies beyond the capitalist crisis in history, it is precisely the building blocks of community resiliency that we will need. It is my hope that, by developing an understanding of the sources of resiliency depletion within global political economy, people can engage in sustainability-oriented education and praxis that can improve socio-ecological resilience.

I begin this chapter by highlighting three important sources of unsustainability within the world-system: fossil fuel depletion, ecological breakdown, and the structural crisis of capitalism as a viable economic system. These converging crises point to the possibility of near-term socio-ecological collapse, a possibility that drives my search for alternatives to the current political economic paradigm. I then define the concept of enforced dependency that serves as a heuristic for the analysis articulated throughout this chapter. This definition is followed by a discussion of late capitalism as a world-system of enforced dependency. I follow this discussion with an analysis of how modern money and debt contribute to enforcing dependency, in part by making economic growth requisite for the functioning of the capitalist order. I then explore how the growth requirement built into the global economy itself contributes to enforcing dependency. This brief exposition on economic growth is followed by a discussion of technological advancement and concomitant labor displacement as destabilizing features of the global growth

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20 I will focus on ways to increase the resilience of human/nature systems in chapters four and five of this dissertation. In chapter six, I focus on higher education as one context for doing so.
economy that, nonetheless, deepen dependency on the capitalist system by growing numbers of people worldwide. I then explain how neoclassical economics serves hegemonic interests in the late capitalist world. This explanation is followed by an explication of the Bretton Woods paradigm and a discussion of how this paradigm of global political economy created the foundation for neoliberalism. I then briefly define neoliberalism and discuss how the Bretton Woods institutions (the International Monetary Fund and the World Bank) and global free trade agreements have served the interests of neoliberal capitalists while simultaneously enforcing dependency within the Global South. I then focus attention on how dollar hegemony in the world-system has created complex forms of economic co-dependency that have allowed the United States to become a superpower and simultaneously made the world-system vulnerable to economic collapse. I then summarize how the institutions, ideologies, strategies, and structures discussed in this chapter combine to create and perpetuate the hegemony of global capitalist elites and culture. I conclude this chapter by suggesting some directions for cultures and economies to move toward socio-ecological sustainability.

Converging Crises

We begin our analysis of late capitalism as a system of unsustainable enforced dependency with a brief overview of three global-society-changing crises that frame and inform every aspect of the arguments articulated in this chapter. These crises are ecological breakdown, fossil fuel depletion, and the structural crisis of capitalism as a viable economic system.

Ecological Breakdown

Climate change represents perhaps the most well known all-pervasive threat to ecosystems planet wide (FEASTA, 2008; Guggenheim, 2006; IPCC, 2007; Orr, 2009). Additional drivers of ecological breakdown include widespread pollution that has made its way
into all areas of the biosphere; overharvesting of plants and animals that threatens to eliminate possibilities for population regeneration and to decrease species resilience through narrowing genetic diversity; extensive human takeover of habitats worldwide that places further stress on species resilience and biodiversity as well as on genetic diversity within species; and fresh water damming, diversion, and mining that are dewatering some ecosystems and flooding others (Barlow & Clarke, 2002; Booth, 2002, chap. 4-5; Douthwaite, 1999b, chap. 10; Homer-Dixon, 2006; Meadows, Randers, & Meadows, 2004; Reisner, 1993). To make matters worse, multiple sources of ecological damage compound one another (Booth, 2002, chap. 4), bringing species to the point of extinction and ecosystems to the verge of collapse.

To make matters even worse, societies everywhere have been shoehorned into the capitalist mode of production and distribution – a form of economic life and a culture defined and driven by capital accumulation and not by reciprocal duties to others and the natural world. The health of people and the environment most often does not easily or directly translate into profits in corporate balance sheets. Capitalism recognizes money as the measure of value and thereby focuses those who participate in and depend upon capitalism on making money as the central, perhaps only, means to achieving well-being. If human populations globally have become largely dependent upon the capitalist system, their dependence increases the odds for catastrophic ecological breakdowns by seemingly severing the ties between environmental and social health that were recognized and carefully maintained in successful, place-based indigenous societies (Armstrong, 1995; Martinez, 1997; Nelson, 1983; Salmon, 2000). Although late capitalism has obscured the relationships between environmental destruction and capital accumulation and between environmental and social health, we are witnessing the limits of this obfuscation as global ecological crises converge before our eyes (Homer-Dixon, 2006;
Meadows, Randers, & Meadows, 2004; Orr, 2009). We are running out of places to go where ecological distress is not evident.

As we analyze the political economy of enforced dependency, it is important to remember that, not only is capitalism itself reaching the limits of its ability to contain its own contradictions, but the biosphere is also nearing its limits to support extractive, wasteful, and toxic capitalist development (Orr, 2009). Not only is capitalism consuming its own base economically (Wallerstein, 2008a, 2008b), it is poisoning and depleting the ecological base required for the economic growth that is integral to the system (Daly, 1999).

**Fossil Fuel Depletion**

Oil, natural gas, and coal fueled the industrial revolution, and they remain the primary sources of energy currently driving the global economy. We will examine depletion of each of these sources of energy, with a focus on oil, in order to understand how fossil fuel depletion threatens to destabilize the global growth economy and, ultimately, render capitalism as we know it unworkable.

Inevitably and soon, global demand for oil and natural gas will outstrip global extraction and supply of these same resources (Campbell & Strouts, 2007, part I; Clark, 2005, chap. 3; Deffeyes, 2001; Douthwaite, 2004, p. 118; Greene, 2004; Heinberg, 2005, chap. 3; Kuntsler, 2005, chap. 1; Roberts, 2004, chap. 2; Simmons, 2005). The long-term implications of declining fossil energy supplies are immense. To fully comprehend the implications, it is important to understand the complexities of energy supplies and their interrelationships with the global economy, geopolitics, food production, transportation, and more. This work has been done well by others (Campbell & Strouts, 2007, part I; Clark, 2005; Deffeyes, 2001; Greene, 2004; Heinberg, 2005; Kuntsler, 2005; Roberts, 2004; Simmons, 2005). I offer here only a few
highlights to shed light on why fossil fuel dependency is unsustainable and how it creates extensive instability in the globalized world.

Oil depletion is a well known, studied, and documented fact. The first person to study this phenomenon, Dr. M. King Hubbert, a highly respected petroleum geologist, predicted in 1956 that oil production in the U.S. would peak in the early 1970s (Heinberg, 2005, p. 97; Deffeyes, 2001, chap 1). In fact, U.S. domestic production data show that domestic oil production did peak in 1970. In hindsight, the idea of peak production makes complete sense. Oil is not renewable. Oil fields are under pressure from the layers of rock, earth, and sometimes water above them. The liquid oil wants to escape upward from the field, which means that the effort needed to extract the resource is low at first. As more and more wells are drilled into a new field, oil production increases for a time (and the pressure within the field slowly drops) until production peaks. Thereafter, no matter how many new wells are drilled, production will inevitably decline as the oil becomes harder to extract (Greene, 2004; Heinberg, chap. 3; Kunstler, 2005, pp. 24-25; Roberts; pp. 50-51). Declining production is a familiar domestic reality in the United States. Once foremost among petroleum exporting nations, in 2007 the U.S. imported just over 65% of the oil it consumed (United States Energy Information Agency, 2008). Many well respected petroleum geologists predict a global peak in oil production between before 2015 (Deffeyes, 2001; Greene, 2004; Heinberg, 2005, chap. 3). In a lecture given in Cork, Ireland, in the summer of 2008, well known and internationally respected oil geologist Colin Campbell predicted we would see peak production of conventional oil in that same year.

The arguments of those who downplay or refute the importance of peak oil production coalesce around two central points: 1) that there is a great deal more oil to be discovered/extracted and 2) that human innovation and technology will make limits to oil
production irrelevant (see Huber, 2002; Lomborg, 2001; Lynch, 2001, 2003). This cornucopian camp consists mainly, though not entirely, of economists and those whose current political and economic interests are best served by assuming a rosy outlook for future oil production (Heinberg, 2005, pp. 118-136; Kunstler, 2005, pp. 28-29; Roberts, 2004, chap. 4). Economic growth is predicated upon ever growing supplies of fossil fuel-based energy, and predicting limits in sight to extraction of these resources is neither likely to buoy the consumer and producer confidence necessary to maintaining economic growth nor to garner political support from modern populations who depend upon the global growth economy for their livelihoods (Campbell & Strouts, 2007, pp. 11-12; Greene, 2004).

As for the possibility of future discoveries fueling global economic growth, worldwide oil discoveries peaked in the mid-1960s and have declined to such an extent that it would be nearly impossible for even large discoveries to reverse this trend (Heinberg, 2005, pp. 109 & 114). Witness the significant non-OPEC oil sources that are in decline (the United States, Mexico, and the North Sea are among these). Recent finds also do not compare well in size to earlier finds made in important oil regions such as the Middle East and Texas (Roberts, 2004, p. 51). In 2008, the world was using more than four barrels of oil for every one barrel discovered (Campbell, 2008). If this trend could be easily reversed, there is little doubt that it would have been over the past 40 years. According to Thomas Homer-Dixon (2006),

"Despite exploration companies’ immense investments of capital and technology, oil discovery in the U.S. has declined steadily since 1930. As the petroleum geologist Colin Campbell notes, ‘The United States had the money to [discover more oil], it had the incentive, [and] it had the technology, so the fact that discovery reached a peak – and then declined inexorably for … seventy years – is not for want of trying. It was due to the physical limits of what nature gave them.’" (p. 87)

Peaks in oil production lag decades behind peaks in discovery. According to internationally respected peak oil educator Richard Heinberg, at this point, “countries in [oil production] decline
account for about 30 percent of the world’s total oil production” (2005, p. 115). Matthew Simmons, founder and Chairman Emeritus of Simmons & Company, the world’s largest energy investment bank, asserts that Saudi Arabian oil production may be at or near its peak (Simmons, 2005, parts three and four). Even if new discoveries could push global peak oil production many years into the future, these discoveries would only delay the inevitable while also serving to further socio-economic dependence on oil based production, transportation, and development patterns.

The concept of net energy is also important to understand when considering oil production and sources of energy that might substitute for fossil fuels. The oil produced from a new field requires little effort to extract, but later on, the efforts required to lift oil from a declining field must intensify, so that the energy profit from the endeavor declines. Eventually, if extraction were to continue long enough, lifting oil from a declining field would become an energy losing proposition. Optimists often cite the many useful technologies employed in the modern energy industry for discovering and producing oil reserves as evidence of long-term ability to increase production levels or at least hold them flat (see for example Lomborg, 2001; Lynch 2001). What is not often acknowledged is that these investments are also energy investments and that the harder we have to work with these new technologies, the lower our net energy return. Furthermore, even if we were to suddenly be able to dramatically increase flows of petroleum with these technologies, doing so would only deepen a later energy crash because the total volume of oil available to us is finite (Heinberg, 2005, chap. 3-4).

And what about the second argument advanced by the cornucopians, that human ingenuity and technology will provide us with other sources of energy that might substitute for oil? (see for example Lomborg, 2001). For some energy “sources” such as hydrogen that are
often cited as potential contributors to a new energy economy, the net energy picture is particularly dim. Hydrogen must be refined from natural gas or electrolyzed from water (a process that requires electricity). According to the second law of thermodynamics, the hydrogen captured through this process actually has *less* energy available to be applied to work than was available for use from the electricity or the natural gas used to create the hydrogen in the first place. While hydrogen may serve future useful purposes as a storage medium for excess energy generated from renewable sources, it is hardly an energy *source*. It is only an energy carrier (Greene, 2004; Heinberg, 2005, pp. 161-168; Scheer, 2007, pp. 89-94).

Furthermore, many forms of renewable energy cited as replacements for oil (including wind and solar power generation, wave and tidal generation, hydroelectricity, and nuclear and geothermal generation) produce electricity. At this point in time, our global transportation infrastructure runs on liquid fuels, not electricity (Heinberg, 2005, chap. 4; Hirsch, Bezdek, & Wendling, 2005), and transportation remains the most difficult problem in terms of finding replacements for oil. With the global fleet numbering hundreds of millions of vehicles (Heinberg, 2005, chap. 2) – each of which required the equivalent of about 90 barrels of oil to fabricate (Greene, 2004) – and considering the miniscule to nonexistent infrastructure for alternative fuels (Heinberg, 2005, chap. 4; Hirsch, et al., 2005), we are facing a problem of monumental proportions – and one that will require us to use vast amounts of oil to address technologically. Although electric vehicles can be produced, an incredible energy investment would be needed to produce the vehicles and the additional infrastructure needed to transition all automobiles and trains to electricity, and it is doubtful that global shipping and air travel could be transitioned to run on electricity. Though a concerted effort to reduce the use of liquid fuels in cars by using electric-powered trains and light rail, for example, could theoretically free up liquid
fuels for use in other forms of long distance transport, it seems highly unlikely that nations faced with high debt levels (nations that are now cutting back on basic services) will be able to make these kinds of investments any time soon, at least on the scale that would be needed to avoid deep impacts to international shipping.

Biofuels such as ethanol and biodiesel can be used as liquid fuels to run some of the current global transport system, but growing the crops necessary to fuel the vast amounts of transportation required for globalization usually means competing with food production. Skyrocketing tortilla prices in Mexico have been linked to increased demand for corn-based ethanol in response to rapid oil price increases in 2007 and 2008. Corn producers sought the highest profits for their product, and a shortage of corn for food resulted (Patel, 2007). The European Union’s goal of deriving ten percent of its liquid fuels from plant-based sources by 2015 has been a factor in recent land grabs in Africa where large tracts of land are being acquired to produce and export biofuel feedstocks from countries where large numbers of people are hungry (Vidal, 2010).

We can run some of our current vehicles on natural gas, but we do not have many of those vehicles, and natural gas is now in decline in North America where a large percentage of the global fleet is used for day-to-day transportation (Darley, 2004; Greene, 2004). Furthermore, the depletion picture for natural gas is similar to that for oil except that, once peak production has passed for a natural gas field, production declines much more rapidly than for a depleting oil field. Combine this supply picture with the fact that, in the United States, recently built electricity generating capacity is fueled by natural gas, and the potential for energy crisis triggered by declining natural gas reserves becomes apparent (Greene, 2004). Add to this picture that natural gas serves as a major feedstock for creating plastics and synthesizing agricultural
fertilizers, and the potential for widespread economic impacts and even food shortages also becomes clear (Greene, 2004; Heinberg, 2005, chap. 5). Some suggest that areas such as North America that face declining natural gas production may be able to rely on natural gas shipped by tanker. This proposition would require heavy infrastructure (and, therefore, energy) investments, not to mention that the process of super cooling and shipping this gas would negatively impact the net energy we could harvest from these resources (Darley, 2004; Heinberg, 2005, chap. 4).

Oil shale and oil sands as sources of liquid fuels have their own net energy and environmental costs. These sources are inefficient in terms of net energy profit as compared to liquid petroleum. It is likely that exploitation of some of these deposits will continue to occur as conventional oil supplies decline, but they will not make up net-energy-wise for conventional petroleum reserves (Heinberg, 2005, chap. 4; Hirsch, et al., 2005, pp. 40-42). What is more, the processing of oil sands releases a great deal of carbon dioxide, something we do not need more of in our atmosphere according to the scientific consensus on climate change (Guggenheim, 2006; IPCC, 2007; Orr, 2009).

Optimists often cite energy efficiency gains over time, noting that, as technology improves with time, we get more work done with lower quantities of energy (see for example Huber, 2002; Lomborg, 2001), but it is important to note that efficiency means little in the depletion picture without reduced total usage. With worldwide population growth and newly emerging industrial nations, the total global energy budget was rising quickly prior to the 2008 global economic downturn. Rising efficiency has also been correlated with increased energy density of primary energy sources. It is likely that increased efficiency levels will be harder to achieve if we must rely on renewable energy sources and coal – both of which offer opportunities, but at reduced energy density levels (Heinberg, 2005, chap. 4).
Some experts cite large reserves of coal as a help in balancing our future energy budget (see Hirsch, 2005, pp. 43-44). Coal can be liquefied to produce synthetic petroleum (Hirsch, 2005, pp. 43-44, 78); but, as with oil shale and oil sands, we have little to no infrastructure globally for refining this liquid fuel (Hirsch, 2005, pp. 78-79). Furthermore, dependence on coal for transportation – even if we could get enough processing plants and filling stations in place – would require massive mining and contribute heavily to climate change – and we would be relying on yet another depletable source of energy for our transportation, and one much less energy dense than petroleum. Furthermore, future heavy reliance on coal as a source of transportation fuel and/or for electricity generation means almost certain climate catastrophe.

The availability of dense, convenient sources of fossil fuel energy has increased the historical inertia of industrialism, and use of fossil fuels by relatively rich nations and people has contributed to the ever increasing concentration of wealth and power that is destabilizing the global economy. But fossil fuel depletion is likely to play an important role in raising possibilities – even mandates – for social change. If fossil fuel dependency proves to be the Achilles heel of Western industrial hegemony, economic growth (required for the global economy to avoid collapse) will prove unsustainable. Given the central role of fossil fuels in the late capitalist global economy, peak oil and gas are among the leading contributing factors to the instability and unsustainability of the current political economy.

**The Structural Crisis of Capitalism**

According to Nobel Prize winning economist Joseph Stiglitz and path breaking sustainability-oriented economist Richard Douthwaite, globalization has created an unstable economy that is highly susceptible to crisis (Douthwaite, 2004, pp. 118-119; Stiglitz, 2002, p. 6). Writing in 2009, political economist Damien Cahill noted:
In the space of a year the unthinkable occurred. What began as a collapse in one segment of the U.S. housing market has spilled over into a crisis of the global financial system. In response, the governments of two of the world’s most powerful capitalist nations, the U.S. and Britain, have nationalized major financial institutions, reversing the privatization trend of the last two decades. French President Nicholas Sarkozy proclaimed, ‘Laissez-faire is finished.’ Dominique Strauss-Kahn, head of the International Monetary Fund (IMF) – which requires developing nations to impose neoliberal structural adjustment programs on their citizens in order to qualify for loans – laid blame for the crisis on ‘not enough regulations or controls.’ (Cahill, 2009, p. 35)

It seems that the neoliberal project of fostering free trade, privatization, and globalization in what was deemed to be a self-regulating market, instead of promoting stability, has delivered up a major crisis that threatens the existence of capitalism as the dominant form of modern political economy.

Deregulated, free market capitalism is consuming its foundations. Production has been outsourced to the Global South while buying power has been concentrated in the U.S. and other industrial countries (Kaplinsky, 2005, pp. 164 & 178-180). Workers who produce products see their incomes eroded by economic pressure for low cost production while buyers, concentrated in particular in the U.S., maintain their spending in an atmosphere of declining real wages by accruing ever more debt. According to William Greider,

*The present regime is pathological fundamentally because it broadly destroys consumer incomes while it creates the growing surfeit of goods …. Greater social equity is consistent with and, indeed, required for a sound and expanding economy: when rising incomes are broadly distributed, it creates mass purchasing power – the rising demand that fuels a virtuous cycle of growth, savings and new investment. When incomes are narrowly distributed, as they are now, the economic system feeds upon itself, eroding its own energies for expansion, burying consumers and business, even governments, in impossible accumulations of debt. (Greider, 1997, p. 321)*

The fact that global energy producers will be able to capture ever higher proportions of profits from production of oil and gas as these resources become scarce further increases the concentration of wealth and power in the global economy, thereby threatening to destabilize the
system by impeding the circular flow of money between consumers and producers. This circular flow is necessary for the continual consumer purchasing that keeps the global economy afloat.

Several important factors have combined to produce a crisis in the financial sector and a global recession (see Greider, 1997; Wallerstein, 2008a). These include:

- The concentration of wealth and buying power that manifests in forms of overproduction and underconsumption emblematic of narrowing possibilities for participation by many people in the money economy, a phenomenon that jeopardizes the long term growth of the system;
- Deregulation of banks that has allowed excessive risk taking in institutions so large that their failure could destabilize the entire global financial sector;
- Over-indebtedness of individuals as real wages have declined (particularly in the United States) and over-indebtedness of entire nations (foremost among these the United States);
- Depletion of resources requisite to economic activity and growth; and
- Shrinking margins for possible profits as globalized competition has reduced prices for many commodities and products.

Heavy debt loads borne by consumers and nations, the decline of ecosystems, and the depletion of resources that serve as the global productive base have combined to make the current downturn especially challenging to reverse (Orr, 2009). When we add to this list of challenges the fact that Keynesian methods of priming the economic pump through government spending are unlikely to generate the desired effects in a globalized economy because money spent in one nation quickly leaks away into other areas of the global economy (Douthwaite, 2004, p. 119), we see that, as suggested by sociologist and world-system theorist Immanuel Wallerstein (2008a, 2008b), the current crisis of capitalism may indeed be the crisis that signals the beginning of the
end of capitalism itself. According to Stiglitz (2009), it is the “the belief that markets are self-regulating and that the role of government should be minimal” that created the platform upon which the factors of economic collapse have converged.

Using the financial sector as a prime example, Thomas Homer-Dixon cites tight coupling among institutions, nations, and subsystems of the global economy as another important source of economic instability:

Any bank faces a fundamental mismatch between the time frames of its liabilities and assets: although its customers’ deposits can be withdrawn quickly, its loans are usually invested for long periods…. [There are also] risks arising from the soaring connectivity, speed, and complexity of the international financial system. Today’s communication technologies have so increased the number, tightened the coupling, and boosted the pace of transactions within globalized markets that once a destabilizing feedback loop – like a stock market crash or a run on a weak currency – takes hold, it can spiral into a crisis before policy makers can respond, and then it can cascade outward to affect other economies far and wide…. Today, the international financial system resembles a huge, crowded theater that’s vulnerable to fire…. Speculative capital can be moved from one economy or currency to another with the click of a computer mouse, which means that everyone can converge on the financial system’s exits simultaneously. But only those who escape first win, and investors and speculators are terrified of being left behind with a worthless stake in an imploded currency or economy. (Homer-Dixon, 2006, pp. 182-183)

Add to these instabilities the fact that a large real estate bubble was created in recent years in the United States, largely due to low interest rates and easy credit. Homebuyers during the bubble years made risky purchases and assumed adjustable rate mortgages with their ability to repay resting on the assumption of rapid and never ending increases in home values. Predatory lending practices contributed to the home buyers assuming dangerous levels of mortgage debt that, in an economic downturn, would lead to widespread foreclosures, as has proven the case since fall 2008. Deregulation in the banking sector laid the groundwork for risky mortgages to be repackaged as mortgage backed securities and widely marketed and sold as stable investments,
when in fact these securities were very risky investments indeed. The collapse of the real estate bubble in the U.S. triggered the severe global recession that began in fall 2008.

Global banks have also been participating in what amounts to a global casino using complicated financial instruments such as derivatives and credit-default swaps to gamble with their assets. According to Joseph Stiglitz (2009), in the global casino economy, “the problem is that, with this complicated intertwining of bets of great magnitude, no one [can] be sure of the financial position of anyone else – or even of one’s own position.” Banks and investors were able to take huge risks for huge returns while the lack of transparency in the system hid the dangers from average citizens and while investment banks and stock brokers encouraged the investment of pensions and other funds critical to social welfare into this temporarily highly profitable but ultimately extremely fragile system.

We will explore below how lending policies of the Bretton Woods institutions also create instability within the national economies of many nations and how this instability compounds the fragility of the world-system. At this point, it is important to understand that capitalism itself is proving inequitable, unreliable, and unsustainable as a global system of production and distribution (Douthwaite, 2004). Therefore, as more and more people are drawn into dependence on this system for access to the necessities of life, the world’s populations are finding themselves in an increasingly perilous position.

We now turn our discussion to exploring how and why people and entire nations become dependent upon the capitalist economy – and why they find it difficult to impossible to reverse this dependency once it is established. We begin with a discussion of enforced dependency.
The Concept of Enforced Dependency

The concept that I call *enforced dependency* is not entirely new, but thusly named as a distinct concept, I believe it can offer opportunities for fresh insights on the phenomenon of globalization. In particular, the concept of enforced dependency provides a lens for understanding the weak points within the structure of global capitalism, particularly those that relate to its long term socio-ecological and economic sustainability. In this section I define enforced dependency as it is constructed and as it functions in multiple arenas within the broad phenomenon of globalization.

Enforced dependency is a form of reliance upon external resources or externally created conditions. For such dependency to function as enforced dependency, it must, once established, progressively undermine the self-sufficiency and resilience of the dependent person, community, institution, or government, making the dependent party increasingly vulnerable to exploitation. The initial conditions of enforced dependency are often established through colonialism or imperialism. The “enforcement” of enforced dependency derives from the increasingly dangerous and/or destabilizing results that would entail from severing the dependent relationship. Under conditions of enforced dependency, the resiliency of the dependent party decreases progressively over time. Typically, dependent parties are also progressively co-opted into supporting the system of enforced dependency upon which they have come to rely, even as the system progressively robs them of freedom, independence, and resiliency. As the dependency deepens, the social power of dominant people, institutions, or governments who provide the resources or create the conditions that enforce dependency increases with regard to dependent parties. Dominant parties may increasingly constrain the decisions and actions of dependent parties in order to enhance their opportunities to gain material and financial wealth and increase
their social power. Though dominant parties may gain substantial wealth and power through enforced dependency, over the long term, their own resiliency may be negatively impacted as the socio-ecological capacity of dependent parties to serve as sources of wealth and power for dominant parties declines.

Thomas Homer-Dixon describes the process of what I call enforced dependency and articulates how it interfaces with the Gramscian cultural hegemony (1971/1999, pp. 57-58) of the late capitalist paradigm and with Marcusean repressive desublimation (1964):

We find it far easier to play by the rules if we actually believe in the legitimacy and reasonableness of the larger system that lays down those rules. We become invested in the capitalist worldview. Without it, our modern world wouldn’t make much sense at all: we wouldn’t know our social and economic roles, and we’d have difficulty connecting and communicating with people. We realize, too, that it’s senseless to challenge openly our economic system’s overarching logic because we’d be challenging the source of our own paycheck – the goose that laid the golden egg, so to speak. The basic truth of this economic arrangement is crystal clear to everyone: the interests of business prevail over all others. So our economic system generates pervasive insecurity; this insecurity impels us to play by the rules; our need to play by the rules encourages us to find these rules morally legitimate; and our belief that the rules are legitimate creates a huge obstacle to changing them. For many of us, the denial is entirely rational. (Homer-Dixon, 2006, pp. 217-218)

We can view enforced dependency as a central theme (in the Freirean sense) of late capitalism. Freire advocates consciousness building in critical pedagogy through identifying and critiquing oppressive themes that pervade social reality. The process of critiquing these themes serves as an avenue for praxis toward resolving the contradictions of capitalism and creating new ways of producing, distributing, and being in the world (Freire, 1970/2000, chap. 3). The concept of enforced dependency is used throughout this dissertation as a tool for both analyzing unsustainable systems and for suggesting alternatives to them.

As globalization extends its reach into new areas of life and new communities, systems of local self sufficiency and decision making – that are also often comparatively sustainable – give
way to systems of economic and social dependency upon money and the globalized economy (ISEC, 1993; Norberg-Hodge, 1991/1992). This widespread dependency of societies upon the very systems that oppress them serves to increasingly entrench hegemonic forces and to add increasing momentum to the trajectory of globalization itself (Miller, 1999). Path dependency with regard to past and current choices also contributes to the entrenchment of enforced dependency over time because, once a community or society has made or been forced to make some critical choices – monetizing their economy is one of these – future choices become based on the foundations created through these past decisions. Reversing past decisions becomes increasingly difficult because doing so would create widespread social and economic dislocation. Forms of capitalist global integration that create and enforce dependency are also characterized by path dependency in that, once a community or society is folded into the global economy, the people find it nearly impossible to extract themselves from the capitalist system. The post-war Green Revolution in agriculture provides an excellent example of path dependency.

Elucidating the sources of enforced dependency operating within society means constructing a critique of globalization that focuses attention specifically on those institutions, practices, cultural phenomena, and ideologies that foster dependency at multiple levels within the world-system. Stiglitz (2002) defines globalization as “the removal of barriers to free trade and the closer integration of national economies” (p. ix). We begin with this definition while noting that the constituents of globalization as a phenomenon also specifically include all of the dependency enforcing institutions, practices, cultural phenomena, and ideologies discussed below. We now turn our attention to applying the world-system approach of Immanuel Wallerstein as a vehicle for understanding the overarching phenomena that characterize globalization.
**Industrial Capitalist Production as Dependency in the World-System**

In this section, I argue that enforced dependency infuses late capitalist systems of production and that these systems of production have assumed global scale so that modern political economy operates as world-system. In his classic work *The Great Transformation*, Karl Polanyi (1944/1957) documents how, during the eighteenth and nineteenth centuries in England, the capitalist mode of production and capitalist political economy replaced traditional means of production and distribution within society. He notes that, within traditional societies worldwide, economic activity served to build and maintain social relationships and to satisfy social goals. Social cohesion and mutual benefit were secured through practices of redistribution of produced goods. Under the new capitalist mode of production and trade in England, society was made to serve the self-regulating market (chap. 3-6). According to Polanyi, factory production (which also often required use of energy-dense fossil fuels) was an essential precursor to this monumental shift (1944/1957, pp. 40-41 & 57). It is important to note that the rise of the market as the primary focus for social organization and production had shaped the character of colonial relationships as well.

Capitalist ideologues have argued that the impetus for detailed division of labor in capitalist production, as distinct from the social division of labor, as discussed by Braverman (1974, p. 70) and others (see also Ollman, 1971; Wallimann, 1981, chap. 6), is about efficiency, but it is not. It is about control of the production process and the centralization of that control with a new class of factory owners and managers. Kropotkin (1902/1989) recognized the social

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21 The social division of labor, according to Braverman (1974, p. 70), is differentiation of work based upon age, sex, and physical strength. Walliman (1981, p. 89) and Ollman (1971, p. 160), drawing upon the work of Marx, emphasize that the division of labor in capitalist society, unlike the social division of labor, is characterized by a division between mental and material labor. Ollman (1971) further states that “the division of labor whereby people do only one kind of work and rely upon others to do whatever else is necessary to keep them alive is a more inclusive social expression of man’s alienated productive activity” (p. 159). It can be argued that alienated and detailed division of labor enforces dependency in the sense discussed in this chapter.
power inherent in the craft guilds of medieval European cities wherein artisans directly controlled the production process and also controlled the entry of new artisans into particular crafts (chap. 5-7). By contrast, under the capitalist paradigm, the work of artisans was broken down into myriad different pieces so that anyone could be hired to do it, or better yet, machines could do it independently. This change wrested control away from artisans (Kropotkin, 1902/1989, chap. 7-8), who had been dispersed throughout society, and concentrated it in the hands of capitalists. This great transformation of society created new forms of social dependency in England that were early incarnations the enforced dependency that would come to characterize the world-system and that would reach its apex during late capitalism.

The concept of the world-system is perhaps most closely associated with sociologist Immanuel Wallerstein (1974, 1976, 2003, 2005, 2006, 2007, 2008a, 2008b). In his world-system approach to global political economy, Wallerstein explains how and why the capitalist system has produced an uneven form of development comprised of core, periphery, and semi-periphery nations and regions. The core areas are those that have benefited the most from capitalist globalization. These nations and regions are able to exert their influence on other parts of the world-system in order to capture disproportionate shares of international wealth and power. Periphery zones often had been colonies of core nations from which colonizers extracted natural resources needed for industrial production. As a result of their colonial history, these areas lack strong central governments and diverse economies. Semi-peripheral nations are exploited by core powers while themselves exploiting the periphery zones; these nations and regions often embody tension between a strong central government and a domestic landed elite. Within the world-system of late capitalism, relationships among nations and regions resemble those of the colonial era, but without direct political control of the periphery by the core (Wallerstein, 1974, 1976). It
is important to note that, as part of the crisis of late capitalism, core is becoming less a geographic reality as the power of transnational corporations and global finance increasingly eclipses that of nation states (see Harvey, 1989).

Within the world-system, nations and peoples who were conquered during the worldwide wave of European colonization remain at a competitive disadvantage in the globalized world (Wallerstein 1974, 1976). The purpose of a colony to an empire after all is not to achieve its own self-sufficiency and resilience; it is to provide resources for the colonizing power. It can be argued that the power relationship between colonizer and colonized is intentionally maintained at an imbalance wherever possible by the forces of empire (Miller, 1999). The essentially extractive economies of the colonies embody a more or less direct throughput of energy and matter with little diverse use and reuse of resources and human capital. Jane Jacobs (2000) emphasizes how diverse uses and reuses of matter and energy in an economy are essential to its diversification and resultant resiliency, just as the diverse use and reuse of matter and energy flows is critical to development of diverse and resilient ecosystems (pp. 43-63). Economic relationships, structured as they have been between colonizers and colonies, have offered few possibilities for colonies to develop economic resiliency and, thereby, to revoke their peripheral status. Even after independence was won by or granted to former colonies, they were left at a disadvantage in terms of economic diversification and resilience, industrial development, knowledge relevant to modern technology, modern infrastructure development, ownership of intellectual property, and more. According to Stiglitz, African aspirations following independence have gone almost entirely unfulfilled (2002, p. 5). The Global South has been invited to play in the global economy, but the field has remained tilted in the direction of those who inherited the legacy of the colonizers (Miller, 1999).
Fossil fuels have played an important role in creating and deepening the divisions among core, periphery, and semi-periphery zones. Beginning with the industrial revolution and continuing into the late capitalist era, energy-dense fossil fuels, offering initially high net energy yields, created incredible opportunities for increasing human activities at very little cost, especially for those nations with abundant domestic supplies of these resources. First coal and later petroleum increased the speed and efficiency with which new lands and peoples could be colonized, in turn yielding up an increasing variety and quantity of natural and human resources to fuel the fires of capitalism and concentrate the wealth of the world in the hands of the colonizers. Those who had the early lead technologically were best positioned to take advantage of these new energy sources (Heinberg, 2005, chap. 2).

In order to understand the intensity and global pervasiveness of the capitalist drive to enforce dependency, it is important to understand that late capitalism is in fact a world-system. Increases in international political and economic equity and localized gains in self-sufficiency would fundamentally alter the character of the system and its ability to serve the dominant through concentrating wealth and power in their hands. Socio-economic equity and sustainable self-sufficiency would cancel the dependency enforcing factors of the world-system and unchain the masses from service to a system that entraps and depletes them through channeling their energies and diverting their resources to serve dominant groups.

We now turn to explore how several important aspects of the political economy of late capitalism contribute to enforcing dependency within late capitalist globalization. Each of the aspects of the system discussed below interrelates in numerous ways with other aspects of the overall system. Therefore, specific aspects of the system identified here can serve as various lenses through which we view the whole of late capitalism as a system of enforced dependency.
Additional dependency enforcing aspects of the system exist; however, the following discussion addresses aspects of late capitalism that create some of its furthest reaching effects, both geographically and in the sense that these aspects serve as deeply structural foundations for the enforced dependency of neoliberal globalization.

**How Money and Debt Enforce Dependency**

According to economist Richard Douthwaite (2004), the money system creates enforced dependency because currency is supplied from outside the community, which requires communities to sell to outside markets at prices determined externally (p. 116). Our current money system also enforces dependency because it is based on debt (Douthwaite, 1999a, chap. 1, 2004, p. 118; Rowbotham, 2000, pp. 90-102).

The debt-and-interest-based money system requires infinite economic growth in order to avoid currency collapse so that, once we are hooked on money, we are hooked on economic growth. With debt-based money as a foundation for the global economy, growth is requisite for nations and for the global economy as a whole. Since infinite economic growth within a limited system (the earth) is a defining contradiction of the capitalist world-system (Daly, 1999; Douthwaite, 1999a, pp. 25-26, 1999b; Kovel, 2002, chap. 3-4 & 6), it is important to understand how and why money is created in local, national, and global contexts as well as to understand possible reforms and innovations in the creation and use of money that could encourage and support sustainable living. We will also explore how the modern debt-and-interest-based money system creates unsustainable dependence on the self-destructive global economy that is consuming its own base as a function of economic growth (Kovel, 2002, chap. 3-4 & 6). Richard Douthwaite’s *The Ecology of Money* (1999a) explores how the way modern money is created influences the social and ecological effects of its use. Douthwaite’s arguments call for, among
other things, (re)localization of some forms of currency creation and use as a strategy for sustainability. Much of our discussion in this section draws upon Douthwaite’s arguments.

In our efforts to comprehend how the money system contributes to enforced dependency, we begin with an explanation of the functions of money. Money serves three key purposes: it serves as a medium of exchange, as a store of value, and as a unit of account. These functions can conflict with each other. In an inflationary environment when prices are rising, the store of value function of money decreases, and people tend to spend money rather than saving it since they assume prices will be even higher later. In a deflationary environment when prices are falling, the medium of exchange role of money is curtailed. People see money as a good store of value and tend to hold onto it since they assume they will be able to buy more with it later. In both cases, the reactions of people to price changes tend to reinforce the given cycle of inflation or deflation and further inhibit one of the functions of money. Therefore, modern money does not function optimally and simultaneously as both a medium of exchange and a store of value (Douthwaite, 1999a, pp. 11-12, & 27-28).

Money functions no better as a unit of account. An analysis of the processes of cost-benefit analysis illustrates this point. Since money has no fixed value with regard to anything tangible, its use as the basis for quantification in cost-benefit analyses opens the door for manipulation of these analyses to suit desired outcomes. Since cost-benefit analysis relies on the conversion of future costs and benefits to net present values (a process of “discounting” estimated cash flows from future costs or benefits by a chosen rate of compounded interest), present costs and monetary profits are emphasized over benefits and costs that could potentially occur in the long term. The rate at which profits made today are assumed to be able to grow or at which future costs lose their economic significance (the discount rate) is a crucial factor in
coloring these analyses to encourage or discourage a given project or extractive enterprise. In cost-benefit analysis, present profits are favored over similar profits foreseen in the more distant future, a function of the time value of money estimated through use of the discount rate. The tendency to value present over future profits intensifies with increases in discount rate used in the analysis. Cost-benefit analysis can be used to justify projects that will yield profits now, even if they are projected to have significant costs in the distant future (Douthwaite, 1999a, pp. 29-30). In cost-benefit analysis, it is also difficult to include costs or benefits such as human and environmental health, aesthetics, ecosystem integrity, cultural survival, and long term sustainability that can be difficult or impossible to quantify monetarily (Moore, 1995).

The time value of money, along with the dependency of modern people on money, create a framework for decision making in which people are encouraged to exploit and consume each other and nature for short-term financial gain – especially when the costs of doing so are unquantifiable or are likely to occur in the long rather than short term. The process of exploitation for profit further distances people from each other and nature and thereby increases dependency on money as a means to satisfy material, social, and service needs, and this increased dependence in turn drives and further deepens the cycle of exploitation for profit. Modern money contributes to enforcing dependency upon the capitalist system. In today’s societies, since most of us do not own or have access to enough land or other resources to produce for ourselves what we need to survive, we are dependent upon money as the vehicle through which we satisfy many of our basic needs and aspirations. Therefore, we are dependent upon the institutions that create the money we need for day-to-day life.

Commercial banks create most of modern money by lending out more money than they have on deposit, a process known as fractional reserve banking. Money created in this way exists
purely as a function of borrowing. When loans are repaid, the money created by these loans ceases to exist. People must continually engage in borrowing in order to maintain money in circulation (Douthwaite, 1999a, pp. 16, & 21-22; Heinberg, 2005, pp. 187-190; Rowbotham, 2000, p. 90). The process of fractionalization is repeated with borrowed money when money lent by one bank is deposited into another, in which case money that was created from nothing in the first place is treated as a tangible basis for further fractionalization (Douthwaite, 1999a, p. 20; Rowbotham, 2000, p. 15). The assumption is that all depositors will not converge on a bank at once demanding the full value of their deposits (Douthwaite, 1999a, p. 17; Hudson, 2005, p. 18).

The loan-to-deposit ratio through which commercial banks create money is typically governed by the central bank to which the commercial banks report. Central banks use this and other mechanisms to control the money supply in an effort to control inflation/deflation (Douthwaite, 1999a, pp. 18-20). The value of modern money is determined solely by its acceptability to others – it is backed by nothing but acts of faith (Douthwaite, 1999a, p. 21; Heinberg, 2005, p. 188).

Due to the way most money is created in this debt-and-interest-based system, we are directly or indirectly dependent upon the existence of debt in order to have money available at all. When we realize that debt is actually what allows us to have money in circulation, it comes as no surprise that borrowing is encouraged so heavily in consumerist societies. As anyone who has ever been in debt knows, the need to service the debt and the consequences that would follow from not doing so constrain one’s choices and actions. As people living in a society with a debt-and-interest-based money system, we are highly dependent on a form of money that allows us to obtain needed goods and services while, at the same time, the very need for this money and the socially entrapping way that it is created impinge upon our life choices and actions. In reality,
most of us have little choice but to participate in, and thereby support, the money system, and the participation of each one of us strengthens both the overall system and its ability to imprison us.

Not only are we dependent on a money system that encourages and reinforces our dependency, the mechanisms within the overall economic system that support the value of money and prevent currency collapse are themselves quite fragile. The potential for economic depression is ever present since many circumstances can create an atmosphere in which people are unwilling to take out new loans. Unless effective measures are taken in time as a downturn threatens, layoffs typically result from the slowing of economic activity and the concomitant reduction in the overall supply of money. Layoffs further deepen the economic downturn and increase the unwillingness of people to borrow money. The velocity of money circulation in such an atmosphere is likely to drop since even the wealthy may feel uncertain of their economic future and hold onto their money, thereby deepening the cycle still further. The system that results from creating money through debt is therefore an inherently unstable one upon which to build an economy (Douthwaite, 1999a, pp. 22-23).

One particular form of debt, national debt, also influences the money supply and creates its own forms of enforced dependency. National debt entails the government going into debt to cover the difference between taxes levied and expenditures made. Michael Rowbotham describes the process of using government bonds to finance the national debt:

> When government bonds are bought by the nonbanking sector, funds held in various savings institutions (pension, life assurance and trust funds etc.) are brought back into everyday circulation, the sums being re-distributed into the economy through public services and other spending. Thus, monies relied upon for future payments are recycled into the economy, in parallel with a debt undertaken by the government, and registered against the nation’s assets. However, when government bonds are bought by the banking sector, additional money is created since the purchase is made against, or using, the bank’s fractional reserve. Just as with private/commercial debt, additional bank credit is thus created and new deposits of bank credit result. (2000, p. 96)
The mechanism of national debt used to finance public sector activities, including social services, creates interdependencies among the savings and banking institutions, the national government, and citizens for whom government services are performed, and all of these entities are also made dependent upon economic growth to generate needed tax revenues to keep the national debt from spiraling out of control, which could trigger a currency crisis.

Dependency of individuals, communities, and entire nations on debt-and-interest-based money is also enforced through trade. In order to assemble the means to trade or otherwise engage in the global economy using commercial-bank-created money, one must borrow funds from a commercial bank and agree to repay the loan plus interest, or one must sell goods and/or services to others who pay with currency. Profits from lending activities of commercial banks flow to their central offices. Therefore, repayment of loans held by nonlocal banks creates a systematic drain on local economies through interest paid and through the resources of the local economy being traded away for money to service these debts (Douthwaite, 1999a, p. 21; Shuman, 2000, pp. 107-120). A co-dependency is established through which individuals, communities, and even nations – through their borrowing activities – help produce profits for corporate banks upon which they depend for access to the money they need to provide for themselves and to satisfy their economic aspirations. This co-dependency is further deepened by modern living patterns in which people are removed from land and other ecosystemic sources of their own sustenance and most often must rely upon global supply chains through which they purchase the necessities of life.

To summarize, we have noted several ways in which debt-and-interest-based money contributes to enforced dependency. The economic system, due in part to the way money is created, is inherently constraining to human choice and activity and is always vulnerable to self-
reinforcing economic downturns. The money system itself also tends to concentrate wealth and power in large banks that continually siphon away the material wealth of communities to which they do not belong. The loans provided by these banks do allow individuals and groups to engage in trade and other economic activity through which they might support themselves and benefit their communities, but the fruits of a significant portion of their efforts flow away from them and their local communities in the form of repayment of loans to non-local corporate banks (Shuman, 2000, pp. 107-120). We see that the ability of these banks to create money therefore represents an important form of power and control. Any person or entity willing to accept a given currency increases the power and control of the nation, institution, or organization that created it (Douthwaite, 1999a, 2004, pp. 115-116). The need to obtain money for purchasing necessities, in particular, creates important forms of social dependency since necessities such as food and water are just that – they are required for life itself.

International finance and debt also contribute in important ways to a multivalent world-system of enforced dependency. International debt contributes to creating and maintaining an imperialist political economy which, for the former colonies of Western powers, creates relationships and experiences similar to colonialism but without the overt political conquering of lands (Miller, 1999). We will explore below in the section on the Bretton Woods paradigm how structural debt in the Global South contributes to political and economic enforced dependency of Global South nations on the world-system of globalization (Rowbotham, 2000). We will also consider below how dollar hegemony, initially enforced through the Bretton Woods system, produces economic benefits for the United States at the expense of other nations and thereby contributes to ultimately unsustainable forms of co-dependency in international finance and debt.
When we understand how money is created and used, we begin to see how the banking system is operating under a rentier’s regime through which the financial sector skims a portion of the interest created from the debt-and-interest-based money system – a system that was made possible through government. By virtue of their ability to engage in mortgage lending, banks also hold title to vast amounts of real property which can be claimed in the event of borrower default (Rowbotham, 2000, p. 186).

We now turn our attention to economic growth as a dependency enforcing aspect of the capitalist system.

**Economic Growth**

As we have seen, the industrial capitalist mode of production and debt-and interest-based creation of money undergird the tendency of global capitalism toward exploitation and its requirement for growth, both of which are unsustainable. As I argue above, once we are reliant upon money to provide for our needs, we are also reliant upon the growth required to keep that money in circulation. Interest must be paid on bank-created money, which means that the value of sales in the economy must grow in order to avoid system collapse. The growth necessary for repayment of loan principle plus interest can be realized through inflation, through increased output, through capturing market share from others, or through a combination of these strategies. The money supply must also grow continually in order to accommodate the overarching need for economic growth within the world-system and to allow interest to be paid (Douthwaite, 1999b, chap. 2).

Since growth in output cannot continue infinitely within the finite ecological system of the earth, the requirement for economic growth that is built into the debt-and-interest-based monetary system is inherently unsustainable (Daly, 1999; Douthwaite, 1999a, p. 25, 1999b,
chap. 15; Homer-Dixon, 2006, pp. 200-201; Kovel, 2002, part I; Meadows, Randers, & Meadows, 2004). Vandana Shiva claims that growth is “theft from nature and people” (Shiva, 2000, p. 1). Every job, every product – even in the “information economy” – relies on the extraction and use of natural resources, including human resources. The growing money supply, that is a structural requirement of the system, is the result of continual expansion of money lent into circulation. Servicing the loans that create ever growing amounts of money requires continually expanding production and, therefore, continually expanding use of nature and people in the process of production. The global growth economy is currently bumping up against both natural limits and the limits of the capitalist system to contain its own contradictions.

We get a clearer picture of the exponential character of the growth built into the current capitalist system through examining the rule of 72. This mathematical rule of economics allows one to estimate the time to double of an interest-earning investment. It states that 72 divided by the interest rate per period equals the number of periods to double. Therefore, an investment accruing eight percent interest annually would double in nine years, and if the doubled money were to be left invested at the same rate, it would double yet again in another nine years. The rule of 72 applies to debt as well. A debt on which interest is owed that is left unpaid will double in size in the same way as an investment earning interest. According to the International Labor Organization (2005), the global economic growth rate for 2004 was five percent which means that, at that continued rate of growth, the global economy would double in slightly less than 14 and a half years. When one considers that all future doublings occur based upon an exponentially expanding base, the power of the required growth in the global economic system becomes evident.
This need for growth is also a primary driver to the neoliberal obsession with opening markets in parts of the world that have not yet been fully dominated by commercialized living. It is also a primary driver behind the systematic destruction of subsistence cultures wherein one could live – albeit usually very modestly in terms of material wealth – independently from the money economy. When systems of subsistence are destroyed, increasing numbers of people are forced into dependency upon the modern capitalist system of commercial distribution of commodities. As Shiva (2005) claims, growth is theft from people of systems of self-determination and independence and the replacement of these systems with ones of enforced dependency. Left unchecked, global capitalism will continue to destroy the few remaining subsistence cultures in an effort to satisfy the global economy’s appetite for new consumers and natural resource inputs.

The push for growth that drives the opening of new markets globally also requires that people everywhere be subjected to a barrage of advertising to convince them to purchase and consume ever more products. In the United States, increased consumption has been heavily encouraged in recent decades, though this spending spree has been fueled by crushing levels of consumer debt (Clark, 2005, p. 11). The easy credit provided to consumers in the United States temporarily ameliorated the effects of global overproduction while also continuing and deepening enforced dependency globally.

Furthermore, technological advantages that have developed historically mean that growth is not evenly distributed in the global economy. Producers who lag behind competitors in use of new technologies tend to see their profit margins shrink when compared to early adopters who innovate successfully because the new production methods typically decrease production costs and place downward pressure on prices. In such an atmosphere, only very large producers who
have been able to innovate early can survive the heightened competition. These large producers then capture market share by driving their former competitors out of business, and they further the tendency of the global market to force everyone everywhere to use many of the same materials and products (Douthwaite, 1999b, chap. 2, 2004, pp. 116-117). These monopoly tendencies decrease the resilience of local communities to both economic shocks and ecological disturbances. In food production, for example, local plants and plant varieties and locally adapted breeds of animals disappear, and the diversity they represent is often lost forever. This lack of diversity in production creates dangerous vulnerabilities, as demonstrated by the Irish potato famine in the nineteenth century. It also places increasing pressure on a defined set of natural resources. In more localized economies that existed prior to globalization, local materials and local flora and fauna were used to satisfy local needs. Today, even for those local resources that remain, local production for local use is often uneconomic when compared to purchasing materials and products from large global suppliers.

Of course, this process of creating global monopolies and monocultures depends upon the availability of cheap fuel for transport, a precondition whose satisfaction is increasingly in doubt (Campbell & Strouts, 2007, part 1; Deffeyes, 2001; Douthwaite, 2004, p. 118; Heinberg, 2005; Kunstler, 2005; Roberts, 2004; Simmons, 2005). As noted above, fossil fuel dependency may yet prove to be the Achilles heel of modern globalization since global production of petroleum is likely to peak prior to 2015. If we are to continue the economic growth on which the global economy is based, we will need an ever expanding supply of dense energy that is convenient to transport and store and capable of fueling our transportation infrastructure – and it appears increasingly unlikely that we will discover a means to capture sufficient energy sources that possess these qualities.
The global growth economy concentrates wealth and power while creating dependence. It also creates and deepens dependency while reducing socio-ecological resilience. It manifests path dependence in that, as the system continues through time, changing course becomes increasingly difficult because the cultures, resources, flora, and fauna on which alternate, steady-state, localized living patterns might be (re)constructed are increasingly damaged, destroyed, and exhausted in the process of achieving economic growth. All the while, the capitalist growth economy increases the vulnerability of communities and societies to economic shocks and ecological breakdown.

We now turn our attention to examine in more detail a specific and important source of both loss of resiliency and increasing dependency within the global economy: technological displacement of labor. We will also examine how this displacement drives the need for economic growth.

**Technological Displacement of Labor and Elimination of Subsistence in the Growth Economy**

According to Thomas Homer-Dixon, technological displacement of labor provides an important rationale for the fixation of policy makers and power brokers on maintaining economic growth. He summarizes thusly the logic of economic growth as a remedy for technological displacement of labor:

In essence … the logic underpinning our economies works like this: if we’re discontented with what we have, we buy stuff; if we buy enough stuff, the economy grows; if the economy grows enough, technologically displaced workers can find new jobs; and if they find new jobs, there will be enough economic demand to keep the economy humming and to prevent wrenching political conflict. Modern capitalism’s stability – and increasingly the global economy’s stability – requires cultivation of material discontent, endlessly rising personal consumption, and the steady economic growth this consumption generates. (2006, p. 196)
But, according to Homer-Dixon, “Conventional wisdom [about the role of technology in displacement of workers and as a stimulus for new kinds of jobs] rarely acknowledges the scope and relentlessness of technological displacement of workers” (2006, p. 195). Furthermore, displaced workers do not necessarily get the same pay in new jobs. In the United States, for example, where the manufacturing sector has largely been outsourced, former manufacturing workers have in many cases been forced to seek comparatively lower-paying service jobs (Clark, 2005, pp. 10-11), and those jobs that do offer high pay – in new industries and using new technologies – often require skills and knowledge that displaced workers do not have (Homer-Dixon, 2006, p. 195). Technological displacement of workers may, in the end, prove unsustainable and ultimately destabilizing to the capitalist system. Displaced workers are typically already dependent upon money and the market for fulfilling basic needs, and their displacement typically further narrows their scope for freedom and self-sufficiency. Through technological displacement of workers, control is further concentrated in the hands of business owners and managers who are interested in increasing their own shares of the profits, but in an overarching and long term sense, because the widespread phenomenon of technological displacement of labor erodes the purchasing power of the masses, the relationships of enforced dependency between business leaders and workers are ultimately self defeating to both.

The post-war Green Revolution serves as an example of an especially important form of dependency creation. The industrialization of agriculture contributed to divesting people of access to land as a basis for subsistence, thereby resulting in their dependency upon the money system. This process is, in part, technological displacement of subsistence producers by industrial agriculture, but it is also cultural and political in nature. As we will explore in more depth below, major institutions, rules, and practices of the global economy contribute to self-
perpetuating and self-reinforcing systems of power and exploitation that systematically advantage the capitalist First World over the Global South.\textsuperscript{22}

Technological displacement of labor and modern displacement of subsistence cultures are important sources of enforced dependency globally. Since these forms of displacement place downward pressure on wages and cause unemployment, they contribute to the need for consumer debt in the global economy as a means to maintain demand. Consumer debt, as noted above, is an important source of enforced dependency. By systematically undermining self-sufficiency and reducing wages, technological displacement of labor and modern displacement of subsistence cultures increase the concentration of wealth, power, and social control that enforce dependency of people everywhere upon the global economy.

We now turn to discuss some important aspects of neoclassical economic thought that contribute to enforcing the dependency of global populations.

\textit{The Hegemony of Neoclassical Economics}

One could claim that mainstream economists serve as agents of dependency enforcement. In society at large, the powerful disproportionately control which ideas circulate widely and in high places and, to a large extent, control the approval mechanisms for those ideas that get branded as truth. The vast majority of neoclassical economists have nodded in approval to a system that has created crippling and permanent debts in the Global South, debts that represent failures of modern economics (see Rowbotham, 2000 and Stiglitz, 2002). They have also promulgated the myth of the self-regulating market. We see the folly of this myth amidst the fallout of the crisis of capitalism visible through the lens of the continuing economic downturn and turmoil that began in fall of 2008.

\textsuperscript{22}In chapter five, I will explore in greater depth how the industrialization of agriculture enforces dependency. I will also examine the roles of the industrialization of agriculture in the differentiation of powers within the post-war world-system.
Reliance on incomplete models and statistical instruments that do not approximate complex reality gives economics the appearance of an objective science when, in fact, the very assumptions and rules embedded in the economic system are themselves political. According to Stiglitz (2002), standard formulas used in macroeconomics do not take unemployment into account:

In some of the universities from which the IMF [International Monetary Fund] hires regularly, the core curricula involve models in which there is never any unemployment. After all, in the standard competitive model – the model that underlies the IMF’s market fundamentalism – demand always equals supply. If demand for labor equals supply, there is never any involuntary unemployment…. The problem cannot lie with markets. It must lie elsewhere – with greedy unions and politicians interfering with the workings of free markets, by demanding – and getting – excessively high wages. There is an obvious policy implication – if there is unemployment, wages should be reduced. (p. 35)

According to Rowbotham, the vast majority of academic economic literature contains little to no analysis of debt or money (2000, p. 15). We see from the arguments presented in this chapter that unemployment, falling wages, and the monetary and debt systems are critical factors in enforcing dependency among populations worldwide. Because these receive little scrutiny from academic economists or economists working in government and prominent banks worldwide, we might assume that markets are working perfectly in the view of capitalist elites, or at least that they have generally been doing so.

The IS-LM model of macroeconomics is a useful case in point. The IS-LM model is the standard formula of current macroeconomic analysis used to manage economies through fiscal and monetary policies (Daly & Farley, 2004, p. 278). It contributes to the hegemony of the capitalist order in which capital accumulation is the goal. This model renders issues of environmental and social health, unemployment, distribution of wealth, and dependency indirectly visible at best, and it also indirectly enforces dependency.
The IS-LM model hinges on the concept of achieving economic equilibrium in two areas: 1) savings (S) and investment (I) (the “real sector”) and 2) liquidity preference (L) and money supply (M) (the “monetary sector”) (see Daly & Farley, 2004, chap. 16 for a detailed explanation of this model). All values considered in achieving this equilibrium are monetary values, meaning that many considerations related to intangible human values, quality of life, ecosystemic health, and socio-ecological sustainability are accounted for indirectly at best – through whether and how they affect the money supply and the uses of money in human societies.

In the standard macroeconomic view encoded in the IS-LM model, human beings are regarded as rational economic beings – *homo economicus* – for whom the central questions of value in the choices made by individuals are economic choices. *Homo economicus* is driven by competition to maximize his/her share of goods and services at the lowest possible cost. Choices made by *homo economicus* are not rational in any overarching ethical sense; they are rational only within a narrowly economic view of the world in which capturing material wealth is the only goal that “counts” (see Spretnak, 1997, pp. 219-221). This system of values inherent in neoclassical economics was both history and culture specific to Western capitalist societies, but it has now become encoded in the world-system of globalization.

That the IS-LM model remains a tool of choice among macroeconomists demonstrates the hegemony of capital in management and policy making worldwide. Use of this model as the “workhorse” of macroeconomics (Daly & Farley, 2004, p. 279) means that alternate values to capital accumulation are virtually absent from economic management and considerations of economic policy. What is of most interest to capitalists – capital – receives focused attention in economic decision making while other interests – even those that, left unattended to, ultimately threaten the long term viability of the capitalist order – receive little to no attention.
Perhaps the most important point to understand about the IS-LM model with regard to socio-ecological sustainability is that natural limits and social health and resilience are invisible to the model except in the ways that these limits translate into prices, availability and costs of labor, and other monetized transactions. When the model is unaffected by clear price signals – even in the face of impending socio-ecological disaster – economic equilibrium can be pursued and possibly achieved – if only for a time. This is exactly the process that is occurring with regard to oil and gas. As noted above, we are living off of the draw-down of these natural resources. Price signals are unclear, and when they happen, they occur far too late for us to prepare for living under conditions of constrained supply. Meanwhile, macroeconomic policy makers continue to use tools such as the IS-LM model that are blind to resource limits.

Another aspect of neoclassical economics that belies its hegemonic orientation is the tendency of mainstream economists to subscribe to the cornucopian argument discussed above with regard to oil. This argument holds that when shortages appear, price signals trigger innovation which, in turn, creates substitutes for whatever resource is scarce. In neoclassical economics, therefore, the value of every input to production can be monetized. As members of indigenous subsistence cultures learned long ago, one species of animal or plant or the presence of clean water can be irreplaceable within a culture and an ecosystem. In such a society, the notion of infinite substitutability would be considered insane, but this idea continues to fuel the continued hegemony of the capitalist order today, even in the face of impending and severe shortages of depleting resources that are essential to the modern economy. In modern capitalist society, the idea of infinite substitutability is hegemonic in that it helps perpetuate the existing economic order, but this idea is certainly not sustainable.
The management of inflation and deflation by policy makers is also hegemonically-oriented. A brief explanation reveals this orientation. Inflation is characterized by rising prices; disinflation is characterized by slower than expected inflation, and deflation is characterized by falling prices. Inflationary periods benefit debtors with loans at fixed interest rates because the real value of their repayment drops. Conversely, inflation negatively impacts the real income of creditors. Disinflation tends to positively impact creditors because expected inflation has not occurred, making the value of repayments, in effect, higher than expected. Deflation can benefit creditors so long as it does not continue long enough to cause a depression and greatly increase withdrawals of bank deposits while also causing loan defaults. Both disinflation and deflation typically cause unemployment and lead to a net transfer of national income to creditors (the wealthy and banking interests) (Daley & Farley, 2004, pp. 291-294). Given the constituency of the U.S. Federal Reserve (bankers and other wealthy interests) for example, it is easy to see why that agency demonstrates an anti-inflation policy orientation (Daley & Farley, 2004, p. 301).

Nearly always, it is capitalist elites (those who were able to pursue expensive educational training in elite universities and those who possess or can obtain the capital necessary to increasingly distance themselves from the world’s growing poor populations) who advise highly placed decision makers or who undertake important economic policy decisions such as management of inflation. As members of a hegemonic class, they tend to serve the economic interests of themselves and their economic and social allies, and they employ tools such as the IS-LM model and economic “common sense” such as a strongly anti-inflation policy stance in their advisory roles. This is not to say that all macroeconomists and elite capitalists are part of a vast conspiracy to dispossess the middle and lower classes. Although many knowingly do seek economic advantage through any means possible, including brutal exploitation of other people
and the environment, others engage in the world from positions of power with the intent of maintaining their relative social position but without an explicit intent of inflicting harm. Others are intellectually blinded to the damage done through use of hegemonically informed tools such as the IS-LM model. After all, they learned to use such tools when they were students in respected institutions of higher learning. Whatever the conscious intent behind their actions, elite economic policy makers tend to reproduce and the cultural hegemony of the capitalist order.

In order to have a sustainable world, we must fundamentally change our culture and its systems of valuation and exchange. Formulas such as the IS-LM model that place distance between analyzing the health of the economy and the health of humans and nature are part and parcel of the cultural landscape of neoclassical economics and capitalist society as a whole. One must recognize that economists who use these formulas are embedded in the capitalist culture which, according to the rules which constitute the system, privileges the economic interests of international elites over the wellbeing of others and the health of the environment. This system also privileges mainstream economists who serve the entrenched interests of the economic/political elite over radical economists who advocate change.

We have seen how neoclassical economics is indeed political in that it supports the hegemony of capitalist elites through perpetuating a narrow and hegemonic worldview. We have seen also that the capitalist values undergirding neoclassical economics directly conflict with socio-ecological sustainability in that they promote exploitation and the drawdown of critical resources, and we have recognized the virtual blindness of macroeconomic modeling to issues of socio-ecological sustainability. Given this understanding, one can see why the hegemony of neoclassical economics among prominent economic thinkers contributes to enforced dependency through privileging the worldview and interests of elite capitalists in the global economy. Below,
we will discuss specific examples of how the worldview and interests of the privileged have been encoded in the structures and rules that govern the global economy and enforce dependency.

We now turn our attention to the post-war Bretton Woods institutions and monetary system, both of which are informed by neoclassical economics. We will see how the Bretton Woods paradigm contributes in important ways to enforcing dependency within the world-system.

**The Bretton Woods Paradigm**

In this section, we explore how the post World War II economic paradigm established at the United Nations Monetary and Financial Conference, held at Bretton Woods, New Hampshire, in July 1944, undergirds a global system of enforced dependency. John Maynard Keynes – whose reflationary economics formed the foundation for the New Deal and whose policies are typically credited with ending the Great Depression – is often incorrectly credited as the architect of the Bretton Woods institutions. In fact, his proposal for an International Clearing Union (ICU) was rejected by the American delegation prior to the conference (Rowbotham, 2000, pp. 13, & 37-45). Keynes’ Clearing Union, had it been implemented, would likely have greatly reduced the enforced dependency inherent in post-war international finance and debt. In this section, we will examine how and why debt in the Global South is a structural feature of the Bretton Woods economic paradigm.

We begin our exploration by contrasting what might have been with what in fact are the central organizing institutions and features of the Bretton Woods paradigm. The Bretton Woods conference served as a forum for the allied nations to devise strategies and institutions to aid in financing the rebuilding of Europe after the war, to facilitate post-war international trade, and to prevent future economic depressions. At this time, most colonies of the industrialized West had
not yet gained independence (Stiglitz, 2002, p. 11). The Bretton Woods delegates created the framework for the World Bank and the International Monetary Fund (IMF), two institutions that have dominated Global South development ever since. The IMF, which began operation in 1945, was created to provide an international financial pool of funds upon which member countries could draw to help resolve temporary balance of payments deficits that threatened the stability of their currencies (Rowbotham, 2000, p. 35). At Bretton Woods, the U.S. proposed the creation of the International Bank for Reconstruction and Development that would become known as the World Bank. This institution would lend to developing nations and to countries working to rebuild their economies that were shattered by the war (Rowbotham, 2000, p. 43; World Bank, 2010). The foundation for the General Agreement on Tariffs and Trade (GATT), which came into force in 1947, was also laid at Bretton Woods (Kaplinsky, 2005, p. 14).

In his proposal for an ICU, Keynes, head of the British delegation, focused on the need to avert macro-economic destabilizing effects of trade imbalances. Recognizing that balance of trade surpluses and deficits were self-reinforcing, he hoped to avoid some nations becoming permanent creditors and others permanent debtors. Keynes argued that creditor nations experience boosts in demand for production and an influx of money, which in turn spur further investment and the seeking of additional markets for exports, while debtor nations see their domestic industry and agriculture fall into a self-reinforcing cycle of recession as their home markets are eroded by imports and their currency is drained abroad (Keynes, 1941/1980, pp. 42-66; Rowbotham, 2000, p. 37; Vegh, 1943). These self-reinforcing cycles, if continued indefinitely, can eventually create a contradiction of oversupply in an atmosphere of constrained demand that cannot be easily resolved.
Keynes’ proposed ICU was designed to promote greater equity among nations by virtually eliminating trade imbalances. He proposed an international currency, the bancor, to be used for all international trading. A nation would accrue bancors by exporting, and importing would result in debits to a nation’s bancor holdings with the ICU. Nations would be encouraged to maintain a zero balance in their ICU bancor-denominated accounts (Keynes, 1941/1980; Vegh, 1943). Since bancors could only be redeemed through international trade and would otherwise be worthless and because both net creditor and net debtor nations would incur minor fines as a result of carrying positive or negative balances, nations would be encouraged to spend rather than save bancors. By reducing incentives to generate a surplus of trade, the ICU would promote equity in the distribution of the benefits of production within highly productive countries. Without such a system, a few people in surplus producing nations typically benefit greatly from capturing and investing foreign money earned through exports, while most people involved in surplus producing economies, in effect, work to export their wealth to other nations. ICU benefits to nations running a temporary trade deficit were equally apparent: they would not experience a net outflow of their national currencies to purchase imports and, therefore, would avoid currency destabilization and recession that would result from a negative balance of trade. Through the ICU, both net creditors and net debtors would be encouraged to restore the balance of trade (Rowbotham, 2000, pp. 39-40).

The ICU proposed by Keynes would have promoted greater self-sufficiency and self-reliance within the word-system and would therefore have promoted system resiliency and sustainability as compared to the current system in which imbalances of trade are allowed to self-perpetuate. Had Keynes’ proposal carried the day at Bretton Woods, we would be much less likely to see wealth so intensely concentrated in the hands of the international elites and
transnational corporations who benefit directly from the enforced dependency of imbalanced trade and Global South debt, both of which are used to leverage the capital and financial dominance of transnationals and wealthy capitalists within the world-system.

The very potential of Keynes’ proposed ICU to promote equity, both within and among nations, was resisted by the United States and its capitalist leaders who saw America emerging as a superpower following World War II. Britain, represented by Keynes, was in decline at this point, and its productive capacity had been severely impacted by the war. The United States, on the other hand, had seen its productive capacity rise as a result of the war, and its infrastructure and factories remained intact. With the U.S. having recently emerged from the Great Depression, the American delegation was concerned with maintaining and expanding U.S. trade surpluses as an outlet for American productive capacity and a vehicle for avoiding a post-war recession (Rowbotham, 2000, p. 41; Vegh, 1943).

The U.S. proposal made at Bretton Woods centered on conducting international trade in a free market using national currencies. Under this proposal, nations running a trade surplus would be under no obligation to expend their surplus earnings by purchasing the exports of debtor nations. The U.S. proposed creating the IMF as a stabilization fund to which all nations would contribute according to the size and vigor of their economies. The Fund would hold reserves of all national currencies proportional to the relative strength of their economies. Any nation that experienced a negative balance of trade which threatened to upset its economy could borrow from the Fund on a short term basis in order to avert an economic downturn or currency crisis (Rowbotham, 2000, p. 43). The stabilization provided by the IMF would also prevent future global depressions since IMF loans would provide the liquidity necessary to maintain aggregate demand in the global economy. Loans would also encourage countries to maintain employment
during an economic downturn so as not to compound existing problems (Stiglitz, 2002, pp. 12 & 196).

According to the American proposal, nations running trade surpluses would be allowed to accumulate these surpluses and would be able to exchange them for gold held by debtor nations. The American delegation claimed that, using gold as the international currency meant establishing a neutral currency, but since the U.S. held at least 70% of all world gold reserves at the time, the American delegation also insisted that gold should be valued in dollars and that all other currencies should be valued relative to the dollar. This currency policy became known as the gold exchange standard. The convention eventually adopted the U.S. proposal. In the case of Great Britain, a U.S. war loan was made conditional upon agreement to the American proposal. With the approval of the U.S. proposal at Bretton Woods, the dollar, in effect, became an international currency (Dormael, 1978; Rowbotham, 2000, pp. 43-44).

Securing the dollar as the sole international currency bestowed certain advantages upon the U.S. It could run trade deficits and still maintain the acceptability of its currency – as long, that is, as confidence in the dollar remained stable and national gold reserves remained high enough to satisfy demands by foreign countries to convert their dollar holdings to gold. America’s negative balance of trade during the Vietnam War, eventually did produce circumstances in which international confidence in the dollar waned and the countries of the world increasingly converted their dollar reserves to gold, to the point that it seemed the U.S. might not be able to honor its gold exchange requirements. At this point in 1971, the Nixon administration unilaterally ended exchanges of dollars for gold and thereby ended the Bretton Woods gold exchange standard, but the dollar has continued to serve as a world reserve currency for several reasons noted below in the section on dollar hegemony (Hudson, 2005, pp. 22-25).
At Bretton Woods, the stage was set for a post-war world-system which carried forward in time the inequities imposed during the period of European colonization and which deepened the enforced dependency of nations in the Global South that would gain independence during this period. As we will discuss in more detail below, when the U.S. succeeded in its bid to create a system that would allow it to maintain its trade surpluses, it ushered in an era of increasing concentration of wealth and power and intensifying enforced dependency of nations that would become mired in unpayable debt. When the U.S. succeeded in making its national currency the de facto international currency, it also laid the groundwork that would allow it to manipulate other nations of the world into financing its debt. The Bretton Woods agreement, through its refusal to enforce a balance of trade among nations and its promotion of laissez-faire trade, ensured the economic supremacy of the U.S. and sealed the fate of nations in the Global South as perpetual debtors (Rowbotham, 2000, p. 46). These successes of the U.S., however, also set in motion processes that would eventually lead to a crisis of capitalism in the global economy: overproduction in an atmosphere of declining purchasing power in important centers of consumption such as the U.S. and widespread, crushing national and consumer debt in the U.S. and Europe. In fact, the political success of the U.S. in getting other people and nations to finance its standard of living and its defense spending have created a situation in which the world, faces a growing potential for currency crises in many nations, including the U.S., that could completely destabilize the global economy. We will explore these issues in more depth below in the section on dollar hegemony.

**Neoliberalism: Deepening Enforced Dependency**

In this section, I analyze how the neoliberal economic regime has intensified tendencies inherent in the Bretton Woods institutions to enforce dependency of Global South nations within
the world-system. We will see that the IMF, the World Bank, and post-war free trade regimes often drive and support the enforced dependency of former colonies on the industrialized West. We will see how debt enforces the political and economic subservience of Global South nations to the industrial powers and how loan conditionalities force debtor nations to offer up at bargain prices their natural resources, labor, and industrial and infrastructural assets. We will see how the advantages gleaned through this system by dominant powers and groups become self-reinforcing and self-perpetuating and how systemic inequalities among nations breed complex forms of dependency – not only for nations and citizens of the Global South, but also for those of the First World.

It is important to emphasize that enforced dependency did not begin with the neoliberal era, nor even with Bretton Woods. The relative positions of winners and losers in the current world-system were in many cases established during the colonial period, and one can reach even further back in time to locate people, circumstances, and resources that contributed to creating current inequities. The neoliberal era, however, provides a most glaring example of raw political force wielded to the advantage of the powerful and wealthy at the expense of others.

The neoliberal political wave has washed over the world energized by economic rhetoric and policies that, at best, thinly disguise a worldwide, systematic process of consolidating economic and political power (see Harvey, 2005). Though it is difficult to document that given people, institutions, and nations intended to create a world-system that looks and behaves like the one we have today, it is possible to show how international policies, practices, and institutions have, by and large, systematically advantaged the proponents and enforcers of the neoliberal regime at the ultimate expense of almost everyone else. Many significant advantages for proponents of neoliberalism have been secured through the actions and policies of the Bretton
Woods institutions – the IMF and the World Bank – working in concert with GATT and the World Trade Organization (WTO). In this section, we will focus on the policy content and practices of the IMF, the World Bank, and GATT/WTO as prime examples of dependency enforcing agents of global capital. We will see how the forms of dependency enforced through these institutions systematically reduce the resilience, not only of debtor nations, but of nations and peoples everywhere, making neoliberal political economy among the biggest threats to local and global socio-ecological sustainability.

According to David Harvey (2005),

Neoliberalism is in the first instance a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade. (p. 2)

In the neoliberal era, which began in the 1980s, three central factors have driven a new era of globalization and furthered enforced dependency: conditionalities imposed by the IMF and World Bank in their lending processes, increasingly aggressive free trade agreements, and the increasingly blunt use of political and economic power wielded by nations issuing world reserve currencies (first and foremost among these being the U.S.). The power flowing to the U.S. from international use of the hegemonic dollar proved particularly instrumental in terms of U.S. influence. However, in the globalized era, the economic power of nations has been progressively eclipsed by that of transnational corporations that have captured the political leadership within nation-states and have thereby used national and international politics as platforms for extending their global investments and increasing their profits (Rowbotham, 2000, p. 47). As Stiglitz notes,

\[23\] In 1979, Paul Volcker was named Chairman of the Federal Reserve in the U.S., and he ushered in a set of monetary policies designed to fight inflation no matter the costs in terms of unemployment or other forms of social dislocation. Margaret Thatcher was also elected Prime Minister of Great Britain in 1979, and Ronald Regan was elected President of the United States in 1980. Spreading from these focal points of power and policy, neoliberalism became an organizing framework for the global economy (Harvey, 2005, p. 1).
in the neoliberal era, “the West has driven the globalization agenda, ensuring that it garners a disproportionate share of the benefits, at the expense of the developing world” (Stiglitz, 2002, p. 7). Under neoliberalism, structural inequalities built into the Bretton Woods paradigm have contributed in significant ways to creating a world-system in which the economic and political position of nations in the Global South approximates that of colonies with regard to First World corporate interests. Peripheral nations perpetually depend on forms of economic assistance that deepen and enforce their dependency upon the very institutions, corporations, and nations that strip them of the infrastructural and business assets, jobs, decision making power, natural resources, and social support that could serve as bases for creating more free, self-sufficient, and sustainable societies. This dependence also further weakens their relative economic position with regard to powerful transnational corporations and First World nations (Greider, 1997; Kaplinsky, 2005; Manley, 1987; Perkins, 2004; Rowbotham, 2000; Stiglitz, 2002).

The lopsided world-system of enforced dependency that derived from Bretton Woods gained further momentum during the neoliberal era under the political leadership of Great Britain and the U.S. We will now more closely examine the ideology undergirding the neoliberal agenda for globalization.

Neoliberalism is an extreme form of market fundamentalism that gained worldwide prominence in the 1980s when it became the economic platform of British Prime Minister Margaret Thatcher and U.S. President Ronald Reagan. Neoliberal ideologues believe in small government and in the ability of a self-regulating market to serve effectively as the ultimate arbiter of economies and of all social life. Neoliberals promote privatization of all or nearly all public industries, services, and functions; capital market liberalization; and the removal of all barriers to trade. In promoting free trade, neoliberal policy makers have been known to oppose
government regulations of all kinds, including those that safeguard environmental and human health and that regulate working conditions and wages (Achbar, et al., 2004; Black, 2001; Harvey, 2005; Moyers, 2002). Liberalization is supposed to stimulate the economy by moving resources from less to more productive uses, but it has often destroyed jobs as a result of international competition. In the manufacturing sector, for example, corporations seeking production cost advantages in terms of wages, regulations, productivity, and other factors may relocate their production facilities in order to maximize profits, thereby causing unemployment in communities left behind. This footloose behavior of capital in an era of free trade also places downward pressure on the sovereign rights of nations to create and enforce environmental and labor regulations (Achbar, et al., 2005; Black, 2001; Shuman, 2000, chap. 2).

In the 1980s, with Margaret Thatcher at the helm in Britain and Ronald Reagan as President in the United States, the IMF and the World Bank became “missionary institutions” for neoliberalism (Stiglitz, 2002, p. 13). A “purge” occurred at the World Bank that redirected the Bank’s efforts toward reducing the power and role of government while increasing privatization and free trade (Stiglitz, 2002, p. 13). Although the objectives of the IMF and the World Bank remained distinct, their activities in any given country became increasingly intertwined. The World Bank began to provide “broad-based support in the form of structural adjustment loans” but only did so following IMF approval, and the IMF, originally created to assist on a short term basis during an economic crisis, became involved in long-term development policy in countries experiencing perpetual states of crisis (Stiglitz, 2002, pp. 13-14). According to Stiglitz (2002), the neoliberal policies of the IMF in particular became dogmatic and expressive of a naïve faith in markets to self-correct so that the institution came to see liberalization as an end in itself (pp.
Prime Minister Thatcher touted ideology as fact in her claim that “there is no alternative” to the neoliberal agenda (Douthwaite, 1999b, chap. 5).

According to Stiglitz (2002), the neoliberal ideology that permeated the policies of the IMF beginning in the 1980s contradicted the both the ideas upon which that institution was founded and the stated goals of its programs:

Over the years since its inception, the IMF has changed markedly. Founded on the belief that markets often worked badly, it now champions market supremacy with ideological fervor. Founded on the belief that there is a need for international pressure on countries to have more expansionary economic policies – such as increasing expenditures, reducing taxes, or lowering interest rates to stimulate the economy – today the IMF typically provides funds only if countries engage in policies like cutting deficits, raising taxes, or raising interest rates that lead to a contraction of the economy. (pp. 12-13)

Furthermore, it takes capital and entrepreneurship to create new firms and jobs needed to end an economic crisis, and the austerity programs and high interest rates imposed by the IMF in the neoliberal period have resulted in a lack of both (Stiglitz, 2002, p. 59). We will address below the specific content and processes of the structural adjustment programs referenced by Stiglitz. It is important to note that, historically, the U.S. government played a central role in developing its strong domestic economy, but Global South nations have been effectively denied the opportunity to do the same under the neoliberal paradigm, in many cases because they are subject to the economic and political influence of the IMF and the World Bank (Stiglitz, 2002, p. 21).

The ideology of neoliberalism has also been unevenly applied by the IMF, thereby increasing the relative position of strength of the First World in relation to the Global South. The influence of the IMF extends well beyond those countries that have loan agreements with it. In accordance with Article four of its charter, The IMF generates annual reports for every nation in the world in order to verify that each is adhering to the agreement under which the IMF is organized. According to Stiglitz (2002, p. 48), because these reports are used as a means of
grading a nation’s economy, they serve as ideological vehicles for advancing the neoliberal agenda. Peripheral countries have to pay attention to this grading in order to avoid frightening away current and potential investors while core countries can ignore them (Stiglitz, 2002, p. 48).

In an overarching sense, economic policy guided by neoliberal ideology is also highly exclusionary to vast numbers of people worldwide because adherence to neoliberal doctrine by policy makers tends to increase the income gap between rich and poor within nations and among nations. These gaps are also an indication that many Global South societies have become mired in perpetual states of debt, underdevelopment, and maldevelopment (Homer-Dixon, 2006, p. 192; Manley, 1987; Robotham, 2000). Furthermore, according to former World Bank economist Partha Dasgupta, ideological support for growth economics and trade liberalization (by the industrialized world, major international development banks, and national governments worldwide) has encouraged practices based on economic theories that overlook impacts on the environment and on intertemporal human wellbeing. Dasgupta identifies how application of neoliberal economic theories can produce situations in individual nations where economic and social development occurs according to standard means of measurement – typically the gross domestic product (GDP) – at the cost of drawing down or damaging natural resources and human wellbeing. For such nations, long term prospects for future generations are negatively impacted in exchange for economic growth now (Dasgupta, 2001). Thus, neoliberal policies enforced

24 It is important to note that some countries such as China have both successfully captured market share in many areas globally and grown their economies during the neoliberal era. Kaplinsky’s (2005) empirical analysis of global trade demonstrates that these gains create a de facto reduction of similar opportunities for other nations. Therefore, although some national economies have attained a relative level of success during the neoliberal era of free trade, rising economic activities for one nation or business have come at the cost of reduced opportunities for others due to systemic overcapacity in production and the resulting squeeze on prices (Kaplinsky, 2005). Neoliberalism, therefore, is not a tide that lifts all boats. It is also important to note that China’s trade successes have been supported by keeping the Chinese currency at an artificially low value, thereby creating a positive atmosphere for exports. This practice has taken place in a global atmosphere of neoliberalism, but it is quite contrary to neoliberal doctrine.
through the IMF and the World Bank in many cases circumscribe the resilience and sustainability of communities and nation states.

According to Homer-Dixon, neoliberal globalization also failed to produce promised growth in middle-income countries, and some of the countries that are deemed success stories in terms of achieving economic growth actually protected their economies from free trade:

Middle-income countries hardly gained at all, including those in Latin America that aggressively privatized state-owned industries and opened their borders to trade and investment. Also, some of the countries that grew the fastest – … including China and India, but also Malaysia and Chile – actively protected their economies using capital controls and trade barriers. (2006, p. 192)

It can be argued that economic globalization has benefited transnational corporations selling high-value-added goods and services globally (Homer-Dixon, 2006, p. 192). Benefits enjoyed by these entities may well derive from “excessive political lobbying and representation by powerful commercial interests” in global and regional free trade and regional economic block organizations such as the WTO and the European Union (Rowbotham, 2000, p. 3). Such lobbying occurs with regard to World Bank and IMF policies and loans as well (Rowbotham, 2000, p. 3). For example, global water corporations have been actively consulted by World Bank officials in the process of developing agreements for financing water projects (International Consortium of Investigative Journalists [ICIJ], 2003).

Stiglitz’s (2002) offers an insightful summary of his observations on IMF policies and procedures as central, epitomizing phenomena of neoliberal globalization:

[At the IMF,] decisions were made on the basis of what seemed a curious blend of ideology and bad economics, dogma that sometimes seemed to be thinly veiling special interests. When crises hit, the IMF prescribed outmoded, inappropriate, if ‘standard’ solutions, without considering the effects they would have on the people in the countries told to follow these policies. Rarely did I see forecasts about what the policies would do to poverty. Rarely did I see thoughtful discussions and analyses of the consequences of alternative policies. There was a single prescription. Alternative opinions were not sought…. Ideology guided policy prescription and countries were expected to follow the
IMF guidelines without debate…. These attitudes … often produced poor results [and were] antidemocratic. (pp. xiv-xv)

Here, Stiglitz describes a market fundamentalist approach to neoliberal economic policy and practice. He also points out an important aspect of neoliberalism: that it is entirely distinct from political democracy. During recent decades, neoliberal leaning politicians have conflated individual freedom and democracy with free markets. Below, we will explore in more depth how neoliberal ideologues promote free market strategies that actively undermine democratic processes – placing freedom of the market over freedom of people to govern themselves.

We will now embark upon an exploration of exactly how neoliberal dogma was applied in practice in many countries as a condition of receiving economic development and economic stabilization loans.

Structural Adjustment Programs and Loan Conditionality

Systems of international finance and debt enforce the dependency of many debtor nations upon first world banking interests, thereby insuring that these nations remain in line economically and politically with the agenda of neoliberal globalization led by the First World. Similar and simultaneous critiques can be leveled at the IMF and the World Bank since, during the neoliberal period, these institutions have evidenced a high degree of integration at the policy level and have often combined their efforts within given countries. World Bank development loans have often been made available on the condition that an IMF structural adjustment program was on track. At times, the World Bank has even sought IMF endorsement of its loan agreements (Rowbotham, 2000, p. 49). It is important to acknowledge that the bulk of foreign debt incurred by Global South nations is commercial and created through fractional reserve banking. These funds, therefore, are not lent from one country to another. Still, it is important to elucidate how the loan policies and strategies of the IMF and the World Bank embody neoliberal ideology,
especially since these policies influence commercial lending strategies to debtor nations.

Commercial loans are not generally forthcoming to nations that are not also supported by the IMF and/or the World Bank (Bradshaw & Huang, 1991, pp. 323-325; Rowbotham, 2000, pp. 49 & 98).

We begin our exploration of IMF and World Bank lending as embodiments of dependency enforcing neoliberal ideology by exploring how loan conditions and structural adjustment programs (SAPs) tend to create economic recessions while, at the same time, undermining debtor nations’ ability to address the social and economic causes of recession. We will explore how and why debtor nations find themselves trapped in a perfect storm of needing funds from the IMF and the World Bank while, as a condition of receiving needed funds, they must continually erode the domestic social and economic foundations from which a healthy domestic economy might be built. Borrower nations find it difficult to escape this trap, and they become increasingly vulnerable to economic and political exploitation – a classic case of enforced dependency.

Countries can experience economic crises for many reasons. During the post-war period, IMF stabilization and World Bank development loans were sought by many peripheral nations burdened by legacies of colonialism and enforced dependency. These countries have in recent decades become characterized by large poor populations concentrated in and around cities (see Davis, 2006, and Araghi, 1995). These populations have suffered the destabilizing effects of both depeasantization (which will be examined in some detail in chapter five) and the neoliberal drive to open markets. The difficulties faced by nations attempting to deal with these problems are compounded by downward pressure on profits of latecomers to technological advancement (Douthwaite, 1999b, chap. 2), downward pressure on the prices of commodities in a global
market (see Kaplinsky, 2007), international harmonization and enforcement of intellectual property policies (Garcia, 2004; Shiva, 2000 & 2005; Stiglitz, 2002, pp. 7-8), cultural imperialism, Bretton-Woods-induced systemic trade imbalances, unfair agricultural subsidies provided to U.S. farmers (Norberg-Hodge, et al., 2002; Shiva 2000, 2005), aggressive international free trade agreements, use of nonlocal currencies that systematically deplete communities (Douthwaite, 1999a, 2004), and ecological and health crises. These factors conjoin within neoliberal globalization to thwart socio-economic investment in the Global South.

Since the 1980s, the World Bank and the IMF have made their loans contingent upon debtor nations deploying sweeping structural adjustment programs. Enforcement of structural adjustment as a condition for receiving IMF and World Bank loans serves to integrate debtor nations into the world-system in ways that advantage transnational corporate and financial interests in the First World at the expense of the economic and social interests of citizens in the Global South. Although external conditions such as virtual monopoly status of transnational corporations, global commodity price variations, aggressive exporting, and protectionism practiced by industrial nations can destabilize a nation’s recovery from economic crisis (Rowbotham, 2000, p. 58), these nations are held solely responsible for repayment of IMF and World Bank debt. This fact tends to reinforce their dependence on external loans to address economic problems that may be less national than global.

According to Rowbotham (2000), the ideology of “structural adjustment is based on the assumption that the cause of each nation’s debt crisis lies entirely within its own economy. The economy must therefore ‘adjust’ to the wiser world economy” (p. 55). We have recognized above that the opposite is often true: many of the crises debtor nations face result from legacies
of colonialism and from external pressures deriving from the ability of core entities within the world-system to secure for themselves positions of relative advantage.

Structural adjustment programs most often entail all or most of the following: fiscal austerity (including reductions in public services such as publicly supported education, job training, and healthcare as well as the cutting of subsidies provided to the poor for obtaining the basics of life such as food, water, and transportation), raising taxes in order to pay external debts, privatization of public industries and services, elimination of barriers to trade, liberalization of capital markets, and currency devaluation (making a country’s products cheaper to the outside world but more expensive to their own citizens) (Black, 2001, Manley, 1987; Robbins, 1999, p. 106; Stiglitz, 2002, p. 53). These policies almost always lead to recession or worse (Stiglitz, 2002, p. 38).

Additionally, strings attached to debt can be political in nature. Jamaica provides an example of a nation whose political philosophy with regard to economic policy was a casualty of debt crisis. Jamaica’s leftist and Third-World-solidarity-oriented economic and political philosophy as well as its resource politics (modeled on OPEC as a resource cartel) with regard to bauxite (from which aluminum is extracted) were all but obliterated as a result of its near currency collapse. Jamaica sought a stabilization loan from the IMF, and the strings attached to this loan radically rerouted the political path of that nation toward closer integration with the neoliberal economic project while reinforcing Jamaica’s peripheral status within the world-system (Manley, 1987; Black, 2001).

Loan conditions imposed by the IMF and World Bank often undermine democratic decision making in Global South nations and thereby undermine political and social coherence that could improve a nation’s ability to advance self-determined domestic and international
social and economic policies. These conditions also typically prevent a nation from securing the public funding necessary to carry through progressive domestic social and economic policies.

According to Stiglitz, for countries in dire need of credit, “Unless the IMF approves the country’s economic policy, there will be no debt relief. This gives the IMF enormous leverage…. ” (Stiglitz, 2002, p. 43). According to Rowbotham (2000), using their financial leverage, the IMF and the World Bank have been known to assume roles that circumvent the policy making roles of sovereign nations:

Structural adjustment has seen teams of World Bank and IMF economists virtually taking over the economies of debtor nations in an attempt to ‘turn them around’. Exchange rates, government spending, labour laws, domestic deficits, taxation, welfare programmes, land tenure, environmental regulations, wage cuts and public service cuts – all of these have been subject to detailed requirements and constant scrutiny. (p. 56)

The depth and breadth of prescriptive SAP policies alone reveal them as antidemocratic.

Furthermore, the IMF and World Bank reveal their willingness to engage in antidemocratic processes in order to enforce neoliberal SAPs when they bar citizens from participation in negotiations and refuse governments permission to reveal to their citizens what loan agreements entail (ICIJ, 2003; Stiglitz, 2002, p. 51). According to Stiglitz (2002), antidemocratic conditions can apply to the national governance process itself. He notes that “in some cases, the agreements stipulated what laws the country’s Parliament would have to pass to meet IMF requirements or ‘targets’ – and by when” (pp. 43-44).

To make matters worse, these antidemocratic policies have not served to benefit debtor nations economically:

The first World Bank structural adjustment programmes (SAPs) were in Kenya, Turkey and the Philippines in 1980. None is a success today and the United Nations Economic Commission for Africa in 1993 found fifteen African countries clearly worse off after structural adjustment than before. (Rowbotham, 2000, p. 56)
Structural adjustment, rather than benefiting debtor nations, enforces their dependency on the world-system by perpetuating and deepening economic crisis. In Africa, SAPs have nearly always resulted in widespread unemployment, declining real incomes, economically damaging levels of inflation, capital flight, persistent trade deficits, rising levels of external debt, the destruction of the social safety net, and de-industrialization (Rowbotham, 2000, p. 57; Stiglitz, 2002, p. 46).

These realities point out that the assumption that free markets and freedom go together is a fallacy. The IMF and the World Bank do not facilitate blossoming economies in free societies but serve to enforce the dependency of client governments who, albeit sometimes quite unwillingly, force the will of more powerful economic and political interests onto their nations. The fact that the IMF has used a “boilerplate,” one-size-fits-all approach to developing its loan agreements and that it has sought little input from outside experts or from national officials familiar with the countries in question (Stiglitz, 2002, pp. 47-48) demonstrates that its political agenda is driven by outside interests. The IMF claims it does not dictate the terms of its loan agreements, but they tend to wield the power in one-sided negotiations because a country seeking an IMF loan is facing an immediate crisis and therefore is in desperate need of assistance (Stiglitz, 2002, p. 42).

Staged dispersal of loan funds serves as yet another tool for international lending agencies to dictate and enforce neoliberal SAPs. Under a staged dispersal arrangement, if a country does not stay on track and meet specific economic and policy tests and targets, disbursement of loan installments will be halted midstream (Rowbotham, 2000, p. 57). Sometimes meeting designated targets and tests actually reduces a country’s ability to repay its IMF debt, so that the conditions imposed cannot be justified in terms of the Fund’s banking
objectives (see the example of Korea in Siglitz, 2002, pp. 44-45) but are revealed for what they are: global policy tools.

In the case of the World Bank, a large proportion of money lent to individual nations for infrastructure projects tends to be used to hire foreign contractors with the expertise necessary to successfully design and create infrastructure and other development projects. Therefore, since jobs are created wherever the borrowed money is spent, jobs resulting from development projects in the Global South are often created in the First World. Due to varying economic, political, and social contexts, some degree of domestic economic growth may or may not materialize from investment in these projects, but in any case where foreign contractors are hired or where long term management contracts are awarded to transnationals, global corporate interests benefit a great deal from these loans while individual debtor nations are stuck with the debt (Robbins, 1999, pp. 101-107). The World Bank has also repeatedly required privatization of state industries and services as a condition for loan approvals, a process which usually results in the creation of profit making opportunities for transnational corporations (ICIJ, 2003).

According the Stiglitz, there are several reasons for the failure of conditions to stimulate development. One reason is that loans create fungibility that may be poorly utilized: funds designated for a specific purpose free up funds that may be spent poorly elsewhere. He also cites poorly conceived conditions that deepen the economic crisis at hand together with the political unsustainability of policy initiatives as possible reasons for the failure of loan conditions to promote development. The political unsustainability of imposed policy initiatives likely derives from the public perception of these conditions as political and economic intrusions by a colonial power (Stiglitz, 2002, p. 46).
There are, however, some economic growth success stories of IMF policies. Botswana, for example, averaged more than 7.5 percent growth in the period 1961 to 1997 (Stiglitz, 2002, p. 37). But one must question whether these success stories have produced socio-ecologically sustainable and economically resilient societies. In some cases, nations that secured loans to address an economic crisis or to undertake development succeeded mainly at enriching their ruling elite (Stiglitz, 2002, p. 52), thereby enforcing internal dependency. The debt with which these nations continue to struggle also serves as an important and continuing source of their vulnerability to exploitation by core entities within the world-system. Enforcing peripheral status may in fact have been a goal of IMF and World Bank lending. At least, it seems resilience and self-sufficiency were not primary goals of this lending. According to Rowbotham (2000), “The persistent and cumulative failure of the theoretical model that encouraged developing nations to ‘borrow/invest/export/repay’ suggests the nature, terms and context of loans to the Global South have been such as to render these inherently unpayable” (p. 31).

It is important also to recognize that monies lent through the World Bank and the IMF are largely created for this purpose. The World Bank creates and sells bonds to commercial banks. In this way, it generates funds for lending similarly to the way a nation generates spendable funds through creation of national debt. In the case of the IMF, that institution requires 25 percent of its quotas deposited by member countries to be in the form of gold. The other 75 percent can be in the national currency. To generate these deposits, national governments regularly create them by selling bonds, thus increasing the national debt. The IMF can also administer loan packages offered through commercial banks (Rowbotham, 2000, pp. 100-101). Thus, Global South debt is much more an obligation to the financial sector within industrialized nations and less a debt owed to the nations of the First World. Indebted nations are therefore dependent upon the global
financial sector, the area of the global economy that has come to dominate all others in terms of growth, rendering it a formidable political and economic force.

We will now explore the dependency enforcing aspects of implementing some specific conditions imposed through IMF and World Bank lending. We will also examine how free trade and the requirement of debtor nations to earn foreign exchange to pay their debts contribute to enforcing the dependency of nations in the Global South.

**Fiscal Austerity**

Fiscal austerity as a condition for loan agreements can include all or some of the following: reduced government spending, increased taxation, requirements to reduce national and/or international debt, and requirements to raise interest rates. According to Stiglitz (2002), IMF austerity programs have included demands to raise interest rates to as high as 20, 30, 50, or even 100 percent, a practice that makes domestic business investment virtually impossible (p. 59). Although these strategies may help to reverse a currency crisis in the short term, they create a poor foundation for social and economic development. Reduced government spending can yield such outcomes as near-complete disappearance of the social safety net, negative impacts to the reach and quality of education, reduced ability to address environmental problems, and reductions in the government’s ability to stimulate domestic small business development. These impacts obviously reduce a nation’s potential to prepare its citizens for occupations other than those in the low-skill manufacturing and service sectors. This lack of social investment, therefore, virtually condemns a nation to dependence on core entities within the world-system as suppliers of high-tech products and services, and the debtor nation loses out on developing its citizens’ potential to earn the kind of wages paid to highly skilled workers. Furthermore, the government loses out on the taxes that could be generated by a higher percentage of its
population engaging in skilled work, and this low tax base reinforces the government’s inability to undertake social programs. Increased taxation – especially when combined with reduced social services such as unemployment benefits and subsidies\textsuperscript{25} meant to ensure access to the basics of life – places stress on people living under marginal circumstances already, and it may force some into abject poverty, virtually eliminating their chances to contribute to economic development in the future. Paying down national and international debt diverts money toward creditors and away from potential social investment. Raising interest rates slows the economy and makes it more difficult for consumers to purchase durable goods and homes, to start or expand businesses, or even perhaps to continue business operation. The economic slowdown caused by rising interest rates reduces the tax base and increases the need for social services at a time when just the opposite is needed.

All of these strategies applied simultaneously in a fiscal austerity package are more likely to cause economic recession or even depression than to stimulate development. A nation caught in a cycle of debt and being forced to implement fiscal austerity as a condition for loan approval is in a difficult position indeed. Such a country is likely to see its ability to implement domestic policy objectives and its control over its domestic economy systematically eroded, especially if it is forced to enter many successive loan agreements or to renegotiate its debt. Countries caught in such a trap suffer from enforced dependency (see Black, 2001, and Stiglitz, 2002).

\textit{Export-led Development}

Loans made to Global South nations by the IMF, the World Bank, and large commercial banks are denominated in world reserve currencies. Therefore, in order for a nation to pay debts to these banks, debtor nations must earn foreign exchange by trading with First World nations.

\textsuperscript{25} In Botswana, IMF-prompted removal of subsidies for food and kerosene undertaken as part of a wide ranging austerity program triggered riots (Stiglitz, 2002, p. 77).
Export led development represents a means of earning the necessary foreign exchange, and export-led development strategies have been a foundation of World Bank and IMF thinking since the late 1950s (Rowbotham, 2000, p. 50).

Since former colonies that once served as the raw materials plundering grounds for their conquerors rarely have developed as producers of a wide range of advanced, technologically complex products, Global South nations typically export raw materials, commodities such as agricultural and mining products, and relatively simple manufactured products on a large scale. When an individual country sells its raw materials and other products in the competitive global market, the price earned for these products falls to that of the lowest cost provider (Douthwaite, 2004, pp. 114-115). Rising production of export commodities by debtor nations pursuing export-led development strategies also places intense downward pressure on prices (see Avramovic, 1986). Furthermore, Kaplinsky (2005) notes that prices for exported commodities have declined relative to imports of manufactured goods (pp. 57-60). Kaplinsky (2005) also notes that, in a globally competitive market, the lower the technological intensity of a given product, the more likely its price will fall (pp. 184-185). When one considers that typical Global South domestic commodities and products have relatively little value added compared to the complex products of the First World, one realizes that the playing field of the global market is not at all level.

One might argue that complex products are manufactured in many Global South countries, but as Kaplinsky (2005, pp. 60-65) demonstrates when exploring the reasons for demise of a garment producer in the Dominican Republic, if the production processes are easily reproducible elsewhere, transnational producers will often relocate to take advantage of

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26 Kaplinsky’s (2005) study of trade between Global South countries and the U.S., however, demonstrates that, although the relative price of exported commodities to imported manufactured goods declined, increased levels of commodities exports resulted in absolute gains in income generated from export activities. This finding, however, does not mean that alternate economic strategies could not have generated even higher levels of income, and it does not take into account that commodities exports can come with high environmental and social costs (pp. 204-205).
production cost savings made possible by global competition – for example, a currency
devaluation in another country. Furthermore, since factory production in the Global South tends
to take place in facilities owned by First World transnationals, debtor nations often do not realize
expected benefits of production taking place within their borders because profits won are mostly
repatriated by First World corporate interests. These corporations may contribute relatively little
to a peripheral nation’s efforts to earn foreign exchange, especially since many of the factories
they operate in Global South nations reside in tax-free zones (Achbar, et al., 2005; see also the
Dominican Republic example offered by Kaplinsky, 2005, p. 60).

A focus on exports also often interferes with the domestic economy of the exporting
nation (Rowbotham, 2000, p. 152). The harnessing of domestic production as a means of earning
foreign exchange diverts resources and production capacity that could otherwise be used to
support the domestic population. The export focus enforced through IMF and World Bank loan
agreements therefore tends to increase the dependency of domestic populations in the Global
South on the world-system for the provision of basic needs. This situation is especially egregious
in the case of export-oriented agricultural production in nations whose people are hungry. Export
crops are grown on land monopolized by agribusiness instead of growing crops that could feed
the people (Rowbotham, 2000, p. 7).

According to Rowbotham, “The obligation on debtor nations to direct an increasing
proportion of their resources and economic effort to the export market has long been recognised
as one of the primary causes of poverty and lack of internal development in the emerging
nations” (2000, p. 6). According to David Korten (2001), in Brazil, between 1960 and 1980, the
conversion of small land holdings used to grow food for domestic consumption to agribusiness
production of export crops displaced 28.4 million people, and in India, 20 million people were
displaced over a 40 year period due to large scale development projects (p. 55). The displacement of subsistence farmers and indigenous communities enforces new dependencies of the displaced upon the wage labor system – and upon the economic resources of their government, especially in the event that they remain under- or unemployed. These new and often desperate dependencies among a nation’s citizens may add to the urgency of the national government’s efforts to secure loans, thereby increasing the nation’s dependency on the world-system.

Global South debt implies an imbalance of trade. Repayment of loans through export-led development would mean generating a trade surplus, which would also mean that at least some of the nations that had previously enjoyed a trade surplus would have to accept increased exports from debtor nations and see their own surpluses reduced or converted to deficits (Rowbotham, 2000, pp. 36-37). This scenario is politically and economically unacceptable to core powers within the world-system. Export-led development, rather than being a way out of debt, contributes in important ways to the perpetuating the debts of many nations in the Global South.

**Free Trade**

Under the Bretton Woods agreement, free trade was given high priority. The requirement to promote free trade of goods and services worldwide through removal of restrictions to trade was written into the charters for both the IMF and World Bank. “Countries were … permitted to seek a persistent trade surplus. The balance of international trade was left to ‘free market commercial forces’” (Rowbotham, 2000, p. 46). In the neoliberal era, removing barriers to free trade has become a standard condition for obtaining a loan from the IMF or the World Bank.

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27 It is important to note that the U.S. is an exception to this statement. It runs an extremely negative balance of trade of a magnitude that would not be desirable or possible for other industrialized nation. The U.S. has also become the nation with the world’s largest debt. This situation is possible because of the status of the U.S. dollar as a world reserve currency -- and the only currency with which oil can be purchased from OPEC countries. We will further explore below reasons why the U.S. is able to run up huge debts without (as yet) facing a currency crisis.
Free trade is purported to level the playing field in the global market through the removal of protectionist policies such as tariffs and subsidies, but as we shall see, free trade policies tend to favor First World nations and transnational corporations at the expense of the Global South.

As economic protections are removed, weak economies are exposed to competitive forces they often cannot withstand, especially in market areas where economies of scale are achieved through applying capital intensive production methods (Douthwaite, 2004, pp. 114-115). Western industrialized nations have also at times pushed for trade liberalization for products they export but have resisted liberalization in areas where it would have negatively impacted their own economies (Stiglitz, 2002, p. 60). For example, the U.S. has pushed Global South nations to eliminate barriers to trade whilst maintaining its own trade barriers in agriculture, thereby preventing Global South producers from exporting some of their most abundant products and depriving them of export income (Stiglitz, 2002, p. 6). These trade arrangements systematically disadvantage Global South businesses which often have neither the capital nor the domestically produced technology to get ahead.

Free trade regimes also undermine the ability of national and local powers to regulate industries in the areas of social justice and environmental protection. Intense competition among large corporations combined with competition among debt ridden countries seeking the opportunity to earn foreign exchange constrain possibilities for regulation in areas such as the minimum wage, working conditions, and environmental protection (Moyers, 2002).

Free trade also paves the way for further concentration of wealth in the hands of transnational corporate entities who can more easily achieve capital intensive economies of scale and undercut their competitors with low prices, thereby driving many smaller producers out of
business (Douthwaite, 2004, p. 117). In gaining needed financing for capital investment, transnationals receive favored treatment that intensifies the concentration of wealth and power:

Size helps multinationals access capital, since they are generally able to obtain credit more easily, at lower rates of interest and on a more advantageous terms. Size also grants multinationals an advantage over smaller businesses when it comes to withstanding the pressure of debt. Banks and other lending institutions are less likely to foreclose on large debts to Big Business than they are on small business debts. (Rowbotham, 2000, p. 156)

As it turns out, the purported mutual gains to be achieved among nations from specialization and trade in the globalized world-system are only possible in an atmosphere of full employment. In an atmosphere of significant structural unemployment, some producers are unlikely to find markets for their products. Transnationals that can move their manufacturing base to take advantage of production cost savings reinforce the system of globalized production and trade by large-scale producers, making it nearly impossible for smaller producers to capture market share. Structural excess in production capacity and structural unemployment reinforce these phenomena by placing downward pressure on prices at the same time that labor saving technologies contribute to unemployment. Under the current circumstances, those countries that succeed in export-oriented development do so at the expense of less efficient producers elsewhere. Globalization creates winners and losers, and the poverty and inequity that compound enforced dependency are integral to the process of globalization itself (Kaplinsky, 2005, pp. 230-231 & 235).

Because it places downward pressure on prices, free trade also advantages wealthy consumers over poor producers (Douthwaite, 2004, p. 114), but the wealth advantages of globalization reaped in core nations are likely to be temporary: “As corporations seek low-cost opportunities in the debtor nations, the wealthy nations export jobs abroad and suffer an influx of cheap products that destroy home markets” (Rowbotham, 2000, p. 6). The United States has
witnessed the dissolution of its manufacturing sector as a result of these economic forces so that the foreign exchange earned by debtor nation sales to U.S. customers often occurs through American consumers slipping ever deeper into debt (Clark, 2005, pp. 10-11).

Free trade creates enforced dependency both within and among nations as it intensifies the concentration of wealth and power within the world-system, thereby depleting increasing numbers of individuals, families, communities, and nations who have, at the same time and paradoxically, become dependent on the global economy for their living.

**Privatization**

IMF and World Bank loan requirements prompt nations to privatize public utilities, services, and infrastructure, thereby creating opportunities for which transnational corporations may be uniquely positioned due to their ability to obtain credit and, in some cases, due to their technological advancement and prior experience running large scale, technically complex industries and services. Privatization of basic services such as water reinforces the power and reach of global corporate interests by handing them both new business opportunities and captive markets. The continual privatization of the commons, particularly commons that serve basic needs, raises the question of how those without money will fulfill their survival needs. It also raises the question of who will speak on the behalf of nature. Privatization tends to further concentrate wealth and power in the hands of a few while enforcing the dependency of the economically weak who are forced to obtain the basic necessities from transnationals that bear no political or moral responsibility to them (Achebar, et al., 2005; ICIJ, 2003; Kovel, 2002, pp. 73-74). In more than a few cases involving loan conditions, the positions of transnationals have been advanced through political corruption, subterfuge, and conflicts of interest. IMF and World Bank officials have been known to have ties to industries and companies that directly benefit
from privatization schemes they recommend (ICIJ, 2003). In some cases, domestic elites also participate in buying up large assets at bargain prices (ICIJ, 2003; Stiglitz, 2002, p. 58).

These privatization strategies do not stimulate domestic capital development but transfer resources and enterprises to foreign investors at bargain basement prices (Ludwig, Blum, & Opitz, 2006), and profits earned by foreign investors in the Global South are mostly repatriated to the First World. Since government debts are paid through taxation, the repatriation of profits from privatized assets purchased by foreign interests contributes to continued government indebtedness (Rowbotham, 2000, p. 125). Nations that are forced to privatize public assets forfeit long-term potential for domestic economic benefits from enterprises sold under these conditions (Rowbotham, 2000, p. 63), thereby increasing their dependency on external loans and capital investment. Privatization most often functions to strip a country of assets rather than serving as a basis for economic expansion (ICIJ, 2003; Ludwig, et al., 2006; Stiglitz, 2002, p. 58) and may negatively impact the economy by encouraging unemployment (Stiglitz, 2002, p. 57).

In recent decades, the IMF has urged immediate privatization rather than waiting for proper regulation or competition to be in place. This urgency to privatize has created entrenched monopolies that need not heed the public interest (ICIJ, 2003; Ludwig, et al., 2006; Stiglitz, 2002, p. 56). According to Stiglitz, “Whether the privatized monopolies were more efficient in production than government, they were often more efficient in exploiting their monopoly position; consumers suffered as a result” (Stiglitz, 2002, p. 56). This urgency for privatization driven by the IMF and World Bank reveals the primarily focus of these institutions on serving the interests of core entities within the world-system.
Capital Market Liberalization

Capital market liberalization opens a country’s banking and currency systems to outside interests. According to Stiglitz (2002), liberalization of capital markets can be intensely destabilizing to a nation’s economy, can negatively impact investment and growth, and can ironically involve a nation in purchasing U.S. debt:

As bad … as trade liberalization was for developing countries … capital market liberalization was even worse. Capital market liberalization entails stripping away the regulations intended to control the flow of hot money in and out of the country – short-term loans and contracts that are usually no more than bets on exchange rate movements. This speculative money cannot be used to build factories or create jobs – companies don’t make long-term investments using money that can be pulled out on a moment’s notice – and indeed, the risk that such hot money brings with it makes long-term investments in a developing country even less attractive. The adverse effects on growth are even greater. To manage the risks associated with these volatile capital flows, countries are routinely advised to set aside in their reserves an amount equal to their short-term foreign-denominated loans…. Typically, reserves are held in U.S. Treasury bills, which today pay around 4 percent. In effect, the country is simultaneously borrowing from the United States at 18 percent and lending to the United States at 4 percent. (Stiglitz, 2002, p. 66)

Under conditions of financial market liberalization, global banks can attract depositors away from domestic banks while simultaneously encouraging loans to transnationals over those to local businesses (Stiglitz, 2002, p. 31). This process results in the export of capital and in jobs created outside rather than inside the country. Profits earned by transnational banks are largely repatriated to core nations and regions rather than reinvested in the host nation. In Ethiopia, this process meant that farmers were denied credit to purchase seeds and fertilizer. Domestic small farmers, unable to access agricultural inputs, were driven out of business, furthering their and the country’s dependence on global agribusiness (Stiglitz, 2002, p. 31). The case of Argentina also demonstrates the dangers of capital market liberalization that competitively eliminates local banks:

Before the collapse in 2001, the domestic banking industry had become dominated by foreign-owned banks, and while the banks easily provide funds to transnationals, and
even large domestic firms, small and medium-size firms complained of lack of access to capital…. The challenge is not just to create sound banks but to also create sound banks that provide credit for growth (Stiglitz, 2002, p. 69).

The Community Reinvestment Act of 1977 in the U.S. was passed precisely to counteract the tendency for banks to lend only to privileged classes and big businesses rather than to diverse people and businesses in their local communities, including historically underserved groups (Shuman, 2000, chap. 4; Stiglitz, 2002, p. 70). Widespread access to capital provided to diverse groups, communities, and neighborhoods can stimulate economic development, but making what banks may perceive as riskier loans does not necessarily serve the interests of the financial sector, at least in the short term. The IMF and World Bank practice of forcing capital market liberalization on debtor nations supports the interests of the global financial sector at the expense of communities and nations.

**Foreign Direct Investment**

Foreign direct investment is the process of businesses building production facilities in foreign nations. It is associated with some developing country economic growth in cases such as Singapore and Malaysia (Stiglitz, 2002, p. 67). It is also associated with Ireland’s Celtic Tiger economy (Kitchen & Bartley, 2007, chap. 1 & 22). However, foreign direct investment may also destroy local competition as transnational firms that enjoy advantages of size and efficiency drive out local businesses and are left free to raise prices by virtue of their new monopoly status (Stiglitz, 2002, p. 68). Economic growth fueled by foreign direct investment can also make the domestic currency appreciate, thereby making imports cheap and exports expensive. Currency appreciation can, therefore, negatively affect exports and make external debts more difficult to pay. Meanwhile, relatively cheap imports can undermine domestically owned businesses that sell
to domestic markets, a process which enforces dependency on outside producers and reduces the resiliency of the domestic economy (Stiglitz, 2002, p. 72).

Nations are often encouraged by the IMF and the World Bank to seek foreign direct investment as a means to develop. In their efforts to attract foreign investment, debtor nations usually succumb to pressure to roll back, refuse to enact, or refuse to implement environmental protections (Moyers, 2002; Rowbotham, 2000, p. 65). Environmental as well as worker protections are often treated as barriers to trade by the WTO, the IMF and the World Bank. Furthermore, foreign investors repatriate a large proportion of their profits. Therefore, these investments pay off first and foremost to foreign interests rather than serving primarily as a source for increased and diverse local investment. Furthermore, countries attempting to attract foreign investors typically reduce corporate taxes, thereby constraining the ability of government to serve domestic needs for social support, infrastructure repair and development, and environmental protection and restoration.

Foreign direct investment may stimulate economic growth, but this process is likely to be temporary. When opportunities arise to realize improved cost-of-production advantages elsewhere, foreign investors may pull up stakes and relocate, leaving the economy in perhaps worse condition than it was prior to experiencing external injections of capital (Achebar, et al., 2005; Black, 2001; Shuman, 2000). Through creating an atmosphere conducive to foreign direct investment, nations are likely to reduce their resiliency to economic shock and their potential for self-reliance since, in order to attract such investments, they typically damage their domestic productive base and under-invest in social development and environmental protection and restoration. Virtually all people who succumb to economic pressure to over-exploit their homelands and their people for profits, in a perverse twist, become increasingly dependent upon
the very economic system that drives them to engage in socio-ecologically damaging economic activity.

**Loan Conditions and Enforced Dependency**

IMF and World Bank loan conditions enforce dependency of the periphery on the core within the world-system, but they also create or stimulate market forces that enforce the dependency of the middle and working classes and the poor in all nations upon those who continue to capture and concentrate wealth and power globally. We now turn our attention to the oil price shocks of the 1970s in order to examine how the economic shocks that resulted greatly exacerbated the dependency of peripheral nations.

**The 1970s Oil Shocks and the Global South Debt Crisis**

The Arab embargo of oil exports to the United States in 1973 resulted from the U.S. support of Israel in the 1973 Arab-Israeli Yom Kippur or Ramadan War (Heinberg, 2005, p. 212). This embargo triggered a fourfold increase in global oil prices (see Manley, 1987, pp. 62-64). A second oil price shock in 1979 resulted from the Iranian Revolution which badly damaged that nation’s oil sector. Global South nations that were pursuing oil dependent development models to modernize and industrialize faced new and unexpected costs for a commodity that had become essential to their economies and to producing and distributing essential products and services (Manley, 1987, chap. 3). Hunger and poverty increased sharply in the Global South, and some regions even experienced an absolute decline in food grain consumption between 1976 and 1979 (Manley, 1987, p. 66). Globally, an economic recession was triggered, in part by high oil prices. The balance of trade for low-income countries turned sharply negative, and the debt burden for developing countries increased from $67 billion in 1970 to $438 billion by 1980.
Making a living in practically any business became much more difficult. It also became more difficult for Global South nations to earn foreign exchange (Manley, 1987, chap. 3).

During this period, many countries capable of exporting large amounts of oil accumulated immense surpluses of dollars because OPEC oil sales were (and continue to be) transacted solely in U.S. dollars. Low absorption capacity for these funds in the domestic economies of OPEC countries encouraged investments of these dollars in the U.S. A sizable proportion of this flood of dollars generated by high oil prices was lent by First World banking interests to developing countries in desperate need of dollars to finance oil purchases and other imports. This process of lending excess petrodollars, known as petrodollar recycling (Clark, 2005, pp. 21-23), greatly exacerbated the debt situation of developing nations.

The value of the dollar also declined in the 1970s, in part due to the negative balance of trade maintained by the U.S. during the Vietnam War, and the U.S. economy experienced stagflation. Prices of goods rose in dollar terms at the same time that domestic economic stagnation reduced employment and aggregate purchasing power. Interest rates were increased sharply in the U.S. in 1979 in an effort to prop up the value of the dollar (Clark, 2005, p. 22), and debtor nations saw interest rates on their dollar denominated, adjustable rate loans rise as a result (Manley, 1987, p. 70). This rise in interest rates, combined with deteriorating conditions for earning foreign exchange through exporting to the U.S., caused nations to default on their external debts.

This debt crisis in the Global South in the 1970s and 1980s resulted from the interrelated complex of dependency enforcing systems of power discussed above combined with historically specific circumstances deriving from fossil-fuel-dependent development. The oil shocks of the
1970s occurred for historically specific reasons but served to entrench global systems of power and exploitation as loan defaults paved the way for SAPs.

**Summary and Conclusions on the Role of the Bretton Woods Institutions in Enforcing the Dependency of Global South Nations**

Global growth economics and trade liberalization of the past fifty plus years have resulted in further impoverishment and negative social and environmental impacts in many nations (Dasgupta, 2001; Stiglitz, 2002). Since the Global South debt crisis of the 1970s and 1980s, new loans by the IMF and the World Bank have sometimes been made solely to allow a debtor nation to consolidate old loans with a new one (Rowbotham, 2000, p. 65). As anyone knows who has used one credit card to pay another credit card bill, the cycle of deepening debt imprisons the debtor, making him/her vulnerable to the demands of creditors. Many peripheral countries have found their entire export earnings insufficient to repay the interest alone owed on their external debt (Rowbotham, 2000, p. 51).

International finance has played a powerful role in enforcing the dependency of the periphery while privileging the core areas and transnational interests within the world-system. According to Rowbotham, “Debt … represents a powerful political instrument for subjecting debtor countries to international economic control and making them specialise at the level of production” (2000, p. 67), a process that reinforces their colony-like status and function within the world-system. To make matters worse, according to Kaplinsky (2005), the terms of trade have steadily deteriorated for the Global South as the prices of their exports have fallen relative to industrial nation exports of agricultural and manufactured goods and knowledge-intensive services (Kaplinsky, 2005, p. 187).

Within the world-system, IMF and World Bank loan conditions and SAPs have systematically served the interests of foreign creditors and investors at the expense of the people,
the environments, and the economies of debtor nations. Stiglitz cites a particular example of IMF programs functioning to bail out Western creditors. According to Stiglitz (2002), when foreign creditors anticipate an IMF loan agreement with a given nation, they have weakened incentives to make sure their debtors will be able to repay – a problem known as moral hazard (pp. 201, & 207-208). In these and other dependency enforcing situations, IMF loans create profit opportunities for creditors rather than helping the domestic economy thrive. In the end, dependency enforcing debt has served to undermine the long-term stability of entire societies and economies (Stiglitz, 2002, p. 209). This lack of stability characterizes the world-system and undermines its resiliency and sustainability.

The multiple reciprocally reinforcing aspects of enforced dependency built into the system of global finance create a global rentier economy of “resource grabs and debt dependency” (Hudson, 2005, p. xxvii). Rowbotham sums up this situation: “Debtor nations remit a perpetual tribute to the wealthy nations and their corporate interests, and are kept in a state of permanent monetary bondage as interest payments, profit repatriation and dividend payments siphon money from their economies” (2000, p. 123).

We now turn our attention away from the dependency enforcing systems of peripheral nation debt to explore how U.S. dollar hegemony and U.S. debt enforce dependency within the world-system.

**Dollar Hegemony, the U.S. Debt, and International Economic Co-dependency**

As noted above, with the Bretton Woods agreement in 1944, the U.S. dollar became the de facto world currency. The value of the dollar was pegged to gold, and the values for all other currencies were pegged to the dollar. The gold exchange standard ended in 1971 when the Nixon administration unilaterally refused to allow further exchanges of dollars for U.S. gold reserves
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and floated the U.S. dollar on the world currency market. Even without the backing of gold, the U.S. dollar has managed to remain the premier world currency. We will now examine how and why the hegemonic status of the dollar is maintained in the world-system. We will also examine the global effects of dollar hegemony.

As discussed above, the fact that many international loans are denominated in dollars provides the U.S. with political and economic leverage, but dollar hegemony creates additional advantages for the United States at the expense of the rest of the world. During the 1970s, worldwide speculative movement out of U.S. dollars occurred, in part, as a result of continued balance-of-payments deficits run by the United States (Hudson, 2005, pp. 94-95). As noted above, the Federal Reserve reacted by raising interest rates, thereby constricting the money supply and propping up the value of the dollar. Since the early 1980s, the value of the dollar and its status as a world reserve currency (meaning that U.S. dollars and dollar-denominated securities are held by non-U.S. central banks as well as by businesses and individuals around the world) has allowed the U.S. to accumulate huge balance-of-payments deficits. For the U.S., the total economic gain from supplying a world reserve currency (also known as seignorage) is equal to its cumulative balance-of-payments deficit on its import-export account. This deficit represents unpaid-for goods and services supplied to the U.S. by the rest of the world. This negative balance of trade has allowed the U.S. to maintain a relatively high standard of living for its citizens even as its manufacturing sector has been outsourced abroad. In 2004, the total accumulated amount of this deficit was around $3 trillion, and it was accumulating at around $1.3 billion per day (FEASTA, 2004, p. 5). The U.S. has been creating money from nothing and has been using it to purchase half again more imports than it exports. According to the Foundation for the Economics of Sustainability or FEASTA,
We can get a good idea of how big the $3,000bn subsidy has been by recalling that in 1998, the United Nations Development Programme estimated that the expenditure of only $40bn a year for ten years would enable everyone in the world to be given access to an adequate diet, safe water, basic health care, adequate sanitation and pre- and post-natal attention. (2004, p. 6)

These enormous gains reaped by the U.S. from seignorage account for the economic and military power of the United States. The U.S. has been able to develop its unparalleled military might because other nations finance its growing debt that enables heavy military spending (FEASTA, 2004, p. 5).

Although a large proportion of the $3 plus trillion deficit of the U.S. is held by creditors in the form of Treasury bills and bonds on which interest is being paid, payment of interest is actually financed through creation of further debt. The U.S. is able to import vast amounts of goods and services while simultaneously amassing a huge debt simply because of its position as the creator of U.S. dollars (FEASTA, 2004, p. 5). Of course, this arrangement depends upon continuing international faith in a growing U.S. economy. It also depends upon the unwillingness of creditors to pull their investments out of the U.S. economy due to the likelihood that doing so would threaten their own economic stability.

Michael Hudson describes thusly the process through which the U.S. effectively gets others to both pay its debt and maintain their investments in the U.S. economy:

The United States … [draws] on world resources through a novel monetary process: by running balance-of-payments deficits that it refuses to settle in gold, it has obliged foreign governments to invest their surplus dollar holdings in Treasury bills, that is, to relend their dollar inflows to the U.S. Treasury. (2005, p. 17)

This process is further supported by the fact that, in domestic markets worldwide, dollars are redeemed for domestic currencies at central banks, and central banks purchase Treasury bills with these dollars. Investing in Treasury bills – though they may provide lower rates of return
than investing in the private sector – has so far been deemed a comparatively safe investment by foreign central banks (2005, p. 30).

Through the aggressive use of seignorage, by 1971, “the United States [had] succeeded in establishing its own government debt as the key international monetary standard” (Hudson, 2005, p. 25). According to Hudson (2005), post-1971, expansionary monetary and fiscal policies were pursued irrespective of their balance-of-payments consequences. In the face of a growing payments deficit the U.S. Government accelerated federal spending and money creation, and watched foreigners bear the cost of financing this spending spree. (p. 25)

Hudson (2005) further explains the economic costs of these U.S. policies to foreign countries:

Foreign countries that run balance-of-payments surpluses presently are obliged to keep their central bank reserves in the form of loans to the U.S. Treasury ad infinitum. These savings become part of the U.S. financial system rather than building up their own productive capacity. There is no hard-currency guarantee for the value of these loans as the dollar falls against the euro, yen and other currencies of economies running trade and payments surpluses. In domestic-currency terms, the values of dollars held in central bank reserves declines. (p. xxviii)

Hudson (2005) continues: “In the past, nations had sought to run payments surpluses in order to build up their gold reserves. But now all they [are] building up [is] a line of credit to the U.S. Government to finance its programs at home and abroad” (p. 30). U.S. military spending and spending on foreign imports, in effect, translate into savings in foreign countries through their purchase of U.S. Treasury bills and bonds. Through this purchase of the U.S. debt and through other avenues in the global economy, many dollars spent overseas make their way back into the U.S. economy (Hudson, 2005, p. 32; Rowbotham, 2000, p. 125). These processes of simultaneously generating savings in foreign countries and purchases and investments in the U.S. economy increase the purchasing power and economic vitality of the U.S. while, at the same time, applying the brakes to other nations’ economies as the savings stimulated effectively remove from domestic circulation the money earned from exports sold to the U.S.
During the oil price shocks of the 1970s, the U.S. succeeded in convincing OPEC members to hold much of their excess dollar earnings in U.S. Treasury bills. Therefore, the oil price rises were less problematic than they might have been for the U.S. due to the recycling of U.S. dollars spent on OPEC oil back into the domestic economy (Hudson, 2005, pp. 108-110). In recent years, the U.S. Treasury bill standard has faced competition from investment opportunities denominated in other strong currencies, particularly the Euro. If the U.S. is to continue to convince OPEC to help finance its deficits, it must thwart the emergence of competing currencies and investment opportunities (Clark, 2005, chap. 1 & 5; Hudson, 2005, p. 258). In particular, the U.S. must succeed in maintaining the petrodollar system according to which the dollar is the sole currency used for OPEC oil purchases (Clark, 2005, chap. 1 & 5).

With the near complete demise of the U.S. manufacturing sector along with global reliance on the U.S. as the consumer of last resort, the status quo functioning of the global economy depends upon the U.S. government and consumers taking on increasing amounts of debt. The U.S. has actively promoted this form of international co-dependency which has allowed it to become the world’s sole superpower – but this situation cannot continue forever. American deficits may become so large that they scare off creditors, and the rest of the world may tire of the U.S. dominating the global economy while undermining the ability of other nations to complete. The recent U.S. unilateralism in international relations and war may further reduce the world’s tolerance for U.S. economic and political dominance (Clark, 2005, chap. 7). Still, for many countries, there are risks to dumping dollar-denominated investments on the world market and abandoning the petrodollar system – both of which would drastically reduce the value of the dollar – though for some nations and regions, the risks may eventually be outweighed by the growing instability of the current monetary and economic system. According
to Rowbotham (2000), “The aggregate of national debts coupled with the private/commercial debt directly associated with the money supply places … [wealthy] nations in a position of permanent financial exposure” (p. 97), and those exposed include creditors of the U.S.

The hegemony of the U.S. dollar, however, is perhaps beginning to crack under pressure from various directions. One point of pressure is the rise of competing currencies. Prior to the global economic downturn that began in 2008, the Euro was rising in value compared to the dollar. Another source of pressure has been stable and profitable investment opportunities offered by rising and integrating economies outside the U.S., particularly in Asia and Europe. At the time of this writing, the Eurozone as a whole has been destabilized by overly-indebted member nations and the negative economic effects of the global recession. As a result, the value of the dollar has risen again relative to the Euro. It will take some time to see how the relative strengths of the two currencies play out within the global economy, but the recent rise of the Euro demonstrates the possibility of other currencies to eventually compete with the dollar on the world stage.

Another threat to U.S. dollar hegemony is represented by the power of OPEC, power that will only increase as the realities of peak oil enforce the dependency of economies worldwide on OPEC oil supplies, which are by far the largest in the world. Using their unique endowments of oil, OPEC nations could choose to extend credit to foreign purchasers conditional upon these countries allowing them to purchase their domestic assets, a condition that would extend their political influence. Such a move would weaken the political and economic power of the U.S., thereby weakening its ability to entice other nations to accept the Treasury bill and petrodollar standards (Hudson, 2005, p. 267).
We now turn our attention to the hegemony of global capitalist elites and culture in an effort to understand how this form of hegemony enforces dependency within the world-system.

**The Hegemony of Global Capitalist Elites and Culture**

Late capitalist culture and economy inform and reinforce each other reciprocally. Global capitalist elites maintain hegemony through wielding their power and wealth in ways that promote continued concentration of power and wealth in their own hands, thereby, furthering their ability to reproduce and reinforce hegemonic economic and political relationships.

The concepts of private property and the enforcement of private property rights are central components of capitalist cultural hegemony (Achebar, et al., 2005; Polanyi 1944/1957; Proudhon, 1902/1966). Commodification, privatization of public assets and enterprises, the extension of the concept of private property into ever more areas of life, and the enforcement of intellectual property rights all represent modern versions of enclosure of the commons. Capitalism has been able to continue its global expansion of production and consumption, in part, due to private takeover of resources and services that were once considered public commons. Increasing privatization and commodification of essential resources such as land, water, seeds, and other genetic material essential to food production increase dependency of the world’s communities upon globalized capital even as they increasingly concentrate wealth and power within the world-system (Barlow & Clarke, 2002; Garcia, 2004; ICIJ, 2003; Ludwig, et al., 2006; Shiva, 2000). That this dependency extends into areas essential to life further promotes the socio-ecological control and the entrenchment of capital.

The global concentration of wealth and power in the hands of transnationals and corporate and banking elites furthers the ability of capital to advance its economic and cultural agenda. We examined above many policies and practices that serve to concentrate wealth and
power in progressively fewer hands. Growing income gaps between the rich and poor provide
evidence that this concentration is occurring, and these gaps have never been greater than at this
point in time (Homer-Dixon, 2006, p. 186). During the last decade of the 20th century, despite
promises that globalization would reduce poverty if developing countries would stay the
neoliberal course (Stiglitz, 2002, p. 213), the numbers of those in dire poverty grew by almost
100 million people at the same time that world income increased by an average of 2.5 percent
annually (Stiglitz, 2002, p. 5). Development proponents often point to relative rates of economic
growth as an indication of economic convergence, saying that those developing countries
experiencing high growth rates will catch up with the industrial world in terms of living
standards. Homer-Dixon (2006) explains why citing these figures as evidence of near term
convergence is a fallacy:

Now this may look like a convergence because incomes in poor countries are predicted to
grow faster than those in rich countries. But it’s not. The gap between poor and rich
average incomes will continue to widen: although the average income of rich countries is
growing at a slower rate, this rate multiplies a vastly larger income base – $32,000
annually per person in 2006, according to the [World] Bank, compared with $1,500 in
poor countries. So the absolute size of the gap between the average incomes of rich and
poor countries steadily widens. And it widens not just for a few years or even a few
decades but for hundreds of years to come. (p. 190)

Furthermore, the economic growth imperative deepens these disparities because core producers
exploit their advantage in the global economy at the expense of peripheral producers who find it
all but impossible to compete (Homer-Dixon, p. 200).

The corporate legal structure also contributes to concentration of wealth and power that
promotes capitalist elite hegemony. Unlike people, corporations are immortal. When a person
dies, his/her resources are usually distributed among surviving relatives and friends and possibly
to chosen charities, foundations, and causes. Since corporations tend to outlive particular CEOs
and boards of directors, they can often continue to concentrate wealth and power for long periods
of time so that successful transnational corporations possess economic power unknown to previous generations.

The global movement toward finance and speculation as the central vehicle for profit generation also reinforces the concentration of power and wealth because it takes money to make money through investment and speculation in the global economy, and the more money one has available, the larger the potential for profit. Although the possibility for extensive financial loss also exists, one cannot even enter this playing field without significant capital backing. This new focus in the global economy, therefore, advances the hegemony of capitalist elites.

The continual focus on lowering inflation in the U.S. and Britain reveals how the interests of the wealthy and powerful also influence fiscal and monetary policy. Since inflation tends to benefit debtors over creditors, it is to be avoided. According to Stiglitz (2002), “For the financier who has lent his money out long term, the real danger is inflation. Inflation may mean that the dollars he gets repaid will be worth less than the dollars he lent” (p. 217). While there is agreement that no economy can succeed under hyperinflation, “there is little evidence that pushing inflation to lower and lower levels yields widespread economic gains commensurate with the costs, and some economists even think that there are negative benefits from pushing inflation too low” (Stiglitz, 2002, p. 220). In the global context, the IMF insists that “countries have an independent central bank focusing on [reducing] inflation” (Stiglitz, 2002, p. 45). This policy embodies a clear creditor bias. If the IMF were more concerned with diverse and widespread economic development, it might focus at least as intently on employment and growth, which we have seen it does not (Stiglitz, 2002, p. 45). We see that the fiscal and monetary policies within globally hegemonic economies and within international banks that serve the interests of hegemonic capital serve to advance the interests of capitalist elites within
the world-system, thereby helping these elites to perpetuate global economic culture in their own image.

Culturally, corporate and government officials involved in international trade and finance tend to view the world through the eyes of large corporate entities since these are the heavyweights in global political economy:

 Multinational corporations … have been accused of a catalogue of crimes; blackmailing national governments to grant them subsidies; exerting pressure to change government economic policy; asset-stripping; exploitation of the developing world; transfer pricing to avoid taxation; acquiring by patent law rights that ought not to belong to any single private interest – the list is endless. The fact that these issues have not been addressed, indeed are not even on the agenda, lends support to the concern that the tier of international governance is pro-corporate. (Rowbotham, 2000, p. 4)

Furthermore, corporate elites and international power brokers often conflate freedom with capitalism – free markets with free people. To the proponents of the global economy, globalization is synonymous with progress, and developing countries must accept neoliberal globalization as the route to becoming an American-style capitalist society (Stiglitz, 2002, p. 5).

It is also important to consider both what is on and what is off the neoliberal agenda. Since entertaining challenges to globalization from client countries would open the door to questioning neoliberal orthodoxy, core entities stifle discussion of alternate economic strategies and policies, and leaders within the dependent periphery generally avoid openly questioning neoliberal imperatives (see Stiglitz, 2002, p. 43). There may be money to bail out banks but not to pay for improved education and social services, nor to assist those who become unemployed as a direct result of neoliberal policies (see Stiglitz, 2002, pp. 43 & 81). Considering the neoliberal agenda in this way reveals its hegemonic foundations.

In the case of the neoliberal policies of the IMF and the World Bank, we have seen that these institutions do not represent the broadly based interests of developing countries.
Furthermore, by tradition, the head of the IMF has always been a European, and the president of the World Bank has always been an American. These leaders are chosen behind closed doors, and they often have little experience in the Global South (Stiglitz, 2002, p. 19). Stiglitz (2002) asserts that the IMF and the World Bank are “driven by the collective will of the G7” (p. 14) so that these institutions advance elite capitalist hegemony.

There is also a problem with those who speak for given Global South countries. At the IMF, finance ministers and central bank governors govern the institution; at the WTO, trade ministers represent their countries. Representatives sent to each of these institutions tend to represent a select constituency within each country they represent: trade ministers representing the interests of the business community and finance ministers and central bank governors representing the financial community. The interests of a small minority – and a minority whose interests closely approximate those of the business and financial communities in the developed world – are advanced over the interests of the vast majority of the population of many countries. This situation is profoundly undemocratic. Concerns for the environment and social justice are virtually ignored (Stiglitz, 2002, pp. 19-20) while the interests of national elites and global capital are advanced.

Homer-Dixon summarizes thusly important cultural and economic processes that reinforce the hegemony of global capitalists:

There are the social causes of denial [of the social and environmental problems created by globalization]. Probably the most important is the self-interest of powerful groups – corporations, government, agencies, lobbyists, religious institutions, unions, nongovernmental organizations, and the like – that have a vested interest in a particular way of doing things or viewing the world. If outside evidence doesn’t fit their worldview, these groups can cajole, co-opt, or coerce other people to deny this evidence. Some groups … will be much more effective in the effort than others, owing to their enormous political and economic power …. Our economic elites don’t just encourage consumerism. Through their influence on the media and on our society’s political process, they create, reproduce, and justify a pervasive and interlocking system of rules and institutions – from
property rights and capital markets to contract and labor laws – that promotes growth and that, in the process, buttresses their power and privilege. A particular language of capitalism – a ‘discourse’ of economic rationality and competition that penetrates into every nook and cranny of our economies, societies, and lives – helps us understand and abide by these rules and institutions. This language says that people maximize their pleasure from consumption and that they make decisions as if they were calculating machines, constantly weighing costs and benefits to evaluate their choices. Capitalism’s language also says that our labor is a commodity to be bought and sold in the competitive marketplace. And it equates our personal identities with our economic roles in that marketplace…. For the vast majority of us who sell our labor in the marketplace, our economic insecurity and relative powerlessness impel us to play by the rules. And in capitalist democracy, playing by the rules means not starting fights over big issues like our society’s highly skewed distribution of wealth and power. Instead, it means focusing on achieving short-term material gains – such as bettering our contracts with our employers. Put simply, our economic elites have learned, largely through their struggles with workers in the first half of the twentieth century, to protect their status by creating a system of incentives, and a dynamic of economic growth, that diverts political conflict into manageable, largely nonpolitical channels. And long as the system delivers the goods – defined by capitalist democracy itself as a rising material standard of living and enough new jobs to absorb displaced labor – no one is really motivated to challenge its foundation. (2006, pp. 215-217)

As noted in chapter two, Marcuse (1964) calls this complex of processes (that reinforce the hegemony of dominant groups through the creation of a system that is perceived to be serving the interests of people at all levels of society) “repressive desublimation.” Antonio Gramsci (1971) labels such processes “passive revolution” that serves to contain the contradictions of the capitalist system. Like Marcuse and Gramsci, Homer-Dixon (2006) argues that challenges to capitalist processes of enforced dependency are unlikely to come from the upper echelons of society saying that “members of our economic elite rarely have qualms about the prevailing economic worldview because it sustains their status, and because they generally believe that they’ve achieved that status through their superior intelligence, guts, and drive” (p. 218).

At the same time, the cultural hegemony of the late capitalist word-system inhibits challenges from below, not only through enforced dependency, but through hegemonically pervasive capitalist culture. According to Homer-Dixon (2006),
The tacit arrangement among our elites, our experts, and the rest of us is essentially symbiotic – a mutually gratifying and self-sustaining cycle of denial and delusion. Through our acquiescence in and often active support of modern capitalism, we legitimize our elites’ and experts’ status and power, while those elites and experts give us an overarching ideology of permanence, order, and purpose that lends our lives a sense of place and meaning. According to this ideology, economic growth is a panacea for all our social and personal problems. Growth equals health. Unfortunately … when we’re in denial, we can’t think about the various paths that we might take into the future. Nor can we prepare to choose the best path when the opportunity arises. Radically different futures become literally inconceivable – they are ‘beyond imagining’ … in the same way the heliocentric cosmos was inconceivable to many people prior to the Copernican revolution. (p. 219)

Stiglitz (2002) describes the situation thusly:

We have a system that might be called global governance without global government, in which a few institutions – the World Bank, the IMF, the WTO – and a few players – the finance, commerce, and trade ministries, closely linked to certain financial and commercial interests – dominate the scene, but in which many of those affected by their decisions are left almost voiceless. (pp. 21-22)

Through examining the closely reciprocal relationship between cultural and economic hegemony, we see that profound changes in the material circumstances of life create profound changes in consciousness and vice versa in a cycle that continually deepens enforced dependency within the late capitalist world-system. These cultural and economic processes that characterize late capitalism explain what might at first glance appear to be the surprising degree of global acceptance of hegemonic ideas and actions among both global elites and the global oppressed.

Of course, there are counter hegemonic groups, such as the Zapatistas in Chiapas, Mexico (Marcos, 2001), and indigenous groups fighting to maintain their traditional economies and cultural/spiritual ties to place (Grossman, 2005; LaDuke, 1999). These groups raise important challenges to globalization, but globalization as an economy and a way of life continues to spread – new markets are opened and the money economy colonizes the few remaining locally based and subsistence economies left in the world (Berry, 1987; ISEC, 1993; Martinez, 1997; Shuman, 1998).
Now that generations all over the world have grown up and are growing up in a thoroughly globalized world, the lines of cause and effect that informed the development of our economic, cultural, and ecological world of late capitalism are further obscured by lack of social memory. Young adults and youths have no direct experience with a world before globalization. The world as it is now is taken as a given by many young people, and given Western culture’s ingrained notion of progress, the world that is now is assumed by many to be the best of all possible worlds. Young people have been acculturated into the values system of modernity (Spretnak, 1997) and its outgrowth, the globalized world.

**Globalized Society as a World-system of Enforced Dependency Lacking in Resiliency**

Historically, once subsistence cultures of place were broken down and colonies were folded into the capitalist system, the dependency of colonized regions was enforced through brute force and later through the creation and enforcement of economic rules and practices. Within the world-system, dependency that was originally enforced by nation states has continued in the late capitalist era in spite of the erosion of nation states’ influence by the forces of globalization. Once an individual, a community, or a nation has become dependent upon the capitalist system, there is virtually no escape. Furthermore, the world-system relies upon this dependency in order to feed the engines of economic growth and to maintain the global political and economic dominance of the capitalist elite. As we have seen, the system is virtually impossible to escape for debtor nations faced with the choice to comply or collapse economically, but it is also difficult to escape for individuals who lack access to the productive capacities of the land and/or who lack the knowledge and experience necessary to make use of these capacities. We have focused attention on macro level analysis here, but dependency is enforced even at the very personal level of individuals and families. The urban poor are typically
entrapped in the day-to-day struggle for existence, and wealthy and middle-class individuals, too, are often heavily indebted to banks. Escape from extreme dependency is possible, as we shall see in later chapters, but it is very challenging – and, at least initially, it typically comes at a high cost in terms of personal security and social inclusion, a cost some simply cannot afford to bear. Furthermore, many of those who are systematically disadvantaged within the world-system suffer from poverty, poor health, and lack of education, and each of these problems typically compounds and reinforces the effects of all the others in a process that creates powerlessness (Stiglitz, 2002, p. 83).

The complex global systems of enforced dependency are highly unstable and vulnerable to near-term collapse. Continuing inequities within the global economy promote conflict, both within nations and internationally as late capitalist cultural hegemony loses its grip on containing social and economic contradictions. At the same time, socio-ecological resiliency is continually sacrificed to fuel the engines of global economic growth. As global society realizes diminishing returns on increasing social and economic complexity, the world-system becomes increasingly vulnerable to collapse (see Tainter, 1988). Furthermore, the likelihood that collapse will be catastrophic increases as globalization encourages tight linkages among components and processes of the world-system, making the boom and bust phases of the business cycle increasingly likely to trigger global-scale economic breakdown (see Homer-Dixon, 2006, chap. 9). Environmental damage and stress, and loss of diversity in human and ecological systems compounds these problems, further increasing the potential for global social, economic, and ecological disaster. The monocultures promoted within the world-system in agriculture, popular culture, materialism, and employment are inherently unstable due to their lack of diversity and their heavy reliance upon petroleum-dependent transportation of goods. Simultaneously, global
free market competition in the world-system reduces resiliency because globalization channels power and wealth into the hands of a few while disenfranchising many small-scale, local producers and decreasing diversity in economies, ecosystems, and communities. These tensions serve as sources of ever-present and ever-increasing economic and social instability.

Though development bank and corporate officials may see themselves as helping the poor by investing in the Global South, in reality, the institutions and processes of enforced dependency, both global and national, have been created by the powerful in order primarily to serve their own interests, and this service has come at the expense of the oppressed. These institutions and processes actively resist a redistribution of wealth and power that would materially benefit the victims of privilege. Such redistribution would require hegemonic groups to adopt a virtually opposite set of priorities and interests to the ones they have actively advocated for many years, perhaps for entire professional lifetimes. Even if global capital were to genuinely promote economic growth in Global South, economic growth itself is neither a desirable nor sustainable end in socio-ecological terms. The fossil fuels that drive the global shipping and mass production requisite within the late capitalist global economy are depleting. We appear to be reaching the physical – if not also the moral – limits of late capitalist globalization.

After exploring in some depth late capitalism as a world-system of enforced dependency, the question we are left with is this: if the dreams of the late capitalist paradigm are counterfactual to aspirations for a socio-ecologically sustainable society, what kind of dreams should we aim to realize? If we begin with the goal of eliminating systems of enforced dependency in an effort to create or restore diverse and resilient societies, I believe we are on the right track. I will explore possibilities for social change along these lines in the next two chapters.
on the political economy of place and on local food as a vehicle for building more sustainable, self-reliant, and resilient communities. Chapter six will then build upon all the previous chapters in this dissertation. In that chapter, I will advocate for sustainability-oriented educational praxis to play an important role in reshaping our socio-economic and socio-ecological systems.
Partisans of neoliberal globalization have attempted to make geography irrelevant. Social and environmental regulation of business – traditionally enforced by nation states within their geographically based jurisdictions – have eroded in the face of international free trade treaties that tend to create a ceiling rather than a floor for the degree of regulation possible in any given nation. Subsequently, large corporate entities have been freed to utilize their size, capitalization, and technology to out-compete smaller producers and service providers in a growing number of locales globally. These advantages allow transnational corporate entities to increasingly approach monopoly status and structure. Monocultures of agriculture and of human consumer culture extend their reach and intensify human dependence on the global economy for access to both the luxuries and necessities of life. These monocultures and the deregulated and footloose capital that created them place increasing pressure on ecosystems everywhere to fuel the provisioning system that is the global economy and to create the economic growth that economy requires to avoid collapse. Fossil fueled global systems of transportation ship uniformly requisite products from producers to consumers everywhere. Diversity in human culture and adaptation to place diminish. Meanwhile, the fossil fuel supply on which the global economy hinges its existence may have hit peak production, or will in the next few years.

This chapter is an exercise in hope – hope for (re)creating sustainable and fulfilling human/nature lifeways. By hope, I do not mean faith in a predictable or successful outcome. I mean working toward rectifying the damage inflicted on people and nature by the unsustainable systems of industrial civilization, even in the face of uncertain and likely uneven results (see Havel, 1990, p. 180). I hope to provide a theoretical framework for ways being in the world that nurture humans and nature simultaneously – physically, emotionally, intellectually, and
spiritually. The contradictions represented in the depletion of the natural world and the violent severing of human heart from head within the modern capitalist world along with the widespread lack of recognition of the self in others and in nature threaten the very survival of our species and the health of natural systems globally. This chapter represents an effort to identify paths for countervailing action in the midst of the global sustainability crisis, paths that hold at least the potential, and therefore the hope, for (re)generating sustainable lifeways.

In this chapter, I argue for (re)localization of communities as essential for living sustainably. I consider Western and non-Western theories and cultural traditions of (re)localization as an expression of the need for humans to live within nature and within natural limits as opposed to separate from and on top of nature. Drawing on the philosophy and living praxis of sustainable indigenous lifeways as well as the work of sustainability activists and theorists rooted in the Western European cultural tradition, I articulate and elaborate a complex of interwoven themes for collective sustainability praxis.\footnote{The praxis of place-centered sustainability involves situated generation of theory through reflection on practice. Practice informs theory, and theory informs practice reciprocally within the unity that is praxis.} Indigenous models of inhabitation and reciprocal relationship with nature serve as some examples of potentially sustainable and fulfilling lifeways that have embodied sustainability for millennia. More recent movements such as the Transition Movement initiated in Europe, the Sarvodaya movement in Sri Lanka, and the Navdanya movement in India as well as widespread efforts toward “repeasantization” worldwide serve as additional contemporary examples of living sustainability. I propose that the revitalization of indigenous cultures and the (re)localization and sustainability-oriented (re)characterization of modern globalized communities represent parallel and complementary efforts. I further propose that the socio-ecological themes that orient sustainable societies coalesce in the concept and construct of place – place itself being a dynamic interweaving of
nature and society. Place, as both a concept held in the minds of humans everywhere and as a physical embodiment of the human/nature relationship, serves as the mental and physical container for realizing socio-ecological sustainability. I propose that both the mental and physical aspects of place are highly adaptable to diverse socio-ecological contexts and that, at the same time, sustainable manifestations of place embody certain socio-ecological themes.

This chapter builds upon the critical social theory of sustainability articulated in chapter two. That body of theory serves as a foundation for elaborating themes of sustainable, place-based living and learning and as a platform for theorizing sustainability praxis. This chapter also builds upon the theory of enforced dependency – a globally pervasive organizing theme within late capitalist political economy – articulated in chapter three. These two bodies of theory form a foundation for my argument that place-based, sustainable living can serve as an effective negation to unsustainable, late capitalist globalization. I argue that place-based sustainability is about creating local self-sufficiency and self-determination. I propose it can progressively reduce the momentum of the capitalist world-system of integration and dependency while, at the same time, progressively increasing community resiliency\(^29\) in the face of the converging socio-ecological crises of climate change, peak oil and gas production, and widespread ecological destruction and collapse. I elaborate in this chapter themes for place-centered sustainability education and praxis that I believe are relevant and adaptable to diverse communities globally.

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\(^29\) Resiliency is akin to “dynamic stability” as defined by Jane Jacobs (2000) and to “resilience stability” as defined by Odum and Barrett (2005). According to Jacobs (2000), systems that are dynamically stable make effective use, through continual self-correction, of information fed back to the system. Such systems resist collapse and disintegration (pp. 84-85) as do ecosystems that demonstrate resilience stability as defined by Odum and Barrett (2005): “Resilience stability indicates the ability to recover when the system has been disrupted by a perturbation” (p. 70). Jacobs (2000) also emphasizes how diverse uses and reuses of matter and energy in an economy are essential to its diversification and resultant resiliency, just as diverse use and reuse of matter and energy flows is critical to development of resilient ecosystems (pp. 43-63).
At the same time, as noted in previous chapters, I recognize the breadth and depth of the challenges to sustainability represented by neoliberal cultural, political, and economic hegemony. I also recognize that there is a significant possibility that place-based sustainability praxis will be unable to successfully reverse the tsunami of socio-ecological destruction unleashed by the exploitation of nature and people that characterize the capitalist world-system. Still, as an expression of our love for our children and for nature, I argue that we must do all we can to (re)inhabit our places in sustainable ways – it is never too late to do the right thing, and the time has perhaps never been more ripe for (re)situating our cultures and economies within the bounds and bounty of place.

**The Absolute Negative Moment of Praxis**

Place-centered sustainability praxis works to decrease enforced dependency at the same time that it increases resilience within communities, thereby draining power from capitalist hegemons and increasing the ability of communities to fulfill their own needs. Through its process of creating viable alternatives to globalized capitalism, place-centered sustainability can represent the absolute negative moment of praxis. Absolute negativity consists of two forms of negation. Firstly, it is characterized by counterhegemonic thought and action – the negation of the current capitalist world-system, a vital step toward sustainability. The second negation is accomplished through negation of the definition of praxis in negative, oppositional terms alone so that praxis can manifest itself as a creative force free from self-definition solely in relationship to the capitalist order. Absolute negativity is a self-reflexive, historically situated process that translates critique into constructive praxis (see McLaren & Kumar, 2009).

The absolute negative moment of praxis correlates with place-centered creation of new lifeways that are resilient and self-sustaining and in which people participate freely. Engaging in
creative activity characterized by the second negation does not mean, however, that the time for critique is over. Instead, the first and second negations of absolute negativity intertwine in praxis so that critique and creative generation of alternatives continually inform one another. Although I recognize the importance of the first negation of the capitalist order and have engaged heavily in this activity in chapters two and three, it is the second negation that is the focus of this chapter.

We now turn our attention to the thematic content of the absolute negation of the capitalist order represented by the creative and (re)vitalizing praxis of place-centered, socio-ecological living sustainability.

*(Re)localization and New/Old Conceptions and Measures of Efficiency and Progress*

The negation of the enforced dependency of globalized late capitalism hinges on alternatives in praxis, many of which have been well developed theoretically and/or are in the process of being implemented in locations worldwide. I do not propose to recapitulate the theories of others, but a brief introduction to some of them will aid us in envisioning some of the specifics of how (re)localization can work in practice. All of the works addressed here challenge modern neoliberal concepts of efficiency and progress by asking such questions as: Progress for whom? Efficiency for whom? Who or what pays for gains in efficiency and progress? What are and what should be the economic and socio-ecological goals of efficiency and progress?

The work of Jane Jacobs (1969, 2000) represents a path breaking articulation of a rationale and a program for (re)localization. In *The Economy of Cities* (1969), she offers an important and detailed analysis of how and why an economy characterized by local business ownership benefits local residents more, both socially and economically, than does an economy based on local jobs provided by nonlocal capital investment. Jacobs promotes the idea that local economies should engage in import substitution development and should invest capital locally.
rather than exporting it through loans made outside the community. She also clearly articulates how multiplier effects that result from locally spent money recirculating within local economies increase local economic wealth, diversity, and resiliency.

Her insights on the economic and social value of a localized economy represent a radical departure from dominant economic theory which touts the benefits of geographic specialization based on comparative advantage. Jacobs’ place-centered, diverse approach to economic development promotes increased resiliency when compared to more commonly used approaches to economic development such as export-led development strategies at the national level and relocation incentives offered to transnational corporations by national, state, and/or city governments. Jacobs’ work deeply informs my conceptual framework regarding place-centered sustainability, and she has influenced a host of other theorists and practitioners who argue the importance of (re)localization of economic and social life including Shuman (1998/2000), Kemmis (1990), and Calthorpe (1993). In her work, Jacobs (1969, 2000) proposes to refocus efficiency and progress toward benefiting diverse social needs within a broad community rather than benefiting the centralized engines of monopoly capital, and she proposes to do so within a context of socio-ecological sustainability (2000).

In his book Going Local: Creating Self-Reliant Communities in a Global Age, Michael Shuman (1998/2000) articulates a rationale and a program for local economic vibrancy and resiliency specifically targeted at reducing community vulnerability to footloose capital whose overriding interest is its bottom line. As noted in chapter three, in the age of globalization, footloose capital will often relocate its production facilities if it can increase its profits, even if this means sentencing an entire community to economic and social decay. Shuman advocates a multitude of strategies for reducing community vulnerability to both the vicissitudes of capital
and environmental degradation. These strategies include import substitution, the creation and use of localized currencies, localized capture and production of renewable energies, localized ownership and control of businesses and banks, local investment programs for banks and pensions, widespread involvement in local politics, and devolving political control to local communities. Like Jacobs (1969, 2000), Shuman (1998/2000) conceptualizes efficiency and progress within a socio-ecologically sustainable framework that would have the economy serve the community rather than the other way around.

In their book *Superbia! 31 Ways to Create Sustainable Neighborhoods*, Dan Chiras and David Wann (2003) construct similar arguments to those of Shuman (1998/2000) with regard to (re)localization, but their focus is at the neighborhood level specifically within suburbia. In his book *The Next American Metropolis: Ecology, Community, and the American Dream*, Peter Calthorpe (1993) also specifically addresses suburbia in his promotion of new urbanist design as a (re)development strategy for creating a built environment conducive to socio-ecological sustainability and cultural vibrancy. The authors of these works advocate slowing down modern transportation by encouraging walking and biking and taking the time to develop relationships with neighbors that can form a foundation for sustainability-oriented community action. These authors question the idea that “progress” for people and communities translates to increasing the speed and isolation of modern life.

Similarly to Shuman (1998/2000) and Chiras and Wann (2003), economist Richard Douthwaite (2004) proposes that relocalization is essential for sustainability. He argues that the global standardization of commodity culture places unsustainable pressures on people and ecosystems to produce the same food, materials for housing, clothing, and other materials and products for people who desire and need them worldwide (2004, pp. 116-117). As noted in
chapter three, Douthwaite (2004) also argues that the global monetary system is inherently both 
unstable and unfair in the way it concentrates power and wealth in those nations that create world 
reserve currencies, foremost among these being the United States (pp. 115-116). He and his 
colleagues at The Foundation for the Economics of Sustainability (FEASTA) argue for monetary 
reforms that address the looming economic crisis resulting from inevitable declines in global oil 
production. The reforms FEASTA promotes would also bring reductions in emissions of carbon 
dioxide while, at the same time, redistributing concentrated wealth to benefit the poor in the 
Global South (FEASTA, 2008). As a means to increase local self-reliance and economic 
resiliency, Douthwaite (1999a) also advocates the use of local currencies. All of these policies 
confront the conceptions and measures of efficiency and progress proffered by monopoly capital 
in favor of measuring progress and efficiency in terms of resiliency and sustainability.

As discussed in chapter three, the bottom-line efficiency and technological progress of 
neoliberal globalization require an ever increasing supply of fossil fuel energy. Richard 
Heinberg, author of *The Party’s Over: Oil, War and the Fate of Industrial Societies* (2005), and 
the makers of the film *The End of Suburbia: Oil Depletion and the Collapse of the American 
Dream* (Greene, 2004) call upon us to envision and create societies where people can live 
fulfilling lives without consuming unsustainably. Renowned petroleum geologist C. J. Campbell 
and permaculturist Graham Strouts call upon us to do the same in their book *Living through the 
(1999) and *Energy Autonomy* (2007), German parliamentarian and renewable energy activist 
Hermann Scheer argues for localized production and capture of renewable energy as a response 
to both climate change and peak oil. An important part of Scheer’s argument entails the 
recognition that decentralized, renewable energy represents a significant opportunity to reverse
the concentration of wealth and power in the global economy and in national and global politics. Rob Hopkins, founder of the Transition Movement that began in Europe and is spreading worldwide and author of *The Transition Handbook: From Oil Dependency to Local Resilience* (2008) offers a set of principles and processes for engaging in what he calls *transition initiatives*. These principles emphasize, not only achieving material sufficiency within a mostly localized economy, but also promoting socio-ecological sustainability, themes also present in the works of other authors and film makers mentioned here (Campbell & Strouts, 2007; Chiras & Wann, 2003; Douthwaite, 1999a, 2004; Greene, 2004; Heinberg, 2005; Jacobs, 2000; Shuman, 1998/2000). If socio-ecological sustainability were to become the measure of social success, as these authors and filmmakers argue it should be, neoliberal capitalist notions of efficiency and progress would be turned on their heads. Concentrations of wealth and power and the centralized, hierarchical decision making structures that these concentrations engender would devolve into decentralized, locally-adapted governance structures and widely shared material wealth.

I have offered here only a sampling of the many cogent proposals for (re)localization as a sustainability strategy. In chapter five, I will explore in more detail how local food can serve as an appropriate nexus for sustainability and sustainability education praxis. Local activists, green politicians, educators, food producers, and other community members residing in villages, towns, and cities worldwide are currently articulating and implementing localized sustainability strategies tailored to their particular situations. In all of these efforts, we can recognize the value of making human to human, human to nature, and nature to nature ecological relationships visible and tangible within local processes of production and consumption. This immediacy can counteract the abstraction of modern, globalized living that obscures important relationships of
cause and effect and, thereby, encourages collective violence against people and nature in the name of progress and efficiency.

My work of highlighting in this chapter the underlying and sometimes unstated themes that inform pace-centered sustainability praxis is not an idealist exercise. It is rooted in the both history and the diversity of experience of human life on planet earth. The articulation of these themes is rooted in Gramscian (1971/1999) praxis as discussed in chapter two. According to Gramsci (1971/1999), ideas themselves are conceived of as historically situated in parallel fashion to material circumstances. For Gramsci, ideas and materiality co-create and are created by the processes of history (p. 369). The collective praxis of articulating themes for (re)localized, sustainable living derives from diverse, yet globally integrated, experiences with the palpable failures of the capitalist world-system of colonization and exploitation of people and place. This praxis also engages with the potential for an absolute negative break in the continuum of the current socio-ecological paradigm and, therefore, the possibility for sustainability-oriented living outside and beyond the capitalist order.

The remaining thematic threads discussed in this chapter articulate with the overarching theme of (re)localization. These themes represent conceptual foundations for sustainable community praxis that can be adapted to specific natural and social contexts. Engaging in praxis guided by these themes will not, in itself, resolve the social contradictions fostered by entrenched global powers, but such action can reduce enforced dependency and increase community resiliency in diverse contexts worldwide. Communities engaged in place-centered community praxis that draws on the following themes can become less vulnerable in the event of a collapse of the late capitalist economic system and associated governance structures. In the event that nation states persist but become more or less paralyzed in their abilities to enforce rules and
policies due to lack of funds and/or lack of energy resources, place-centered communities with strong local economies and with neighbors who know each other and who share a history of collective community decision making and mutual support will be better prepared for self-governance and self-sufficiency than communities that remain tightly tethered to the global political economy.

**Ontological Foundations for (Re)Inhabitation**

Place-centered sustainability education and praxis are rooted in an ontology in which humans, other life forms, and elements of life-sustaining systems exist – and can only exist and maintain their dynamic stability – through reciprocating relationships with one another. In many indigenous incarnations of such an ontology, human life is not conceived of as radically different, separate from, and superior to other creatures (Salmon, 2000, p. 1331) – a hierarchical relationship that would seem to justify exploitive relationships to nature. Place-centered sustainability recognizes that humans are embedded within nature and are subject to nature’s laws and limits, though humans change nature and, through their cultural engagement in the economy of life, can also contribute to the diversity, resiliency, and vitality of natural systems (Grim, 2001; LaDuke, 1999); Mann, 2002; Martinez, 1997, 2010; Salmon, 2000, p. 1331; Sveiby & Skuthorpe, 2006).

Indigenous spirituality offers many examples of ontologies that recognize the holistic circle of life in which everything and every being is related to every other thing and being. Many traditional indigenous cultures conceive of this relationship as familial so that the ethic of care one has for family extends to other people and the whole of nature (Grim, 2001; LaDuke, 1999; Norberg-Hodge, 1991/1992; Salmon, 2000; Sveiby & Skuthorpe, 2006). Some have argued that monotheistic religions such as Christianity desacralize nature and, through promoting the
concept of human dominion over nature, encourage exploitation of other creatures and the environment (see for example Merchant, 1996). While the potential certainly exists for monotheism to encourage exploitation of nature, themes of stewardship of nature as a duty of righteous people also exist, for example, in Christianity (Barbour, 1991, pp. 74-77; Moyers & Casciato, 2006), demonstrating that monotheism can be reconciled with an ethic of care for nature and an understanding of the reciprocal roles of nature and humans in sustaining one another.

While I draw examples from indigenous cultural beliefs and practices in arguing for a holistic ontology of life and the earth and for other aspects of the praxis of place-centered sustainability, I want to be clear that I do not advocate that non-indigenous people adopt indigenous beliefs and cultures. To do so is – not only undesirable in terms of authentic praxis – but impossible. One cannot and should not attempt to appropriate the history and culture of others whose relationships to place and concomitant spiritual beliefs represent authentic, multigenerational engagement with place through lived experience that constitutes the very being of individuals and cultures. Such appropriation represents a form of commodification and consumption of the other, even when well-intended. I also wish to avoid giving the impression that indigenous peoples have never made mistakes that caused damage to their places. According to Gonzales and Nelson (2001), “Some scholars have noted that Native nations have specific codes and instructions for taking care of the earth precisely because they did make ecologically harmful decisions in the past and consequently created specific stories and rules to learn from those experiences” (p. 498). I do argue that aspects of indigenous cultural practices and beliefs, together with certain cultural threads and practices within Western European and other modern traditions, can help everyone to identify themes for place-centered sustainability that can be
adapted to their own places and circumstances (see Armstrong, 1995; Berry, 1987; Bond, 2004; Grim, 2001; Jackson, 1996; Kemmis, 1990; LaDuke, 1999; Martinez, 1997; Nelson, 1983; Norberg-Hodge, 1991/1992; Ploeg, 2008; Salmon, 2000; Shiva, 2008; Sveiby & Skuthorpe, 2006). Engagement in the discursive and self-reflexive process of learning about sustainable systems of thought and action can spur the process of recharacterization of modern life, a process marked by a (re)-placement of individuals and communities within specific material and social contexts and within the rhythms of nature.

I would also like to be clear that, while I draw examples from diverse cultural traditions, I do not assert that all indigenous cultures form a homogeneous grouping, nor do I claim that all industrial societies are the same. Some may find my mixing and matching of ideas across cultures disturbing, but I hope that it will be taken in the spirit in which it is offered: as a means to spark self-reflexive, critical, creative, and locally adapted thought and action toward sustainable inhabitation of place.

A holistic ontology of place is foundational to place-centered sustainability. In becoming more sustainable, we can learn from indigenous and other cultural traditions emphasizing the importance of reciprocating and sustaining human-to-human and human-to-nature relationships within the context of place. It is to these relationships that we now turn our attention as we explore the theme of the holistic circle of life and relationship as it is expressed in selected cultures and movements.

*The Holistic Circle of Life and Relationship*

Restoring a holistic ontology which recognizes the inseparable human/nature complex of life manifests as a process of sustainable human inhabitation of place. Wes Jackson (1996) notes that the Western European cultural tradition in the United States has yet to see itself as place-
centered; most people in the U.S. have not sought to become native to place, to live from and within the bounds and bounty of a specific, tangible home on the land (pp. 2-3). Instead, Americans have become increasingly mobile and have participated in extractive relationships with other people and places that have devastated communities and ecologies globally. As Jackson says, “Conquerors are seldom interested in a thoroughgoing discovery of where they really are” (1996, p. 15). I argue that the abuse of place by modern conquerors derives, in part, from perceptions of conquered spaces as other. Descendants of Western Europeans and other recent immigrants to the United States mostly lack an intergenerational relationship with place as a source of sustenance that must be cared for respectfully. Their relationship with place has been further stunted by economic globalization which distances people from the sources of their food, water, and other basic necessities as well as from the production sites of their luxury goods, thereby obscuring their perception of socio-ecological exploitation that occurs at extraction and production sites.

The depletion of oil, climate change, the recent near catastrophic collapse of the global economy, and the degradation and collapse of ecosystems globally demonstrate that we cannot continue to behave as conquerors, restlessly extracting desired wealth and moving on when resources run out. In order to make realistic assessments of lifestyles that are possible to sustain over the long haul, we need to (re)inhabit particular places, becoming intimate with local ecologies and possibilities for realizing new (old?) versions of the good life. As Jackson (1996) notes, “Human history forces upon us the terms of our coming nativeness as much as or more than does our freedom to choose” (p. 18). (Re)inhabitation means developing an ontology of place as a holistic entity comprising intimate relationships among people, plants, animals, and natural systems such as rivers, prairies, oceans, and forests. Indigenous cultural traditions offer
examples of what such an ontology might look like, or at least the principles to which it must adhere.

Enrique Salmon (2000), an anthropologist and member of the Rarámuri (also known as the Tarahumara) tribe of the Sierra Madre Occidental in Mexico calls his culture’s holistic ontology *kincentric ecology*. According to Salmon, many indigenous peoples who have lived in and through long term relationship to place have come to recognize that human relationship with nature is central to the meaning and the processes of life:

Indigenous people in North America are aware that life in any environment is viable only when humans view their surroundings as kin; that their mutual roles are essential for their survival. To many traditional indigenous people, this awareness comes after years of listening to and recalling stories about the land. (Salmon, 2000, p. 1327)

Salmon recognizes the importance of reciprocal relationships between humans and nature in that, through mutual relationship, each provides and cares for the other as members of a family would do for one another.

When he discusses the Rarámuri concept of *iwígara*, Salmon (2000) further elucidates how his people conceptualize their kincenetric place in the world in relation to other species and the whole of nature:

*Iwígara* is the total interconnectedness and integration of all life in the Sierra Madres, physical and spiritual. To say *iwígara* to a Rarámuri calls on that person to realize life in all its forms. The person recalls the beginning of Rarámuri life, origins, and relationships to animals, plants, the place of nurturing [the Rarámuri homeland], and the entities to which the Rarámuri look for guidance…. *Iwí* represents the fertility of the land…. It also means to unite, to join, to connect…. *Iwí* also makes reference to the Rarámuri concept of soul. It is understood that the soul, or *iwí*, sustains the body with the breath of life. Everything that breathes has a soul. Plants, animals, humans, stones, the land, all share the same breath…. *Iwí* is also the word used to identify a caterpillar that weaves its cocoons on the madrone tree…. The implication is that there is a whole morphophysiological process of change, death, birth, and rebirth associated with the concept of *iwí*. *Iwí* is the soul or essence of life everywhere. *Iwígara* then channels the idea that all life, spiritual and physical, is interconnected in a continual cycle. *Iwí* is the prefix to *iwígara*. *Iwígara* expresses the belief that all life shares the same breath. We are
all related to, and play a role in, the complexity of life. *Iwígara* most closely resembles the concept of kincentric ecology. (p. 1328)

Given the intimacy ascribed by the Rarámuri to relationships among all beings and all things that comprise natural systems, it is not surprising that, for the Rarámuri, “The natural world … is not one of wonder, but of familiarity” (Salmon, 2000, p. 1329).

Furthermore, as Salmon (2000) illustrates, *iwígara* represents the interconnectedness of all life and all life systems, not only in the present, but intertemporally across generations. The centrality of the concept of *iwígara* to the traditional Rarámuri worldview implies a cultural focus on conscious participation in maintaining the health of the circle of life across the generations of the past, the present, and the future. In this way, the concept of *iwígara* resembles the seven generations philosophy of the Iroquois Confederacy according to which decisions were made within an ethical context that required considering the effects of these decisions on those who would live seven generations into the future. Similarly, a holistic ontology of sustainability recognizes intergenerational equity, not only among humans, but among all beings and all living systems that comprise the circle of life, and this ontology represents the profound necessity of recognizing oneself in the other. Such an ontology parallels that of many indigenous worldviews by embodying socio-ecological living sustainability characterized by mutually sustaining relationships that are framed by concrete life experiences in specific places (see Salmon, 2000).

Many indigenous cultures that have lived sustainably in place or by moving seasonally and cyclically through traditional homelands share with the Rarámuri similar holistic, place-centered ontologies that emphasize intertemporal and interspecies relationships and an ethic of reciprocity. Jeannette Armstrong (1995), a native Okanagan and sustainability activist, writes of her people as embodiments of their homeland and the keepers of the earth:
We … refer to the land and our bodies with the same root syllable. This means that the flesh which is our body is pieces of the land come to us through the things which the land is. The soil, the water, the air, and all other life-forms contributed parts to be our flesh. We are our land/place. Not to know and to celebrate this is to be without language and without land. It is to be dis-placed.

The Okanagan teaches that anything displaced from all that it requires to survive in health will eventually perish. Unless place can be relearned, it compels all other life forms to displacement and then ruin. This is what is referred to as ‘wildness’: a thing that cannot survive without special protective measures and that requires other life forms to change behavior in its vicinity….

The way we act in our human capacity has significant effects on the Earth because it is said that we are the hands of the spirit, in that we can fashion Earth pieces with that knowledge and therefore transform the Earth. It is our most powerful potential, and so we are told that we are responsible for the Earth. We are keepers of the Earth because we are Earth. We are old Earth. (Armstrong, 1995, pp. 323-324; emphases in original)

Here, Armstrong emphasizes the importance of responsible and respectful participation in the circle of life in recognition that humans have the capacity to change their environments and that doing so in a way that disrupts natural cycles and the lifeways of other creatures is dangerous and can lead to decline of human/nature systems.

Like the Rarámuri and the Okanagan people, the Nhunggabarra aborigines of New South Wales Australia believe that all is connected: people, ancestors, animals, plants, and all parts of ecosystems. Therefore, a primary duty of people and community is “keeping all alive,” practicing respectful care of ecosystems and others (Sveiby & Skuthorpe, 2006, pp. 170-172).

It bears repeating that indigenous cultures of peoples that have lived sustainably in place for long periods of time are by no means homogenous. In some cases, such as with the Koyukon culture, animals and other parts of nature, are not conceived of as family. They are still, however, treated with great respect since every entity in nature is seen to possess a spirit and intelligence and to watch over the behavior of humans who, if they behave disrespectfully toward nature, will reap retribution (Nelson, 1983, chaps. 2 & 12). These beliefs recognize human dependence upon the web of life and prescribe respectful behaviors toward nature. This respect often takes the
form of using nature in ways that maintain the long term productivity of natural systems and
minimize waste, as in the case of using all parts of harvested animals and plants.

An ethic of respect often underpins indigenous cultural codes of conduct with regard to
hunting methods and ceremonies as well (see Nelson, 1983). According to LaDuke (1999),
“When you take a buffalo, there is a Lakota ceremony, the Buffalo Kill ceremony. In that
ceremony, the individual offers prayers and talks to the spirit of the animal. Then, and only then,
will the buffalo surrender itself. That is when you can kill the buffalo” (p. 148). Such ceremonies
speak to the intelligence and spirit of other living creatures who, if not explicitly kin to humans,
are nevertheless an integral part of the fabric of indigenous socio-ecology – animals are an
integral part of the systems upon which humans must depend. The James Bay Cree ontology, for
example, recognizes a hierarchy of beings that differs from some indigenous traditions but,
nevertheless, maintains a holistic and reciprocating view of human/nature systems:

This is a world in which there is a unified, but not rigid, hierarchy of beings descending
from God to spirit beings to humans to animals. The metaphor and value of social
reciprocity, and the moral responsibility that it highlights in social relations, permeate this
social universe. When asking why an animal went in a trap, or allowed itself to be caught,
the Cree answer with similar kinds of reasons to those they would offer for why a human
gives food away to another person. That is, because it appreciates the need of the other.
The implication is that it is a responsible thing to do as a moral social being. The
separation between humans and animals is thus one of degree, and continuities of humans
and animals, culture and nature are therefore assumed in the Cree symbolic universe.
(Feit, 2001, p. 421)

Other cultural and spiritual traditions exist that present opportunities for developing and
living place-centered ontologies. One of these traditions is Buddhism. Similar to indigenous,
place-centered ontologies, Buddhist spiritual traditions emphasize the interconnectedness of all
beings and respectful relationship to nature (Bond, 2004, p. 115; ISEC, 1993; Norberg-Hodge,
1991/1992). Belief in reincarnation and karma also encourage respectful treatment of others and
consideration of long term impacts of decisions and actions taken today. The continuity and
unity of life is represented in the idea that people can be reincarnated as animals and vice versa. Buddhist spirituality, therefore, parallels important aspects of holistic indigenous ontologies discussed above. Unlike indigenous ontologies, however, Buddhist systems of belief can be transferred from one place to another, yet Buddhist spirituality is highly compatible with sustainability due to its holistic ontology that encourages place-centered, sustainable living and the respectful participation in the wholeness of life. As a spiritual tradition practiced worldwide, Buddhism has proven to be highly adaptable to diverse places where this belief system serves as an effective spiritual and cultural form for socio-ecological living sustainability.

The case of Ladakh offers an example of Buddhist sustainability in action. Prior to the external onslaught of modernity and global economic integration in Ladakh that began in the 1970s, Buddhist inspired systems of subsistence and community decision making had served as foundations for sustainable living in a harsh Himalayan environment for centuries. Helena Norberg-Hodge (1991/1992) has lived for extended periods of time in the formerly independent kingdom of Ladakh, now part of India. Her writing about Buddhist society in Ladakh offers a counterpoint to the pervasive modern notion that place-centered, sustainable subsistence lifeways are mired in drudgery from which modern living promises to rescue all. Instead of liberation resulting from the opening of Ladakh to the global economy and Western culture, Norberg-Hodge (1991/1992; see also ISEC, 1993) has witnessed the breakdown of the holistic ontology and cultural practice that had informed traditional community life. This breakdown has resulted in ecological degradation of the local environment and the loss of human to human and human to nature reciprocity that had been the foundation for Buddhist-inspired sustainable living in Ladakh. This breakdown, the fragmentation of the community along generational and gender lines, and the concomitant abuse of the natural environment and other people are well
documented by Norberg-Hodge as they play out in education, local markets, housing, agriculture, local governance, and other areas of Ladakhi community life (1991/1992; ISEC, 1993). The disruption and damage done by the arrival of globalization in Ladakh and the resulting loss of local traditional culture exemplify the reasoning behind the warning articulated by Armstrong (1995) above regarding dis-placement: that when people attempt to live beyond the natural limits of place, they tend to drive other people and nature to ruin. Traditional Ladakhi culture and spirituality, like indigenous ontologies discussed above, offers an example of a sustainable cultural and economic system, and like indigenous cultures and economies, Ladakhi lifeways have been colonized and fragmented by capitalist economy and culture.

Muted themes in Western culture also point to the potential for Western-European-based societies to engage in place-centered, sustainable living based upon their own cultural traditions. These themes are muted because, as noted in chapter two, they have been almost entirely overwhelmed by capitalist consumer culture. The history of Western colonization worldwide also makes considering Western culture as a source for sustainable living problematic. After all, Westerners colonized and obliterated countless indigenous cultures that had developed sustainable, place-centered ontologies and lifeways. Still, even indigenous societies centered within the bounds of place often contain and embody contradictions in that, according to the definition of socio-ecological living sustainability articulated in chapter two, common practices of war and raiding practiced against other tribes represent themes of unsustainability. Still, in the face of these contradictions, it is useful to draw on diverse cultural traditions in working toward sustainability. Doing so emphasizes that sustainability is a process and not an end and creates openings for widespread participation.
Political scientist Danniel Kemmis (1990) elucidates themes within mainstream U. S. cultural history that inhibit development of attachment to place as well as those themes capable of encouraging such attachment. He proposes that Americans should practice a politics and economics of place inspired by attachment to and care for place, including attachment to and care for other people who are part of place. Kemmis (1990) argues that the following cultural and political structures and phenomena have contributed to the dissolution of place as an organizing construct and context for American life:

- Centralized, representative democracy (as opposed to more direct forms of community-based, participatory democracy through which people might work together face-to-face to solve their own problems),
- Cultural and legal emphasis on individual rights (especially property rights) over community rights and welfare,
- Complex government regulatory and procedural bureaucracies, and
- The highly abstract and complex modern economy operating at global scale.

In his search for cultural, economic, and political foundations for healthy recentering of human lifeways in place, Kemmis (1990) draws upon the agrarian community experience of small farmers (including that of his parents) and small farm communities in the not-so-distant past. He also draws upon Jeffersonian notions of agrarian republican governance as emblematic of highly participative, democratic self determination within a context of place-based community development. (chaps. 2-3)

According to Kemmis (1990), in agrarian communities, personal welfare depended on the general welfare of the community (p. 72). The fact that people had to depend upon one another in concrete ways, such as for assistance with building a new barn, meant that people’s
attachment to one another was more than psychological. If reciprocal interpersonal relationships were not developed and maintained, individual/community assets like barns might never be built, and individual families and the community would face tangible risks such as being unprepared for weathering winter storms with livestock and feed intact. In such communities, Kemmis (1990) claims that people learned to accept and rely on one another even if personal differences would have kept them apart if they had not actually needed one another (chap. 6). This interdependence mirrors that observed by Norberg-Hodge (1991/1992) in traditional Ladakhi society: “In the traditional economy, you knew that you had to depend on other people, and you took care of them” (p. 122).

Kemmis (1990) claims that lived experience with place as a teacher of practices of survival and fulfillment together with interdependence among community members in completing required tasks for life in a particular place create public values that are objective in that they are based in commonly held knowledge and practices of successful inhabitation (p. 75). Such values are not mere personal preferences but are rooted in community knowledge of place and in appropriate practices for living together well in place. Kemmis (1990) argues the importance of practices of inhabitation as concrete, specific, and tangible sources for the creation of public values: “It is precisely that element of concreteness which gives to practices their capacity to present values as something objective, and therefore as something public” (p. 78). He argues that living materially within the bounds of place, therefore, creates the necessary conditions for forming community relationships of respect and reciprocity as public values:

The shaping of their values was as much a communal response to their place as was the building of their barns…. The kinds of values which might form the basis for a genuinely public life, then, arise out of a context which is concrete in at least two ways. It is concrete in the actual things or events …. [and] in the actual, specific places. (p. 79)
Public values can be unwritten or articulated as a declaration of shared values, a mission statement, or a community manifesto (see Ploeg, 2008, pp. 61, 190-191). For Kemmis (1990), “to inhabit a place is to dwell there in a practiced way” (p. 79), and authentic public life requires the mutual inhabitation of place (pp. 79-80).

Although Kemmis (1990) does not articulate a holistic ontology of place as fully developed as that of some indigenous cultures, he articulates appropriate processes for developing such an ontology within Western cultural traditions. Since he focuses on processes of place-centered cultural development rather than on relationships and practices relevant in only one or a limited number of places, his concept of inhabitation can be easily adapted to many places.

Kemmis’ (1990) notion of inhabitation shares certain themes with other (re)inhabitation efforts based in the Western cultural tradition such as the Transition Movement discussed above (see Hopkins, 2008) and processes of repeasantization in Europe analyzed by Ploeg (2008, chap. 6). These themes include creative and sustainable adaptation to place that embodies the conscious development of public values, inclusive participation in decision making, and increased levels of community self-determination and resiliency.

And so, what specifically do current and past holistic systems of belief and action have to tell us as we face the global sustainability crisis? They propose that nothing and no one exists to be exploited and that, when we use others in this way, we diminish ourselves by disconnecting from relationships vital to life (see Salmon, 2000, p. 1331). As long as we continue to see nature as entirely other – as mere material available to satisfy our needs and desires – it remains unlikely that we will live sustainably in place – a way of living that is re-emerging as a survival imperative for humans and other life forms. This is not to say that the mere idea of living
sustainably is enough to change the world. Rather, I argue that sustainable living is being thrust upon us by the damage globalized civilization has done to environments everywhere and by the economic and social crisis of capitalism as that system reaches its limits of expansion and erodes its own economic base. We soon will not have the choice of whether or not to live sustainably – if we want to survive. Within this context of concrete, material drivers for social change embodied in the sustainability crisis, recognition of the importance of a holistic ontology of place can blossom into new and revived cultural systems of sustainable, place-centered living. This recognition can form an important component of Gramscian style agency and praxis (Gramsci, 1971/1999, pp. 333-334).

Sustainability education can play a role in building this awareness, in part through contextualizing conceptual learning through engaging students in projects that offer direct experience in creating sustainable, place-centered community. These experiences can include working to build local food systems through community gardening and planting of fruit and nut producing trees and shrubs as well as learning about how to use and enhance the health of local wild plants and animals. Through a combination of responding to concrete ecosystemic constraints and opportunities and (re)conceptualizing our relationships to place, I argue that we can (re)develop place-centered ontologies that promote meaningful and sustainable participation in the community of all beings.

We will now explore resiliency as another constitutive theme for place-centered sustainable living.

Resiliency

According to Jacobs (2000), systems that are dynamically stable make effective use, through continual self correction, of information fed back to the system. Such systems resist
collapse and disintegration (pp. 84-85) as do ecosystems that demonstrate resilience stability as defined by Odum and Barrett (2005): “Resilience stability indicates the ability to recover when the system has been disrupted by a perturbation” (p. 70). Jacobs (2000) also emphasizes how diverse uses and reuses of matter and energy in an economy are essential to its diversification and resultant resiliency, just as the diverse use and reuse of matter and energy flows is critical to development of resilient ecosystems (pp. 43-63). Economic relationships of neoliberal globalization (structured as they are by systems of enforced dependency and the logic of efficiency that tends to reduce rather than encourage diversity) offer few prospects for communities and nations to develop economic resiliency. In the context of a capitalist economy, developing community resiliency would entail increasing economic diversity so that a given community would not be entirely dependent upon profits generated by one factory, one mine, or one monocrop, a precarious situation indeed (Jacobs, 1969, 2000; Shuman, 1998/2000). A resilient local economy would be composed of diverse businesses that produce goods and offer services for local consumption so that money spent within the community would produce extensive multiplier effects (Jacobs, 1969, chaps. 4-5; Shuman, 1998/2000, chap. 2). Goods produced in a resilient local economy would rely mostly upon locally available resources and would use these resources in a sustainable manner (Douthwaite, 2004, pp. 119-121).

Such an economy would be well positioned to support a local community beyond the collapse of the global capitalist growth economy. In the long term, a resilient local economy would be based in a holistic ontology of place developed through praxis over many generations. Such an economy would make sustainable use of diverse local resources as well as wild foods and medicinal plants. A sustainable community could engage in food production activities that
were themselves resilient and diverse by engaging in permaculture (see Hopkins, 2008, pp. 136-141) and other sustainable processes of agriculture, horticulture, and animal husbandry.

Sustainable communities globally would exhibit a high degree of diversity from community to community in utilizing place-appropriate technologies and production processes and in growing/hunting/gathering place-adapted food. As a result of creating diverse, place-centered communities and societies globally, the species resilience of humans would rise, in contrast to the current situation in which humans are developing global monocultures in food production and lifestyles (see Douthwaite, 2004, and Homer-Dixon, 2006). Similar to agricultural monocultures, homogenous human cultures are highly susceptible to disturbances both because everyone everywhere relies on many of the same inputs and products to fulfill basic necessities and because the provisioning of these inputs and products has become a unified and synchronized process globally (see Homer-Dixon, 2006, chap. 9). So, shortages of key goods grown, extracted, or produced in one region can quickly cascade into global shortages. If the corn crop in the U.S. fails, it is a problem for the world, not only the U.S. If global oil passes its peak production so that supplies are constricted, it is a problem for everyone everywhere who relies on globalized transportation of goods and on petroleum products.

As long as people across the globe rely heavily upon more or less uniform foods and other necessities rather than upon a wide diversity of foods, other resources, and energy capture/production technologies (see Scheer, 2002, 2007) to fulfill their basic needs, the resiliency of the globalized provisioning system will remain very low indeed (see Douthwaite, 2004, and Homer-Dixon, 2006). What is needed to (re)vitalize systems of human/nature resiliency globally is (re)adaptation to place and (re)localization in providing for basic human
needs. We must (re)adapt to place so that crises of basic needs, which are bound to occur from time to time, remain localized crises rather than cascading, global ones.

The diversity necessary for sustainable human inhabitation is reflected globally among indigenous societies, which is why Wes Jackson (1996) asserts that we must strive to become native to place in the modern area. Biologist and Native American activist Dennis Martinez observes that cultural diversity and biodiversity are inextricably interrelated (1997, p. 109). Anishinaabeg tribal member and activist Winona LaDuke (1999) concurs, stating that over 2,000 nations of Indigenous peoples have gone extinct in the western hemisphere, and one nation disappears from the Amazon rainforest every year…. There is a direct relationship between the loss of cultural diversity and the loss of biodiversity. Wherever Indigenous peoples still remain, there is a corresponding enclave of biodiversity. (p. 1)

Successfully becoming native to place might be described as collectively engaging in long term processes of learning to respond to and participate successfully with place in ways that maximize community health and resiliency as well as individual and community fulfillment. This engagement might be described as a process of building public values as product of living well in place and using these values to construct a set of ethical guidelines for governing life processes. Over the long term, these public values and codes of conduct would likely result in a collective ontology of place as a human/nature construct.

Processes of (re)inhabitation would produce more than human ideas, values, and codes of conduct. Concrete representations of diverse and holistic ontologies of place would include development and use of locally adapted seeds and animals owned/managed collectively as part of the cultural commons (see Shiva, 2008, p. 119). These tangible representations of successful human inhabitation of place have existed historically and still exist today, though many locally adapted plant and animal varieties have been lost in the globalization-driven push for efficient and standardized production. Vandana Shiva (2008) highlights the degree of standardization of
current foodstuffs globally as compared to the historical diversity: “Humanity has eaten over 80,000 edible plants over the course of its evolution. More than 3,000 have been used consistently. However, we now rely on just eight crops to provide 75 percent of the world’s food” (p. 121).

In the Pueblo tradition, the holistic circle of life is both an idea and a tangible reality experienced as an integral part of daily life. In its distinctively Pueblo incarnation, it represents one of many diverse, place-centered lifeways capable of contributing in important ways to the resilience of human societies everywhere by resisting the standardization and synchronization of the globalized world-system and fostering localized resiliency. Pueblo Indian educator Gregory Cajete (2001) describes traditional Pueblo farming, not only as a process of diversification through adaptation to place, but also as the basis of a holistic ontology and spirituality of place in which humans and nature are conjoined: “The varied strains of developed corn were a direct result of our collective ecological understanding of the places in which we have lived through the generations. Corn became a sacrament and symbol of our life and relationship with the land” (p. 632).

Another tangible representation of (re)inhabitation would be the decentralization and diversification of energy production and capture. This decentralization is absolutely necessary to diverse (re)inhabitation. As Scheer (2002, 2007) argues, because energy is central to economies and life, as long as we remain chained to global fossil and nuclear energy industries as the providers for our essential energy needs, we will be subject to overriding enforced dependency. By adapting our energy capture and production to place through decentralized and locally adapted use of renewable energy technologies and resources and through reducing the need to transport materials and products globally, we can increase both local economic resiliency and
political self-determination, both of which are essential to successful and diverse (re)inhabitation.

(Re)inhabitation will not be easy. In the case of energy alone, we face widespread and deep entrenchment of a centralized energy system that enforces dependency rather than creating self-sufficiency and resiliency: “the capitalist world-economy depends on … nonrenewable resources for nearly 90 percent of its total primary energy supply” (Li, 2008, p. 148). People engaged in processes of (re)inhabitation will also make mistakes and will continue to engage in forms of oppression of people and/or nature. The process of sustainable living represented by becoming native to place is historical in that we must start from the very difficult position of current socio-ecological crisis and work from there toward sustainability – with no guarantee of success. Furthermore, the process of becoming native to place is one that will never truly end because new circumstances will continually arise. Nevertheless, given the depth of the global sustainability crisis and the current and impending human and environmental catastrophes being driven by widespread human dis-placement, we must engage in action toward increasing the resiliency of our communities by wisely (re)inhabiting our places.

We now turn our attention to developing and enacting sustainable forms of leadership as another important theme in (re)inhabitation.

**Authentic, Grassroots Servant Leadership**

The processes and products of collective decision making are central to sustainable (re)inhabitation because these determine social structures, economic distribution, human uses of nature, and more. If hierarchical organization in societies promotes exploitation of both people and nature, then sustainable societies would engage in forms of decentralized, inclusive leadership in service to sustainable living. The concept and practice of servant leadership,
articulated by Robert K. Greenleaf (1970/1991) serves as a model for sustainability-oriented, grassroots leadership that is adaptable to various cultural and spiritual traditions.

According to Greenleaf (1970/1991), a servant leader works to build the leadership capacities of others rather than to maintain his/her own position of power. The servant as leader sows the seeds of long term change because the servant leader shares both the responsibilities and the fruits of the changes s/he leads with those who follow or who lead from their own positions. Greenleaf (1970/1991) contrasts the servant leader with the dominator leader who is “leader first, perhaps because of the need to assuage an unusual power drive or to acquire material possessions” (p. 7):

The difference manifests itself in the care taken by the servant-first to make sure that other people’s highest priority needs are being served. The best test, and difficult to administer, is: do those served grow as persons; do they, while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants? And, what is the effect on the least privileged in society; will he benefit, or, at least, will he not be further deprived? (p. 7, emphasis in original)

Greenleaf’s emphasis on increasing the autonomy, and therefore the leadership potential, of the served coincides well with the concept of place-centered, sustainability-oriented community autonomy. Increased community self-sufficiency can serve as an effective vehicle for confronting and replacing neoliberal globalization’s ever-intensifying concentration of wealth and power in the hands of the few and the concomitant immiseration of many. Servant leadership, therefore, can prove to be an effective strategy for combating enforced dependency and increasing individual and community resiliency.

In his discussion of authentic leadership, Terry (1993) offers additional theories that extend and sharpen Greenleaf’s (1970/1991) concept of the servant leader through articulating a theory of authentic leadership. Like Greenleaf (1970/1991), Terry (1993) proposes that leaders must be concerned, not only with decisions made, but also explicitly with how they are made.
According to Terry (1993), decisions must be made in a transparent and open manner and must “acknowledge the significant features of the human condition” (p. 108). Terry’s (1993) authentic leadership, therefore, engages *justly* in service to justice. An authentic servant leadership of place would derive the context for its authenticity from a holistic ontology of place rooted in public values that inform and are informed by processes and products of diverse, place-adapted (re)inhabitation.

Political leadership in such a context would entail much more than creating a political framework for voting and interest group competition for the ears of decision makers. The leadership of (re)inhabitation, as argued by Kemmis (1990), would entail direct participation by community members in making decisions that affect their lives rather than providing only indirect avenues of influence aimed at appealing to elected or appointed decision makers. According to Kemmis (1990), “This taking of responsibility is the precise opposite of the move toward the ‘unencumbered self.’ It is, quite simply, the development of citizenship” (p. 113), and it entails a “direct willing of the common good” (Kemmis, 1990, p. 85) – a process that is highly compatible with the development of public values and a holistic, intertemporal ontology and ethic of place. Such leadership and decision making represents a form of liberty realized through relationships to other people and to place rather than through radical individualism. Participatory servant leadership for (re)inhabitation is bottom-up leadership that is both figuratively and literally grounded.

Broad participation in community problem solving is required for the long term success of (re)inhabitation, as noted by Hopkins (2008) with regard to the Transition Movement. According to Hopkins (2008), change needs to be fully embedded in community economic and political processes. Hopkins learned this lesson after spearheading the development of the
Kinsale Energy Descent Action Plan through the Kinsale Further Education College in Ireland (Hopkins, 2008, p. 128; see also the action plan itself: Hopkins, 2005). Having visited the College with a colleague and a group of students in summer of 2008, where we discussed the plan and progress toward the goals articulated in it in 2005, I believe Hopkins’ assessment is on target. The Action Plan (Hopkins, 2005) was developed by a small group, and even though it was endorsed by the town council, it was not fully integrated into the local economy and processes of town governance. Even though it is an insightful document that articulates many important ideas and goals for (re)inhabitation, once Hopkins left Kinsale, as did many of the students who helped to write the plan, community momentum for realizing its goals faltered, and progress has been slow.

Inclusive leadership and governance for (re)inhabitation must encourage all community members to play roles in guiding community life processes. By contrast, placeless, globalized capitalism reduces opportunities for inclusive leadership by concentrating power, wealth, and decision making in fewer and fewer hands and in locations distant from affected communities. By increasing the capital to labor ratio over time, capitalism also eliminates the roles of many people in the productive forces of society (Li, 2008, pp. 142-143), thereby severing their connection to life processes that could serve as a platform for developing a leadership for (re)inhabitation. Vandana Shiva (2008) calls this a process of creating “disposable people” (p. 2).

By contrast, traditional societies that embody a holistic ontology of place typically provide meaningful roles to all members of a given community, though leadership roles may be socially prescribed so that community members are not entirely free to choose the roles they play. Take for example the leadership model of the Nhunggabarra people of Australia:

Nhunggabarra principles for organising society were context-specific leadership and knowledge-based organizing. Everyone in society had a leadership role in a specific area
of knowledge, and the leader role shifted depending on the context and who, within that context, was the most knowledgeable. (Sveiby & Skuthorpe, 2006, p. xvii; emphasis in original)

Some traditional, place-based societies have engaged in gender-based, caste-based, and other forms of oppression that do not adhere to the definition of socio-ecological living sustainability advocated in this dissertation. Therefore, looking to just any traditional society for examples of community life on which to base sustainable (re)inhabitation would be problematic. Any community working toward socio-ecological living sustainability must carefully choose examples and develop its own processes of leadership for (re)inhabitation so that meaningful participation for all improves the health and contributes to the integrity of individual community members and subgroups. Still, as in the case of the Nhunggabarra, differential authority in leadership can be sustainable within a framework of servant leadership where building the leadership capabilities of others along with engaging in inclusive, transparent, and participatory leadership are primary concerns.

The Sarvodaya Movement in Sri Lanka offers an example of community-based servant leadership that demonstrates the potential to serve as a platform for (re)inhabitation. Sarvodaya is a grassroots community building and rural development movement which began in 1958, eleven years after independence from British rule. Though it has no explicit connection to the work of Greenleaf (1970/1991), it offers an example of grassroots, decentralized servant leadership that has worked to promote community self-development and autonomy for decades. The movement promotes the development of collective leadership among those who might be considered the least likely to assume leadership roles: the poor, the lower castes, women, and youth (Bond, 2004, chap. 1). Thereby, the movement embodies key aspects of servant leadership: the building of leadership capacity in others and benefitting the least advantaged (Greenleaf, 1970/1991, p.
7). Sarvodaya embodies the Gandhian ideals of truth, nonviolence, and “selfless service for humanity as the highest form of religious practice” (Bond, 2004, pp. 9-10). The movement adapts the Gandhian tradition to the predominantly Buddhist context of Sri Lanka by translating Gandhi’s call for the uplift of all to “the awakening of all” while, at the same time, remaining a nonsectarian movement emphasizing “an underlying spiritual unity of all religions” (Bond, 2004, pp. 10, 13-14). The specific form of awakening embodied in the movement was inspired by Angārika Dharmapāla, who worked for restoration of Buddhism in Sri Lanka in the late nineteenth and early twentieth centuries and who emphasized the importance of moral worldly activity as spiritual practice (Bond, 2004, pp. 10-11). Sarvodaya seeks “the awakening of the individual with and through the awakening of society” (Bond, 2004, p. 14).

The Shramadana Movement, the earliest incarnation of Sarvodaya and an important part of the movement to this day, is a student work camp movement begun in 1958 by high school science teacher A. T. Ariyaratne and 40 of his students. These students and twelve teachers from their school conducted the first shramadana or “gift of labor” work camp (Bond, 2004, p. 7). Bond (2004) describes the motivation, purposes, and outcomes of the first shramadana:

Ariyaratne … wanted his students to gain some understanding of the condition in rural villages. When they went to Kanatoluwa, the students lived and worked with the residents, who were considered outcastes by neighboring villages. The students helped the residents dig wells, build latrines, plant gardens, repair the school, and build a place for ‘religious worship.’ Building a place for worship was significant because even the clergy had previously shunned the people of Kanatoluwa.

The first shramadana camp was a great success. Students experienced a different aspect of their culture, and the project broke down barriers between the upper and lower castes. Doing manual labor alongside rural villagers changed the students’ outlook, and associating, as equals, with ‘high-class gentlemen’ from the city for the first time in their lives changed the villagers’ perspectives. The neighboring villages were also affected: If the ‘upper-class people’ from the city could work and eat with these so-called outcastes, then the outcastes could no longer be treated as inferior. (p. 7)
In the earliest stages of a village’s engagement in the Sarvodaya community development process, a village organizes various social support and networking groups. These typically include: a preschool children’s group and a school-age children’s group as well as groups for youth, mothers, and farmers. These social support groups represent opportunities for building grassroots leadership capacity within the community, and the emphasis on youth leadership and involvement endows the movement with long term momentum (Bond, 2004, pp. 23-24).

Through these groups, community development works from the bottom up engaging people and resources that are available in every community.

Sarvodaya follows a practice of “project support project” in which villages that have successfully initiated community development and self-sufficiency programs support up to nine additional villages initiating such efforts (Bond, 2004, p. 58). This process, combined with the approach of the movement to generating leadership and development from within villages, helps to maintain the authentic grassroots character of Sarvodaya leadership that is an embodiment of the ideals of servant leadership.

Sarvodaya community development has achieved a great deal of success in its over fifty years of service, despite conflicts with donor foundations seeking to steer the movement onto a path of integrating communities with the global market rather than pursuing localized development for autonomy and self-sufficiency and despite a smear campaign by the Sri Lankan government meant to discredit the movement (Bond, 2004, chaps. 3-4). In 2002, there were over 3,000 villages with Sarvodaya-supported economic development programs (Bond, 2004, p. 108), and the movement is spreading to other nations and cultures through “Sarvodaya USA, Savodaya Twente in the Netherlands, Savodaya Japan, and Savodaya UK” (Bond, 2004, p. 116).
The Sarvodaya Movement is not alone in its project support project approach to social change. The Transition Movement promotes similar processes to Sarvodaya, both for internal, localized community development and for intercommunity support for successfully transitioning toward sustainable, place-centered life (Hopkins, 2008, pp. 142-143). It is important to recognize the value of communities networking with and learning from one another, useful processes that demonstrate localized resilient communities are not synonymous with isolated communities.

This last point also brings up the question of appropriate scale in organizing for change. As Hopkins (2008) notes, issues of optimal community size and scope for grassroots organizing and action are difficult to define uniformly. Like Hopkins, I prefer to leave issues of scale for effective change characterized by servant leadership as an open question for individuals and communities to define for themselves. In this approach, I concur with Hopkins (2008) who states:

I have come to think that the ideal scale for a Transition Initiative is one over which you feel you can have an influence. A town of 5,000 people, for example, is one that you can relate to; it is one with which you can become familiar…. This concept of working at a neighbourhood scale is not a new one…. Ultimately, you will get a sense of what is the optimal scale for your initiative. (pp. 143-144)

Because servant leadership is participatory, transparent, and broadly beneficial, social changes brought about through its processes are more likely to be sustained and evolved over the long term than are the philosophies and practices of single, dominator leaders. The Sarvodaya Movement is one case in point. Social changes undertaken though the processes of servant leadership, therefore, are more likely to contribute to the long term development of public values and to increase community sustainability over the long haul.

In chapter five, we will explore examples of local food praxis as a particularly important vehicle for actualizing themes of sustainable, participatory (re)inhabitation of place. In that
chapter, I will develop a theory of sustainable food systems as embodiments of counterhegemonic social change that explicitly resist and create alternatives to enforced dependency while fostering place-centered sustainability and community resiliency. In chapter six, we will explore the relevance of servant leadership to the critical pedagogy of sustainability.

Conclusions and the Role of Education in Place-Centered Sustainability

I have argued in this chapter that sustainable (re)inhabitation is built upon the following themes:

- A holistic ontology of place through which individuals and communities recognize and respect their relationships with and dependence upon nature as the source of all life,
- Inclusive governance that is place-centered and that derives from public values (see Kemmis, 1990, p. 75) developed through collective (re)inhabitation of place,
- (Re)building community resiliency as a means to counteract systems of enforced dependency within globalized late capitalism, and
- The widespread practice of servant leadership.

Specific practices of (re)inhabitation can be perhaps as diverse as are the places in which people live and have lived historically, perhaps even more so.

Given the urgent need for (re)inhabitation as a fitting response to the sustainability crisis, and given the centrality of education in the formative experience of modern people, it is important to ask what role(s) education might play in moving societies toward sustainable living. According to Cajete (2001), typical modes of education in the U.S. perpetuate dis-placement among students and the denial of human/nature holism: “Teaching about the reality of natural America as ‘place’ is not the intent of modern education, which is designed to condition students
to view nature and places as objects that can be manipulated through science and technology for human economic ends” (p. 621).

In chapter six, I will argue for replacing both the content and the processes of modern education. With regard to place as a context and construct for sustainable living, education should facilitate the conscious (re)embedding of humans within diverse, localized ecological contexts. Sustainable education should be education for healthy ecosystemic dependence rather than for domination and control of nature. Students should learn how to participate in (re)creating and maintaining healthy, resilient socio-ecological systems that provide a context for both people and nature to thrive.

Sustainability-oriented education today should be discursive, reflexive, and critical (see Freire, 1970/2000; McLaren, 2005; McLaren & Farahmandpur, 2005; McLaren & Jaramillo, 2007; McLaren & Kumar, 2009). Forms of education appropriate for addressing the sustainability crisis would engage in the first negation of the capitalist order through critiquing the unsustainability and injustice of capitalist world-system. The ultimate aim of sustainable forms of education would be absolute negation (see McLaren & Kumar, 2009) of the capitalist world order through engaging students and communities in transformative, place-centered praxis that embodies the themes of sustainable (re)inhabitation discussed here. Through engaging people in (re)inhabitation as an absolute negation of the globalized capitalist order and its systems of enforced dependency, sustainable education would have a decolonizing (see Grande, 2007) effect on communities. It would provide one context for educating the whole person within his/her ecosystem and within community and, therefore, contribute to long term sustainable living. As Jackson (1996) says regarding the role of higher education in particular:
Our task is to build cultural fortresses to protect our emerging nativeness…. One of the most effective ways for this to come about would be for our universities to assume the awesome responsibility to both validate and educate those who want to be homecomers – not necessarily to go home but to go someplace and dig in and begin the long search and experiment to become native. (p. 97)

In the long term, however, education as we have known it in the modern era might lose its relevance within a community context of (re)inhabitation and recharacterization of modern people. Norberg-Hodge (1991/1992) has the following to say about “education” in traditional Ladakh:

With the exception of religious training in the monasteries, the traditional culture had no separate process called ‘education.’ Education was the product of an intimate relationship with the community and its environment… Education was location-specific and nurtured an intimate relationship with the living world. (Norberg-Hodge, 1991/1992, pp. 120-121)

Industrialized education, by contrast, is abstract education. It has increasingly focused on training people to possess generic skills that can facilitate their roles of cogs in the vast industrial machine. It has increasingly not taught people to be self-sufficient but, instead, to become dependent upon the monetized world-system economy. If education is to become truly place-centered and sustainable, everyone would become an educator – and a student at the same time – and the perceived need for specialized educators and for abstract forms of education would vastly diminish.

It is my hope that educators today will direct their attention to serving societies in transition toward sustainability and that the time and resources afforded to education today can be used to help people learn what they will need to know for healthy, place-centered living. I hope that educators will, to the great benefit of people everywhere, gradually work themselves out of their jobs. Education as it is today will lose much of its relevance as the industrial era
approaches a close. We who are educators should realize that the education system is in many ways part and parcel of the unsustainable paradigm of globalized industrial capitalism. Knowing this, we should do what we can to make a contribution to the rebirth of education as an integral aspect of (re)inhabitation that permeates and sustains community life.
Chapter 5: Food as Sustainability Praxis:
Self-determination and Socio-Ecological Integration

As discussed in chapter three, the late capitalist world-system is unraveling. Its ecological foundation is eroding and being consumed by people everywhere who have become part of this system – by choice or by force. The magic carpet ride that the growth economy provided is coming to an end, and it is likely that even those of us who rode the longest in the dreamland of material wealth will be dropped from the sky into a historical nightmare of turbulence, deprivation, and complete uncertainty with little or no social or economic safety net in sight. As we have seen, the growth economy is bumping up against limits of all kinds: limits to available resources, to fresh water, to oil and other fossil fuels, to the ability of the planet to absorb pollution, and to the ability of global consumers to maintain purchasing power in an atmosphere of simultaneous overproduction and concentration of wealth. The contradictions of the system have intensified to the point that it can no longer contain them.

A major source of strain is the need to feed the six and a half billion people who inhabit the world, a population that has doubled since the 1960s. But this problem relates, not only to the quantity of food needed, but to how we produce and consume food. It is, in large measure, a question of the structure and character of our food system, and this question is the focus of this chapter.

Through food production and consumption, we write upon the world the story of our relationships to each other and to nature. Food, as a medium for our requisite engagement with nature and each other, provides us with a unique window for viewing and comprehending the current crisis in the world-system. In the face of seemingly overwhelming challenges to our quality of life, and perhaps to our very survival, food also offers us unique creative opportunities to resist enforced dependency and build community and ecosystemic resiliency.
Whether we realize it or not, we are implicated in the food system in which we engage, and although our choices are in many cases admittedly limited, we contribute to shaping the character and processes of this system. Everything we do with regard to food – all the way from purchasing fast food to growing our own food, from supermarket shopping to participating in community supported agriculture – is a political act, and the political implications of food are central to this chapter. I will examine the political economy of food and the opportunities to reshape that political economy in ways that build community and benefit the diverse ecologies within which human communities are embedded. The central questions are these: What makes a food system sustainable? And what are the socio-ecological implications of creating such a system? As an educator, I am also concerned with how sustainable food can provide an effective platform for sustainability education and praxis.

In this chapter, I build upon the definition of socio-ecological living sustainability and the critical social theory of sustainability articulated in chapter two. I conceptualize sustainable food activism as a particularly important form of resistance to the enforced dependency discussed in chapter three. By focusing on local food activism as a crucially important aspect of (re)localization and (re)integration with nature, I also build upon the broad theories of place-centered sustainability advanced in chapter four. This work lays a foundation for chapters six and seven in which I argue that study of sustainable food systems, conjoined with direct participation in various aspects of local food work, is an effective vehicle for counterhegemonic sustainability education and praxis.

In this chapter, I explore sustainable food from community, national, and international perspectives. I elucidate the social and ecological problems of industrial food production as well as some useful techniques and practices of sustainable food production. I argue that creating
sustainable food systems represents an important avenue for circumventing and eroding the power structures of neoliberal globalization that enforce unhealthy and unsustainable living patterns worldwide. I argue that working to build sustainable food systems is a form of counterhegemonic political engagement tied to a broader movement for sustainable living and social justice.

I begin this chapter by briefly discussing why social engagement related to sustainable food can be characterized as a social movement. I follow this discussion by articulating a defining vision for sustainable food that serves as a basis for discussing this concept throughout the chapter. I then situate industrial agriculture within the global capitalist system and show how the modern, globalized food system is emblematic of the broader trends in the crisis of capitalism: centralization of production, control, and profits in the hands of a few achieved at the expense of enforcing dependencies worldwide. I follow this discussion of industrial agriculture with a discussion of the potential for the sustainable food movement to play a central organizing role in the local/global struggle to address both the sustainability crisis and the crisis of capitalism. Lastly, I offer my conclusions and relate this exploration to my work as a college educator in the U.S. and to the work of college and university educators more generally.

My aim is to develop a theory of sustainable food as an embodiment of counterhegemonic social change. In this effort, I adhere to the Gramscian (1971/1999) claim that articulating valid knowledge is a form of praxis that can serve to inform action. Salamini (1974) notes the importance of articulating counterhegemonic theory when he says that, according to Gramsci, “the validity of sociological research resides not in its scientific function but rather in its ideological function, that is, in its capacity to organize the experiences of the masses” (p. 377). Adhering to Gramsci’s notion of the role of theory in praxis, I organize my arguments, not
as a scientific evaluation of sustainable agriculture’s productive potential and levels of success, but as a conceptual framework that informs the praxis in which I engage with my students in my role as a college professor. The theories articulated here provide a sound theoretical context for my pedagogical praxis, and I hope they will also encourage increased study and action related to sustainable food within the context of higher education.

**Sustainable Food Activism as a Counterhegemonic Movement**

Saying that sustainable food production and consumption is a movement does not imply a central organization or leader, or even a group of leaders. In their book *Doing Democracy: The MAP Model for Organizing Social Movements*, Bill Moyer and his colleagues (2001) define social movements in a way that helps to place widespread individual and group activity within the context of a broader movement. This framing encourages us to see how similar but seemingly disconnected efforts can reinforce one another over time and space as a movement matures. Quoting McCarthy and Zald (1977), Moyer and his colleagues (2001) define social movements as collective actions in which the populace is alerted, educated, and mobilized, sometimes over years and decades, to challenge the powerholders and the whole society to redress social problems or grievances and restore critical social values. This definition does not focus on one organization, but instead on ‘collective actions’ carried out by a number of different organizations, all of which might be said to be part of the same movement. In the MAP [Movement Action Plan] definition, social movements go beyond the scope of changing governmental policies and structures to challenge all those who exercise power to maintain the status quo…. This definition of collective efforts describes engaged citizens as the core of the democratic process…. (Moyer, 2001, p. 2; emphasis in original)

The MAP social movement theory hinges upon assumptions that articulate well with the analysis presented in this dissertation regarding industrial versus sustainable food production. MAP integrates especially well with the theory of enforced dependency discussed in chapter three. According to an analysis rooted in the theory of enforced dependency, we do not have
large scale, industrialized agriculture today because of its obvious superiority as a food provision system and social institution. We have hegemonic industrial agriculture, in large measure, because it serves the interests of the politically and economically powerful by concentrating wealth and power in their hands, even as it systematically depletes rural communities and villages of their social and economic vitality and political control. According to the theory of enforced dependency, sustainable food activity can be conceptualized as counterhegemonic praxis. The following four assumptions upon which MAP hinges articulate well with this argument as it is elaborated throughout this chapter:

1. A chief cause of social problems is the concentration of political and economic power in a few elite individuals and institutions that act in their own self-interest.

2. Participatory democracy is a key means for resolving today’s awesome societal problems and for establishing a just and sustainable world for everyone.

3. Political and economic power ultimately rest with the majority population; the powerholders in any society can only rule as long as they have the consent or acquiescence of the people.

4. The most important issue today is the struggle between the majority of citizens and the individual and institutional powerholders to determine whether society will be based on the power elite or people power model. (Moyer, 2001, p. 19)

Moyer and his colleagues also develop in MAP a theory of how movements can progress over time and what roles individuals and groups can play to facilitate movement progress toward creating widespread social change. Though discussing the full MAP program is beyond the scope of this chapter, I encourage local food activists to consult Moyer’s (2001) text as a useful theoretical and process guide. What is most important to us here are the notions that power
ultimately rests with the masses and that effective counterhegemonic movements do not have to be centrally organized in order to develop the interest and shape the actions of enough people to create widespread social change. It is also important that we recognize that food production is socially embedded and, especially given that it is essential to human life, it is a pillar of the current hegemonic order and, therefore, susceptible to counterhegemonic social forces.

Conceptualizing sustainable food production and consumption as a movement allows us to recognize that both the everyday and the explicitly political actions of people involved with sustainable food comprise threads of a fabric of creating widespread social change. People support sustainable food production for many reasons, some practical and personal, and some related to counterhegemonic resistance – or a combination of both. It is not wrong to support sustainable food for purely practical reasons. The critical questions of scale of production and of who benefits from food production systems, when addressed through individual and community action, result in counterhegemonic activity, whether or not counterhegemonic praxis is the explicit aim of everyone involved in the movement.

**A Vision for a Sustainable Food System**

My vision for a sustainable food system articulates with socio-ecological living sustainability. It embodies sustainability through various processes of food production and consumption and through its capacity to enhance and not detract from the overall sustainability of a given community. A sustainable food system is a system of food growing, gathering, hunting, and/or animal raising that provides for a nutritionally healthy and food-secure existence for people engaged in that system as producers and/or consumers. The human health and food security\(^{30}\) dimensions of a sustainable food system remain dynamically stable for an indefinite

\(^{30}\) The Community Food Security Network defines food security as the ability of all people to access a nutritional diet from ecologically sound, local, and nonemergency sources (Murphy, 1999, p. 4).
period of time spanning multiple human generations. Human producers and consumers of food in a sustainable food system recognize that the food system is a subset of ecosystems within which food production and consumption occurs and that these ecosystems are also embedded within the global biosphere. Therefore, those involved in a sustainable food system, recognize that the long-term health and viability of that system depends on the continued health, vitality, and resilience of the ecosystems within which their food is produced and, ultimately, the health, vitality, and resilience of the global biosphere. Those engaged in a sustainable food system, therefore, seek to maximize the contributions of the food system to the life producing and enhancing capacities of the places in which food is produced. Sustainable food producers and consumers work with nature to produce food while also:

- Contributing to soil health and conservation;
- Harvesting and conserving fresh water in order to reduce and ultimately end the practice of water mining from underground aquifers at rates that exceed their recharge;
- Closing nutrient loops so that field residues and human/animal waste derived from foods consumed within the system are returned as inputs to the system;
- Maintaining and enhancing biodiversity within the food production system in order to enhance its resiliency to pests, diseases, and other threats to food production and in order to create a healthy integration between the food production system and the wider ecosystem;
- Reducing and ultimately eliminating the use of synthetic pesticides and herbicides (these chemicals, not only cause widespread ecosystemic damage, but the fossil fuel inputs for their production are nonrenewable);
Engaging in intercropping and other forms of multifunctionality within the food production system so that localized intensification of production can occur while maintaining and even enhancing ecosystem health; and

Eliminating the large-scale, long distance transportation of food via fossil-fueled vehicles, planes, and ships.

A sustainable food system is also one manifestation of a sustainable community. Therefore, the food system is integrated within a larger economy (with *economy* conceived of as various means of making a living, not only a money economy) that is itself sustainable. This economy facilitates the formation of reciprocally beneficial connections among people and between people and place. Such a food system contributes to the social potential and vitality of a community, including the potential and probability that its members will engage in forms and practices of governance and collective decision making that enhance community sustainability.

In order to reduce and ultimately eliminate unsustainable patterns and structures of domination and oppression that treat both people and places as resources to be mined for profit, sustainable food practitioners engage with each other in socially just food production and consumption activities. Cooperation and collaboration are emphasized over competition.

The scope and scale of a sustainable food system can vary depending upon the context, but such a system should never embody a framework for the use of widespread, linear production of food that depletes some places while causing problems of waste disposal and nutrient concentration in others. The scale of the system should not be so large as to require long-distance, fossil-fuel-based transportation of food items in order to provide basic food security. It should also remain small enough to encourage widespread understanding among consumers of
where their food comes from and how it is produced so as to encourage social controls against exploitation of people and ecosystems.

To realize a sustainable food system means, concomitantly, to create a sustainable society, and we are a long way indeed from doing these things. This vision serves as a framework for analyzing our food systems as they are and for recognizing current and potential contributions toward sustainability embodied in various ideas and examples of food production and consumption. Before discussing strategies and projects of the local food movement, we turn our attention to industrial agriculture as an embodiment of enforced dependency.

**Industrial Agriculture as Enforced Dependency**

The Green Revolution serves as a particularly important source of dependency creation – pushing people off of the land so they are unable to grow their own food and making them dependent on wages in order to feed themselves and their families. The Green Revolution began after WWII, has continued throughout the 1960s, and continues to expand today. The Green Revolution involved the development and use of petroleum based pesticides and herbicides, use of natural-gas-based nitrogen fertilizers, use of hybrid seeds, and use of petroleum fueled farm equipment to plant, care for, and harvest large monocultures. In order to realize economies of scale using these agricultural methods, agricultural activities expanded drastically, advancing the industrial agriculture of present and recent decades. Subsistence growers and small farmers who produced diverse crops and raised small numbers of animals were unable to compete in a market economy with low cost, often imported, agricultural products grown using Green Revolution methods. At the same time, forces at work in the global political economy created conditions that drove large numbers of rural people off the land, many of them into the ever expanding rings of squatter slums surrounding today’s megacities. These forces include:
• National and international pressures to modernize,
• The need for nations to earn foreign exchange through growing export crops,
• Costs of employing Green Revolution methods, prohibitive to all but very large agricultural interests,
• The ability of the rapidly growing international agribusiness sector to purchase land formerly occupied and worked by subsistence farmers, and
• Post-war national and international policy and struggle for political hegemony. (Araghi, 1995; Homer-Dixon, 2006, chap. 1 and 3; Norberg-Hodge, Merrifield, & Gorelick, 2002, chap. 1)

The ability of the increasingly concentrated agribusiness sector to finance and purchase industrial agricultural inputs was an important technological factor in displacement of the rural poor, but as we shall see below, industrial, export-oriented agricultural production was, in large measure, also a product of political forces.

Agribusiness has profited immensely from the industrialization of agriculture. Meanwhile, rural subsistence producers were forced to trade their self-sufficient status for enforced dependency. Global capital benefitted as migrants from rural areas poured into cities to become exploitable workers and new customers. Global South nations faced new challenges of engineering economic growth to provide employment for vastly expanding urban poor populations and of paying for much needed social services while servicing external debt.

The social and ecological problems of globalized, industrial agriculture derive in large measure from the assumed separation of humans from the environment. I argued in chapter four that living sustainably requires learning and living a holistic ontology of place that (re)situates people within local ecologies and serves as a platform for sustainability-oriented praxis. I also
argued that many indigenous cultures as well as certain threads within Western European-based cultures offer examples and sources for (re)developing sustainability-oriented, holistic ontologies of place. Industrial agriculture is a refutation of a holistic ontology of place, and it destroys rather than supports diverse and reciprocating integration of societies with nature. It is a one-size-fits-all, technologically and energy intensive system that overruns nature as opposed to working with it.

If we hope to effectively reduce enforced dependencies within the globalized food system, it is important to understand exactly how and why industrial agriculture enforces unsustainable dependencies within the world-system. Articulating this understanding is the goal of this section. Such understanding will help us envision multiple points of intervention through praxis in the areas of direct action, political activism, and policy development and enforcement. I will discuss examples of successful intervention in later sections of this chapter.

We begin our exploration of industrial agriculture as a system of enforced dependency with a discussion of Marx’s notion of metabolic rift. The theory of metabolic rift emphasizes this central contradiction of modern, industrial society: the illusory separation between humans and nature, with people purportedly in control of nature. We will then explore how metabolic rift permeates the processes of industrial agriculture today to an extent that far surpasses the destruction caused by agriculture in Marx’s time. We will explore how and why both the ecological and social crises of agriculture enforce unsustainable dependencies, and we will discuss the structural role of industrial agriculture in concentrating wealth and power and enforcing dependencies within the U.S. In the closing subsection of this exploration, we will situate industrial agriculture within a world-historical analysis of the global phenomenon of
depeasantization and the dependencies enforced at various levels and scales worldwide as a result of this phenomenon.

Marx’s Conception of Metabolic Rift and the Ecological Crisis of Agriculture

Marx’s theory of metabolic rift applies to industrial agriculture in that it offers a point of departure in analyzing how industrial agriculture exemplifies the conceptualized rift between humans and nature in the modern Westernized worldview. For Marx, metabolic rift points to the separation of human subjects from an objectified nature. The reification of nature and people typifies the process of exploitation that makes economic growth possible. Paradoxically, this cultural orientation toward domination creates and enforces unsustainable dependencies. Marx’s theory articulates well with the critical social theory of sustainability developed in chapter two in that it serves as an important lens through which to view agriculture as a socio-ecological process. Marx’s theory conceptualizes agriculture as both bounded by natural laws and thoroughly embedded in society and culture so that social contradictions permeate its processes.

According to Marx, industrial agriculture is robbery of both the soil and the workers. This theft results in widespread dependencies on nonlocal and nonrenewable or exhaustible agricultural inputs used to maintain soil fertility. It also results in undermining the self-sufficiency of workers everywhere through alienating them from the land. This alienation also occurs among farmers who focus on technological and chemical inputs and the management of the farm as a business enterprise. Modern agriculture embodies these social contradictions because it fails to recognize and respect a metabolism in which nature and humans are mutually and reciprocally engaged and within which the ability of people to create wealth depends upon the wealth-creating potential of nature (see Foster, 2009, pp. 175-187). Once severed from the land as the source of life and made dependent upon industrial food systems, people are easily
exploited within interwoven and mutually reinforcing systems of enforced dependency that characterize modern globalization. Marx states:

Capitalist production collects the population together in great centres, and causes the urban population to achieve an ever-growing preponderance. This has two results. On the one hand it concentrates the historical motive force of society; on the other hand, it disturbs the metabolic interaction between man and the earth, i.e., it prevents the return to the soil of its constituent elements consumed by man in the form of food and clothing; hence it hinders the operation of the eternal natural condition for the lasting fertility of the soil…. But by destroying the circumstances surrounding that metabolism … it compels its systematic restoration as a regulative law of social production, and in a form adequate to the full development of the human race…. All progress in capitalist agriculture is a progress in the art, not only of robbing the worker, but of robbing the soil; all progress in increasing the fertility of the soil for a given time is a progress toward ruining the more long-lasting sources of that fertility…. Capitalist production, therefore, only develops the techniques and the degree of combination of the social process of production by simultaneously undermining the original sources of all wealth – the soil and the worker. (quoted in Foster, 2009, p. 176)

Marx noted that the importation of guano from Peru to fertilize English fields facilitated the continued industrialization of agriculture while creating a dependence on nonlocal inputs as a substitute for the nutrient cycling within localized food systems (see Foster, 2009, p. 177). To Marx, emerging industrial agriculture was emblematic of a fundamental social contradiction in the form of a metabolic rift between humans and nature. In creating this rift, capitalists were sowing the seeds of destruction for modern societies.


In the last half century, agricultural area has increased from 4.5 to 5 billion hectares, increasing annual world food production from about 1.8 to 3.9 billion tonnes. Over the same period, the number of chickens has increased fourfold to 16.4 billion, pigs twofold to 950 million, cattle and buffaloes by about a half to 1.5 billion, and sheep and goats by forty percent to 1.8 billion. The key drivers of production intensity have grown rapidly too, with irrigation area doubling to 270 million hectares, tractors and other agricultural
machinery more than doubling to 31 million in number, and fertilizer use up more than fourfold to 142 million tonnes per year. (pp. 140-141)

As Marx’s analysis suggests, however, industrial agriculture, reliant as it is on nonlocal chemical inputs, has proven to be ecologically unsustainable as well as socially destructive. It has fostered and enforced new forms of dependency that have systematically depleted both people and place, making both increasingly vulnerable to exploitation within the global market economy.

Contemporary authors have highlighted the many interwoven social contradictions of metabolic rift that have cascaded throughout the food system and entire societies (see Bell, 2004, chap. 1-3; Buttel, 1980; Norberg-Hodge, Merrrifield, & Gorelick, 2002; Pfeiffer, 2006; Pretty, 2002, 2005, 2007; Shiva, 2002). Like Marx, these authors note that the destructive processes of industrial agriculture impact the very systems upon which agriculture depends for inputs and services, including local ecologies as well as human communities and cultures. The Green Revolution is also unsustainable in that it relies on nonrenewable and rapidly depleting hydrocarbon energy and chemical inputs. Petrochemically-reliant agriculture has deepened the metabolic rift identified by Marx, multiplying the socio-ecological costs of this rift across the globe. According to Dale Allen Pfeiffer (2006), the costs of industrial agriculture are beginning to outweigh its benefits:

Just at the point when agriculture was running out of unexploited tillable lands, technological breakthroughs in the 1950s and 1960s allowed it to continue increasing production through the use of marginal and depleted lands. This transformation is known as the Green Revolution.... Between 1950 and 1984 ... world grain production increased by 250 percent.... The energy for the Green Revolution was provided by fossil fuel-based fertilizers and pesticides, and hydrocarbon-fueled irrigation.... In the United States, the equivalent of 400 gallons of oil is expended annually to feed each US citizen (as of 1994).... Between 1945 and 1994 energy input to agriculture increased fourfold while crop yields only increased threefold. Since then, energy input has continued to increase without a corresponding increase in crop yield. We have reached the point of marginal returns.... Modern agriculture must continue increasing its energy expenditures simply to maintain current crop yields. (pp. 7-9)
Through reading the literature critiquing industrial agriculture and observing the devastation of communities of small farmers globally, one can recognize the many ways in which modern agriculture embodies metabolic rift in its destruction the socio-ecological foundations of its own continuance. Modern, industrial agriculture wastes water and depletes limited sources of fresh water such as rivers and underground aquifers. In the U.S., industrial agriculture uses 85 percent of all fresh water used annually (Pfeiffer, 2006, p. 15), and much of this water comes from aquifers that are being drawn upon at well above their recharge rates. The Ogallala Aquifer that supplies water for much of America’s Midwestern breadbasket is being drawn upon at 130 to 160 percent above its recharge rate (Pfeiffer, 2006, p. 17). The fact that vast amounts of grain grown in the U.S. Midwest go to feed animals in feed lots further compounds the problems of water overdraft in the industrial food system.

Industrial agriculture also contributes to salinization of soils through water logging in the process of flood irrigation, and it is a major contributor to toxic contamination of water through pesticide, herbicide, and fertilizer runoff and seepage. Agricultural runoff transports inorganic pesticides and fertilizers into rivers, lakes, reservoirs, and oceans where they contaminate ecosystems and human populations virtually everywhere. Eutrophication of waterways and deltas carrying heavy nutrient loads due to agricultural runoff leads to massive dead zones spreading offshore from major river drainages such as the Mississippi River delta (Norberg-Hodge et al., 2002, p. 39; Pfeiffer, 2006, p. 18; Pretty, 2007, p. 141).

Industrial agriculture relies on monocultures and typically does not engage in crop rotations. These practices tend to increase the severity of pest infestations and the consequent use of petroleum-derived, toxic pesticides (Buttel, 1980, p. 46). Through use of these chemicals, industrial agriculture threatens the dynamic stability of ecosystems by introducing toxins into
food webs at all levels, thereby threatening the health, not only of humans, but of a wide variety of other creatures (Buttel, 1980, pp. 46-47; Norberg-Hodge et al., 2002, p. 39; Pretty, 2007, p. 141). Pesticides have been shown to contribute to aggressive behavior in exposed individuals, and since many are endocrine disrupters, they are thought to be contributing to early onset of puberty in industrialized countries. These chemicals have not been tested for safety when they are combined with each other, which is how they occur in the environment, nor have they been tested over the long time spans necessary for identifying potential implications for diseases such as cancer (Norberg-Hodge et al., 2002, pp. 54-55). Furthermore, pesticide usage appears to have increased to the point of diminishing returns. According to Pfeiffer (2006), “In the last two decades, the use of hydrocarbon-based pesticides in the US has increased thirty-three fold, yet each year we lose more crops to pests” (p. 23).

Pesticides also contaminate the soil, resulting in “disruption of chemical signaling between host plants and N-fixing [nitrogen-fixing] Rhiz [rhizobia bacteria] necessary for efficient SNF [symbiotic nitrogen fixation] and optimal plant yield” (Fox, Guldledge, Englehaupt, Burrow, & McLachlan, 2007, p. 10284). In a world of depleting fossil fuels and climate change, food production must eventually rely entirely on natural processes for the fixation of nitrogen in the soil. Since pesticides damage the nitrogen-fixing symbiosis between bacteria in the soil and leguminous plants, conventional agricultural methods are creating soil that is, not only depleted of plant nutrients and organic matter, but poisonous to the very soil processes upon which we will soon need to exclusively rely for providing the nitrogen necessary for sufficient crop yields. To make matters worse, the damage we are inflicting on the soil now will negatively impact food production even after we cease applying chemical pesticides (see Fox et al., 2007).
Industrial agriculture also decreases the water retentive capacity of the soil by systematically depleting it of organic humus. These reductions in the soil’s ability to hold water could prove devastating in terms of food production in an era of climate change in which rainfall patterns are changing and glacial sources of water that serve millions are shrinking rapidly. Industrial agriculture also vastly exacerbates soil erosion that results in increased sediment loads in rivers and streams and massive losses of topsoil necessary for supporting plant life (Buttel, 1980, pp. 46-47). According to Pfeiffer (2006), “It takes 500 years for nature to replace 1 inch of topsoil. Approximately 3,000 years are needed for natural reformation of topsoil to the depth needed for satisfactory crop production” (p. 11).

In the 19th century, Marx remarked on the transfer of nutrients from one place to another as a result of farming. Marx noted that farming was depleting the soil in some places while other places were becoming overwhelmed with problems of disposing of concentrated nutrients. Today, due to the concentration of animals in feed lots and other large scale production facilities, manure has become a problem waste (Norberg-Hodge et al., 2002, p. 41), and costs are high for transporting it to farms where it could serve as fertilizer for depleted soils. The lack of locally available manure for most farms results in increased use of inorganic fertilizers for which the major chemical feedstock is natural gas (Buttel, 1980, p. 46; Greene, 2004).

According to the International Commission on the Future of Food and Agriculture (ICFFA) (2008) chaired by Vandana Shiva, industrial agriculture is also a major source of pollution that is causing global warming, perhaps the most dramatic and threatening result of metabolic rift:

According to the Stern Review Report on the Economics of Climate Change, agricultural activities directly contribute 14 percent of greenhouse gases. However, this is not the entire picture. Land use (largely referring to deforestation for globalized agriculture)

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31 For additional 20th century examples of nutrient concentration, see Buttel, 1980, p. 46.
accounts for 18 percent, and transport accounts for 14 percent…. Thus, a significant percentage of emissions from both the land use and transportation categories can also be attributed to industrial food and agriculture systems…. Some estimate that at least 25 percent of global emissions are related to non sustainable agriculture (p. 13).

Industrial agriculture contributes directly to climate change through emissions of the major greenhouse gases – carbon dioxide …, methane …, and nitrous oxide …. Carbon dioxide emissions are largely caused by the loss of soil carbon to the atmosphere … and the energy intensive production of fertilizers…. According to the 2007 IPCC [Intergovernmental Panel on Climate Change] Report, nitrogen fertilizers account for 38 percent, the largest single source of emissions from agriculture. Chemically fertilized soils release high levels of nitrous oxide…. Ruminants [also] produce methane via enteric fermentation which increases when cattle are fed intensive feed. At 32 percent this is the second largest source of emissions. An additional 11 percent of agricultural emissions comes from intensive chemical cultivation of rice (p. 14).

Conversion of natural ecosystems for industrial agriculture causes depletion of the soil carbon pool by 60-75% which is mostly emitted to the atmosphere as CO2. Some soils have lost as much as 20 to 80 tons of carbon per hectare…. (p. 15)

Mechanization of agriculture, the use of inorganic fertilizers and pesticides, and the transportation of foods within the system of neoliberal globalization translate to increased fossil energy inputs for industrial agriculture as compared to those for smaller, diverse farming operations focused more on production for localized consumption (Norberg-Hodge et al., 2002; Power of Community, 2006). These inputs, as the ICFFA shows, contribute significantly to global warming (ICFFA, 2008). Industrial agricultural practices increase and enforce dependencies on fossil-fuel-based, toxic inputs that deplete fossil energy reserves and imperil the biosphere. These dependencies are enforced in a vicious cycle of mutually and self reinforcing socio-ecological problems that include declining soil fertility, reductions in the soil’s water retentive capacity, reduced symbiosis between nitrogen fixing bacteria and leguminous plants, and declining proportions of organic matter in the soil. Fresh water depletion and increasing levels of water contamination exacerbate the effects of this vicious cycle. In the short term and in the eyes of industrial agriculture, the solution to the problems of diminishing returns is typically more of the same: intensification of the industrial processes of farming, the very processes which
caused the problems in the first place. Dependency enforcing processes of industrial agriculture also include the social processes and pressures that characterize the agricultural treadmill, which will be discussed in some detail in the next section.

We now turn our attention to exploring the social aspects of the continued deepening of the metabolic rift in modern agriculture and the consequent proliferation of mutually enforcing dependencies. We will see why changing the trajectory of modern agriculture is both so difficult and so necessary for achieving socio-ecological living sustainability.

**Enforced Dependency and the Social Crisis of Agriculture**

The socio-ecological crisis of industrial agriculture, in large measure, has its origins in European colonization of the globe and the resulting production and extraction for export that fueled the industrialization of Europe (Miller, 1999; Norberg-Hodge et al., 2002, p. 5). During the colonial era, subsistence producers of colonizing nations were dispossessed as agriculture was transformed into yet another activity from which surplus value could be extracted by the owners of capital and land. The often forcible removal of small, independent producers from the land in order to make way for generation of profits by moneyed interests represents the beginnings of deep metabolic rift on a scale that would result in the complete alienation of most modern people from the land and their continually increasing concentration in urban centers.

But the processes of agriculture during the early colonial era were not yet mechanized, and increased production required increased numbers of laborers (Lyson, 2004, p. 14). Only with the advent of industrial-scale farm machinery and the increasingly widespread availability of chemical inputs in the 18th, 19th and 20th centuries could farming come to resemble the factory mode of production which characterizes industrialism. Making way for maximization of profits

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32 See Pretty on the Scottish clearances through which the wealthy gained access to large areas of land which they converted from subsistence production to the raising of sheep for wool, an activity that required only a small labor force and, at least initially, yielded large profits (Pretty, 2007, pp. 183-192).
through economies of scale made possible under the industrial model of farming required the removal of still more smallholders from the land (see Ploeg, 2008, p. 126). Smallholders were removed by a variety of methods: though force, through policy, and through the continually increasing speed and force of the agricultural treadmill, as will be explained below. In Europe, interest subsidies for capital investment by farmers combined with tax reforms and state-financed stabilization of prices for agricultural commodities made capital investment in agriculture more attractive when compared to labor costs. Furthermore, new technologies were developed and supported by state extension services. These technologies allowed for intensification of production without the increases in labor that would have been required under traditional farming methods. Specialization was therefore facilitated by government and resulted in production cost advantages (Ploeg, 2008, p. 127).

The removal of people from the land resulted in widespread enforced dependency as people were increasingly made dependent upon wage labor and, therefore, subject to capitalist exploitation in their efforts to obtain the necessities of life. In the United States, “Less than 100 years ago, most rural households … sustained themselves by farming” (Lyson, 2004, p. 8), and a far greater proportion of the nation’s population resided in rural areas. Today, only 2.3% of the workforce in the U.S. is employed in farming (Bell, 2004, p. 9). Globally, in the aggregate, rural inhabitants as a percentage of the total population declined sharply from over 70% to approximately 50% between 1945 and 1990, and this decline was evidenced in virtually all parts of the world (Araghi, 1995, p. 339). Displaced and dispossessed rural people joined the ranks of low wage workers or the urban poor scraping together a living in the informal economy. And, perhaps most importantly from a capitalist perspective, they became customers to whom basic necessities could now be sold.
For those who remained in agriculture, a central source of enforced dependencies is what has been called the squeeze on agriculture or the agricultural treadmill. The treadmill involves mutually reinforcing factors and processes that drive prices for farm products lower while simultaneously requiring increasing investments by farmers in agricultural inputs and other farm technologies. Following is a description of how the treadmill works.

Many small farmers produce the same products so that no single producer can affect the price. A new technology allows early adopters to capture additional profits from increased production until the technology is widely accepted and prices fall accordingly. Late adopters or those who fail to adopt the new methods and tools also see their profits drop when prices fall to new lows that result from gains in overall production efficiency and increasingly globalized price competition. This process repeats itself as new technologies capable of increasing production and economies of scale are continually invented and adopted by farmers (Douthwaite, 2004, pp. 114-115; Norberg-Hodge et al., 2002, p. 7; Ploeg, 2008, pp. 129-130; Pretty, 2005, p. 108). The farms that survive grow very large in an effort to maintain profits in an atmosphere of declining marginal returns per unit of land farmed. Pretty (2002) describes the process of concentration of ownership resulting from the operation of the agricultural treadmill:

The farm is swallowed up so another farm can compete better, until that, too, needs to get bigger again. During the past 50 years, 4 million farms have disappeared in the US. This is equivalent to 219 for every single one of those 18,000 days…. In France 9 million farms in 1880 became just 1.5 million by the 1990s. In Japan, 6 million farmers in 1950 became 4 million by 2000. (p. 107; see also Bell, 2004, p. 2; Norberg-Hodge et al., 2002, p. 6-7)

Though their farms become larger, the farmers themselves do not become richer. In fact, a large proportion of them become increasingly indebted because of their continual need to invest in new, expensive technologies in order to capture profits made possible through timely technological advancement. They find themselves on a treadmill that runs faster and faster as
new technologies for agricultural production are introduced. Many eventually cannot keep up and succumb to foreclosures, making way for further increases in farm size among the farmers that remain. All the while, an increasing proportion of agricultural profits are captured by the agribusiness inputs and food processing sectors which are themselves assuming larger and larger scale and monopoly or near-monopoly status (see Norberg-Hodge et al., 2002). As a result of the global squeeze on agriculture, “Economic insecurity and inequality among farmers provide conditions conducive for the penetration of an integrated corporate system of food processing and distribution” (Buttel, 1980, pp. 45-46). The corporations that dominate this system, in turn, can require that specific production methods are used by their farmer suppliers, thereby reinforcing the effects of the agricultural treadmill.

The structure of farm subsidies in the United States has also tended speed up the agricultural treadmill because subsidies tend to favor large farms over smaller ones. According to Norberg-Hodge, Merrifield, & Gorelick (2002), “In the United States alone, $27 billion in tax money was earmarked for farmers in 2000, most of which went to large industrial farms” (p. 71; see also Lyson, 2004, p. 34). The provision of these subsidies, not only disadvantages small farmers within the U.S., it artificially depresses prices for agricultural products globally so that small producers around the world find it difficult or impossible to compete in the global marketplace. Global transportation infrastructures also represent a huge hidden subsidy to industrial agriculture that allows it to out-compete small local producers (Norberg-Hodge, et al. 2002, p. 25). Pretty (2002) provides statistics for the U.S. that demonstrate the concentration of farm ownership, the increasing size of farms, and the disproportionate effects of farm subsidies on small versus large operations:

In the US, the changing numbers of farmers and average farm size show an interesting pattern. Farm numbers increased steadily from 1.5 million to more than 6 million from
1860 to the 1920s ... then fell rapidly since the 1950s to today’s 2 million. Over the same period, average farm size remained remarkably stable for 100 years, around 60-80 hectares; but it climbed from the 1950s to today’s average of 187 hectares.

However, hidden in these averages are deeply worrying trends. Only 4 percent of all US farms are over 800 hectares in size, and 47 per cent are smaller than 40 hectares. Technically, 94 per cent of US farms are defined as small farms – but they receive only 41 per cent of all farm receipts. Thus, 120,000 farms out of the total 2 million receive 60 per cent of all income. The recent National Commission on Small Farms noted: ‘The pace of industrialization of agriculture has quickened. The dominant trend is a few large vertically integrated farms controlling the majority of food and fibre products in an increasingly global processing and distribution system.’ (pp. 107-108)

Industrial agriculture increasingly generates widespread, enforced dependencies, in part, because it embodies the ever present social contradictions of economic inequity and concentration of wealth and power that result from modern, technologically driven, globalized capitalism combined with politically driven favoritism of large corporate entities.

Furthermore, modern farmers have grown increasingly dependent upon agribusiness corporations whose technologies drive the agricultural treadmill and who also increasingly dominate the purchasing market for farm products. In the area of seed provision, for example, farmers must rely increasingly on highly concentrated providers attempting to maximize their profits through their virtual monopoly status.

But dependency is not enforced solely on the input provision side of the agricultural equation. Agribusiness giants enforce dependency as they drive demands for particular inputs and production processes through stipulations in contracts for the purchase of farm outputs. Norberg-Hodge, Merrifield, and Gorelick (2002) emphasize the concentration of ownership and power in both the agricultural inputs and food processing arms of agribusiness:

In the United States, the three largest beef processors control 74 percent of the nation’s beef-packing capacity. Another four companies control 84 percent of American cereal, and just two companies control 70 to 80 percent of the world’s grain trade. Five agribusinesses account for nearly two-thirds of the global pesticide market, almost one-quarter of the global seed market, and virtually 100 percent of the transgenic seed market…. Nine companies now dominate the global seed market. (p. 89)
Farmer dependency on large, vertically integrated food processing giants is enforced through the size and market penetration of these corporate entities that can often dictate the precise products they desire farmers to produce, the specific means of production, and the price they are willing to pay for end products. Producers must engage with agribusiness corporations in virtually all phases of production, from the purchase of seeds and inputs to banking, distribution of their products, storage, processing, and marketing (Dyer, 1998, p. 110). In the U.S., it is difficult to raise livestock without a contract with a major corporate processor who will guarantee to buy one’s animals because, in many parts of the country, there is only one buyer (Norberg-Hodge et al., 2002, pp. 10-12). According to Thomas Lyson, (2004), the situation is similar for vegetable production:

Today, in the United States, about 85 percent of processed vegetables are grown under contract and 15 percent are produced on large corporate farms. Contract farming allows food processors to exert significant control over their agricultural suppliers. While the processor benefits from these arrangements, the major disadvantage to the farmer is loss of independence. Many contracts specify quantity, quality, price, and delivery date, and in some instances the processor is completely involved in the management of the farm, including input provision. (p. 45)

Contract farming also contributes to increasing farm sizes as agribusiness corporations strive to capture economies of scale (Lyson, 2004, p. 46).

The concentration of wealth and power in the food processing industry is reinforced by concentration within the retail food industry where large grocery retailers are concentrating ownership. In the U.S., “average market concentration of the top four retailers in individual metropolitan areas stands at about 75 percent” (Lyson, 2004, p. 53). These retailers are centralizing their management at corporate headquarters and forging supply chains with global food processors (Lyson, 2004, p. 53). As a result of their ability to foster price competition among their suppliers and to realize economies of scale, they enjoy lower per unit costs.
Obtaining foods from diverse, localized sources would mean foregoing a portion of their profits and reducing their control over the food system. According to Norberg-Hodge, et al., “For each supermarket to sell more than a token amount of foods produced nearby would jeopardize the structures and continual shareholder profits on which the entire global food system is based” (Norberg-Hodge et al., 2002, p. 67).

The management of global agribusiness, furthermore, reflects the interests of a small number of people with particular class interests who stand to profit a great deal from maintaining concentrated control of the industry. According to Lyson (2004), “Only 138 men and women sit on the boards of directors of the ten firms that account for over half of all the food sold in America…. Individuals who are recruited to sit on the boards of large American corporations come from similar social and economic backgrounds and belong to the same social circles” (Lyson, 2004, p. 54).

The effects of input providers and food processing giants capturing ever larger proportions of profits from the sale of food are discussed by Pretty (2002): “Fifty years ago, farmers in Europe and North America received as income between 45-60 per cent of the money consumers spent on food. Today, that proportion has dropped dramatically to just 7 per cent in the UK and 3-4 per cent in the US, though it remains at 18 per cent in France” (p. 111). The increasing capture of food industry profits by agribusiness adds motive force to the agricultural treadmill that enforces dependencies within an atmosphere of diminishing returns to both scale and capital investment.

For small producers of food globally, their state of dependence and subsequent insecurity is emblematic of what it means to have one’s resources and the control over one’s life steadily reduced through enforced dependency. As discussed in chapter three, neoliberal development
policies of nations and global development banks encourage export-led development, which results in the growing of large monocultures for export. Many small farmers, who may formerly have been relatively self-sufficient, have been bought out by large interests or pulled into the industrial agricultural model so that they produce and sell commodities and purchase food for their own consumption through the global food system. Industrial producers exist in a precarious position in which fluctuations in the relative values of currencies, economic recessions in other parts of the world, larger than expected crop yields in other countries, and other macroeconomic factors well beyond their control can spell economic disaster for them, their families, and their communities (Dyer, 1998; Norberg-Hodge et al., 2002, p. 69). Low cost imports of basic food necessities further contribute to destroying local self-sufficiency (Black, 2001; Douthwaite, 2004; International Society for Ecology and Culture, 1993; Norberg-Hodge, 1991/1992). According to Araghi (1995), between 1951 and 1972, export subsidies for U.S. grain producers were an instrumental factor in depressing grain prices globally and discouraging production in formerly self-sufficient or surplus-producing areas of the Global South, even as food consumption increased along with population (p. 349). These pressures have been intensified in the era of neoliberal globalization. The International Commission on the Future of Food and Agriculture (2008) cites Mexico as a case in point:

According to the FAO [Food and Agriculture Organization of the United Nations], the liberalized economic globalization model has led to a 54 percent increase of food imports between 1990 and 2000 by least developed countries…. Mexico, which traditionally has grown enough maize to feed its populations for centuries, has become a net importer of maize due to dumping of artificially cheap corn flooding in from the U.S. (2008, p. 20)

The ever intensifying squeeze on agriculture is also self-reinforcing because it destroys relationships of trust and reciprocity in farming communities. It makes farmers “increasingly less

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33 The U.S. is not immune to the social and economic forces that induced and continue to promote large-scale, commodity agriculture. See Pfeiffer, 2006, pp. 25-26.
likely to look to their neighbors for answers, lest either party gain an advantage over the other.” Instead, farmers turn to answers provided by the agricultural treadmill itself (Bell, 2004, p. 236), reinforcing their dependency. Michael Merrifield Bell (2004) interviewed a conventional farmer who said that, if he had an idea that would improve his earnings per acre, he would be stupid to tell others about it. He would keep it to himself, rent extra land, and make more money for himself (p. 182). This farmer, like many others, had internalized the logic of industrial agriculture.

In sum, widespread enforced dependency within the food system derives from two complementary social forces: 1) the situation of farmers running ever faster on the agricultural treadmill or dispossessed by the globalized industrial agricultural system and 2) the concentration of populations in urban areas where many people do not or cannot produce much or any food themselves. These sources of enforced dependency are further reinforced by the ecological sources of enforced dependency discussed above. Buttel (1980) summarizes the structural ramifications of the agricultural treadmill in the U.S.:

U.S. agriculture and its food system have exhibited five principle structural changes during recent decades: (1) a trend toward large-scale, specialized farm production units, (2) increased mechanization, (3) increased use of purchased biochemical inputs (and corresponding transfer of the input-providing function of agriculture to the non-farm sector), (4) a trend toward regional specialization of production, and (5) an increased level of food processing and interregional marketing. Moreover, these trends are interrelated and mutually-reinforcing. (Buttel, 1980, p. 45)

These structural changes translate to a loss of economic and decision-making control by both farmers and consumers and a corresponding concentration of economic power and control within the non-farm agribusiness sector.

For those subjected to the harsh consequences of industrial agriculture, the stress they experience can lead, not only to economic dispossession – it can become deadly. The sense of
shame and anger farmers feel for losing the family farm to debt can be immense, leading many to take their own lives, as large numbers of farmers are doing the in the United Kingdom (Norberg-Hodge et al., 2002, p. 84). In the United States, intensification of the squeeze on agriculture during the 1980s led to crisis levels of farmer indebtedness and widespread suicides among farmers. In a study conducted in 1989, the suicide rate among U.S. farmers was three times the rate in the general population (Dyer, 1998, p. 33). In the late 1990s, Joel Dyer (1998) noted that suicide had become “the number one cause of death on America’s farms” (p. 3). According to Dyer (1998),

Many of the suicides in rural America are a reflection of its unique culture and belief system. Psychologists believe that rural suicides often fall into the category they refer to as altruistic suicide, a suicide in which a society’s customs or rules sanction or even require the death…. A farmer who kills himself to allow his family to collect insurance money and save the farm is often thought to be honorable in the subculture of rural America. (p. 33)

For these farmers, being thrown off the back of the agricultural treadmill means utter economic devastation and destruction of self esteem. In their eyes, suicide can seem to be a solution to personal pain and a means to help one’s family escape the disempowering financial squeeze to which modern farmers and their families are subjected.

According to Vandana Shiva (2008) whose Navdanya movement in India promotes organic, biodiverse farming, the agricultural treadmill is not necessary to high crop yields nor to sufficient farmer incomes (p. 110). There are alternatives to the treadmill for making a living in farming:

Navdanya’s work over the past 20 years has shown that we can grow more food and provide higher incomes to farmers without destroying the environment and killing peasants. We can lower the costs of production while increasing output. We have done this successfully on thousands of farms and have created a fair, just, and sustainable economy. The epidemic of farmer suicides in India is concentrated in regions where chemical intensification has increased costs of production…. Biodiverse organic farming
creates a debt-free, suicide-free productive alternative to industrialized corporate agriculture…. (p. 111; for data on increased yields, see Shiva, 2008, pp. 113, 116)

Below, we will explore (re)localization of agriculture as a means to simultaneously drain power away from the global agribusiness sector and build sustainable foundations for personal and community resilience and prosperity.

Through the industrial food system, dependency is also enforced at the community level because the squeeze on agriculture breaks down community potentia\textsuperscript{34} and thereby increases reliance on systems and entities outside the community and beyond community control. Buttel (1980) references a 1947 study comparing the effects of emerging large-scale agriculture on communities in the U.S.:

A now classic study by the anthropologist Walter Goldschmidt (1947) … pointed to some profound and deleterious impacts that the emergence of large-scale agriculture was having on rural communities in California…. The most direct consequence … involves the reduction of the size of the farm population that results from mechanization and increasing farm size…. A declining population results in a decline in rural community population [and sets] in motion a downward community and regional multiplier effect which accentuates the economic consequences of the original decline of population. (p. 47; see also Lyson, 2004, pp. 66-68)

Based on his reading of the Goldschmidt study and other evidence, Buttel (1980) concludes that “the trajectory of agricultural development in the U.S.A. has had decidedly adverse impacts on the socioeconomic fabric of rural communities and regions” (p. 48; see also Norberg-Hodge et al., 2002, pp. 70-71).

\textsuperscript{34} Many authors use the term \textit{social capital} to denote a community’s capacity to engage in healthy social production and reproduction and in the collective generation and protection of material community wealth. According to these authors, social capital is comprised of networks of reciprocating relationships built upon a framework of trust in individuals and the community at large to both continue and support reciprocating relationships that provide mutual aid and security while also fostering the development of satisfying relationships (see, for example, Pretty, 2002, pp. 152-153). I prefer to use the term \textit{community potentia} rather than \textit{social capital} in order to avoid conceptualizing the creative potential of social networks as merely instrumental to capital accumulation. I draw the term \textit{potentia} from Dussel (2008) who claims that the sole foundation of social power is “the political community, or the people” (p. 18; emphasis in original). He defines \textit{potentia} as the possible, but as yet unrealized, consensual will of the community that can be expressed through formation of socially agreed upon forms and institutions of all kinds and scales (pp. 18-23). The community bonds referred to as social capital by many authors represent constitutive factors in community \textit{potentia}. Conceptualizing community \textit{potentia} as independent from the capitalist system creates opportunities for recognizing its potential to contribute to radical social and economic change.
The decline of rural communities in the U.S. is closely tied to the economic decline of small family farms spurred by the increasing velocity and momentum of the agricultural treadmill. Additional social phenomena compound the effects of economic decline as rural communities fall into a downward spiral of social upheaval and community disintegration. These phenomena comprise an overall loss of community *potentia*. According to Pretty (2002), central features of a community’s social capital or *potentia* include “relations of trust; reciprocity and exchanges; common rules, norms and sanctions; and connectedness, networks and groups” (p. 152). Communities with high levels of *potentia*, according to Pretty (2002), engage in “specific reciprocity” and “diffuse reciprocity” (p. 152). Specific reciprocity entails reciprocal exchanges of goods, services, or support between specific people who engage in exchanges with the expectation of receiving a specific return from a particular person or group. Diffuse reciprocity entails providing goods, services, or support to other community members with the idea that, when you or your family is in need of assistance, someone or some group within the community will offer the needed assistance. Diffuse reciprocity derives from community norms of mutuality and support.

We have already discussed how the agricultural treadmill increases competition among farmers. This high-stakes competition is antithetical to community connectedness, trust, sharing, and the offering of reciprocal assistance in either specific or diffuse forms. The treadmill is therefore the overriding contributor to, not only the economic decline of farming communities, but also the loss of relationships that characterize resilient communities with high *potentia*. A community that lacks *potentia* is less resilient in the face of external shocks and pressures, and its population is more vulnerable to the enforced dependency that permeates the modern,
globalized, and monetized economic system upon which isolated individuals and families must rely for the satisfaction of basic needs.

We have discussed the social crisis in agriculture and its causes, from the scale of the individual farm to that of the global food industry, with an emphasis on revealing interlocking and mutually reinforcing systems of enforced dependency that characterize the industrial food system. This explication, provides us with a well developed critique that can inform counterhegemonic food praxis, the topic of the second half of this chapter. We can clearly see that increasing (re)localization of the food system would result in increased community resiliency. But, in order to understand the truly global implications of local food as counterhegemony, it is necessary to examine the role of industrial agriculture in supporting industrialization and capitalist market hegemony in all facets of life. We will begin this investigation by highlighting the structural role of industrial agriculture in the United States. We will follow this discussion with an examination of how the U.S. model for development became an ideological tool for U.S. hegemony and neoliberal reforms worldwide.

The Structural Role of Industrial Agriculture in U.S. Development

Buttel (1980) argues that overproduction in agriculture has played an important role in making the industrialization as a whole possible in the U.S. He claims that the structure of agriculture has had a great deal to do with rural underdevelopment and decline as well as with declines in rural environmental quality. Furthermore, according to Buttel (1980), part of the enforcement of enforced dependency has come from the state’s attempts to balance its roles of legitimation and capital accumulation (pp. 49-53). Buttel’s (1980) argument is important to our exploration of industrial agriculture as a system of enforced dependencies because it elucidates important structural, historical, and ideological foundations for the industrialization of
agriculture in America and because it situates industrial agriculture within a large-scale hegemonic political project.

Buttel (1980) argues that two central roles of the state in a capitalist society are to facilitate capital accumulation while also ameliorating discontent arising from the resulting socio-economic inequity (p. 48). As noted in chapter three, the debt-and-interest-based system of money creation in the modern global economy makes growth a requirement of the economic system if it is to avoid collapse (Daly, 1999; Douthwaite, 1999). At the same time, politicians in representative democracies must acquire the funding requisite to running effective political campaigns. Therefore, elected officials, who dependent heavily upon large corporations for campaign funding, are unlikely to serve the needs of small farmers when doing so interferes with the overarching processes of the capital accumulation advantageous to their biggest supporters, both within and outside the agricultural sector (Buttel, 1980, p. 49). According to Buttel (1980), the following set of policies that characterize agriculture in the U.S. can be grouped under the broad heading of facilitating capital accumulation:

(1) Fostering a commercial (rather than a subsistence-oriented) agriculture that produces a surplus of relatively inexpensive food for consumption by the urban working class, (2) encouragement of exports of food and fiber commodities, (3) rationalization of the agricultural economy, particularly with respect to the endemic tendency toward overproduction and price instability, (4) the underwriting of capital accumulation in the production agriculture and non-farm agricultural industries through agricultural research, and (5) assisting in the international expansion of agribusiness firms that trade in agricultural commodities or market their products in foreign countries. (p. 51)

All of these policies encourage and enforce dependencies, not only domestically, but globally, and they promote the concentration of wealth and power within the globalized world. According to Buttel (1980), these policies are aimed at directing the agricultural sector toward a particular path in the overall trajectory of socioeconomic development. This path for agriculture essentially involves the creation of surpluses (food surpluses to sustain an emerging urban working class, as well as the
extraction of financial surpluses from agriculture for investment in the urban-industrial sector) and markets for the products of industry. Thus, while certain aspects of agricultural policy (especially price supports and agricultural research) have clearly encouraged capital accumulation within agriculture, such internal accumulation need not and often is not essential for underwriting accumulation in the larger political economy. The production of large food surpluses was instrumental in fostering American industrialization. [and] exports of foodstuffs … transformed the U.S. from a debtor-nation in the 19th century to a creditor nation shortly prior to the Great Depression. (p. 51; emphasis added)

Buttel (1980) also argues that support for agricultural research has ironically played an important role in diffusing widespread social unrest. He notes that unrest would likely result from government policies that propel the agricultural treadmill and, therefore, contribute to the bankrupting of farm families and the disintegration of rural communities. According to Buttel (1980), “Agricultural research became attractive to policy-makers because the development of improved farm practices could steer farmers toward individualistic rather than collective solutions to their problems” (p. 52; emphasis in original). If farmers could be encouraged, through the promise of new scientific and technological developments, to respond to economic pressure by competing with one another in an atomized fashion, collective social unrest could be averted, and both the legitimation and capital accumulation goals of the capitalist state would be served. As we have seen through our discussion of the industrial agricultural treadmill, this describes the overarching trajectory of farming in the U.S. during the 20th century.

Buttel (1980) summarizes the character of agricultural policies in the U.S. and points to political change as necessary in order to reverse the decline of rural America:

Agricultural policy has been formulated not so much according to desired goals for the agricultural economy and rural society, but rather according to how agriculture and the rural social structure could be made to serve the accumulation and legitimation roles of the state…. Because of the continued subordination of the agricultural sector to broader corporate and state interests, it becomes increasingly clearer that in order to effect progressive changes that will enhance rural development and rural environmental quality, these will require a qualitatively different agricultural politics than has prevailed in the past. (p. 53)
In these circumstances, political change led from above is a tall order. We will explore below the case of the Cuban response to the fall of the Soviet Union as an example of the state supporting widespread production of food by small producers, both rural and urban. The Cuban government, though, is avowedly not a capitalist government. Although Cuba has participated in the global economy, the government since the revolution has generally sought to increase social and economic equity among its citizens, rather than to facilitate the accumulation of fortunes for a select few. Political change with regard to agricultural policy in the U.S. on the order recommended by Buttel (1980) would require a similar rearrangement of political priorities.

We will also see below how the building of alternative food systems from the grassroots level can help to drain momentum away from the agricultural treadmill, even in the absence of supportive state policies. Buttel (1980) recommends grassroots local food activism as a means to manifest deep social changes. He calls for a holistic analysis of agriculture that leads toward a sustainable political economy. He notes that the pillaging of small farmers and rural communities in service to capital accumulation in the broader economy point to the need for counterhegemony, even within a representative democracy. We can conclude, based on Buttel’s (1980) arguments, that food system agency must be material as well as conceptual. Without resistance, the hegemony of concentrated interests in agribusiness – and transnational corporations more generally – supported by the state, will continue to drive communities and ecosystems into the ground, even as industrial agriculture faces diminishing returns on investments in agricultural science and technology.

We now turn our attention to a world-historical analysis of how the U.S. model of industrial development was used as an ideological tool to facilitate capital accumulation and enforce dependencies within the global economy.
A World-historical Perspective on Dependencies Enforced through Agriculture-related Policies

National and international policies and the struggle for political hegemony in the post-war world-system have created a framework for massive migration of people worldwide off of the land and out of subsistence regimes and into urban centers and wage work or unemployment. New dependencies have been created and enforced among millions of people worldwide who must now depend on money and the global economy as a means to satisfy basic needs. Massive global depeasantization translates to massive new dependencies – and concomitant opportunities for capitalists to make profits and to extend and deepen their economic and social power.

Sociologist Farshad Araghi’s article “Global Depeasantization, 1945-1990” (1995) anchors our discussion on global rural-to-urban migration and its implications. Understanding the factors promoting massive depeasantization creates openings for envisioning and undertaking strategic social change that can reduce enforced dependencies – particularly within the food system which is a critically important leverage point for sustainability praxis in service to community resiliency and autonomy. These strategies and examples of their application will be the focus of the latter sections of this chapter.

From 1945 to 1973, national and international policies affecting agriculture facilitated capital accumulation and the competition among nation states for economic and political hegemony, foremost among these the United States (Araghi, 1995, pp. 344-354). In the neoliberal era, national and international policies affecting agriculture have continued to facilitate capital accumulation, but this accumulation has increasingly benefitted transnational corporations at the expense of nation states (Araghi, 1995, pp. 354-358). During the entire post-war period, national and international policies have resulted in massive depeasantization on a global scale (Araghi, 1995, p. 339).
The early post-war period from 1945 through 1973 was marked by Cold War competition for global political hegemony between the pro-market United States and the socialist Soviet Union. Though ideologically opposed to one another, the aspirations of both were nationalist in orientation. During this era, national liberation movements across the globe served as platforms for Cold War competition between the two superpowers. Both socialist movements that were striving for national political hegemony in the Global South and the Soviet Union that was seeking global political hegemony found it advantageous to meld the idea of peasant struggle with that of worker liberation (Araghi, 1995, p. 344). The Cuban Revolution is an excellent case in point regarding this conjoining of rural, urban, and nationalist struggles.

For its part in the early post-war period, the U.S. supported developmentalist agendas in post-colonial nations that promoted balanced economic development and growth to through import-substitution industrialization. The idea was that developing countries could follow the path of U.S. development based on domestic markets in order to become wealthier and more independent by moving from widespread family farming onward to industrialization. Because market competition was becoming increasingly global in scale and due to other historical factors that Araghi (1995) details, possibilities for people worldwide to achieve the American dream were mostly illusory (p. 345). Still, the idea of other countries duplicating the American experience dominated national and international approaches to agriculture and peasant unrest through the mid-1970s. In non-socialist areas of the world, land reform was encouraged within a

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35 After 1973, the political hegemony of the U.S. began to fray. In 1971, the Bretton Woods monetary system came to an end when the Nixon administration stopped exchanges of dollars for gold and floated the U.S. dollar on the international market. As noted in chapter three, this move was made necessary in part because the U.S. had been running a negative balance of trade during the Vietnam War, placing downward pressure on the value of the dollar. Foreign holders of dollars were increasingly converting their dollars to gold, and it seemed the U.S. might run short of gold reserves needed to satisfy all the demands for conversion. The year 1973 saw the first of two oil price shocks of that decade that sent the global economy into recession. The 1970s in the U.S. were characterized by stagflation, stagnation of the economy and unemployment combined with inflation. The Federal Reserve sharply increased interest rates in an effort to prop up the value of the dollar, a move that further increased unemployment and economic stagnation. The seeming invincibility of the U.S. economy was shaken.
pro-market atmosphere in order to defuse peasant unrest and, purportedly, lay the groundwork for industrial development through stimulating widespread demand and purchasing power (Araghi, 1995, p. 346). Large tracts of land were, however, excluded from redistribution with the idea that they would be used for large-scale, mechanized agriculture. Paradoxically, both concentration and redistribution of land occurred simultaneously.

During this period, national and international leaders envisaged a structural role for industrial agricultural production (promoted for primarily for domestic markets) in stimulating industrial development. Although under certain circumstances in particular countries, capitalized family farms producing surpluses resulted from the combination of state policies and land reform, in most cases, rural allotments ended up being subsistence-sized, especially after further subdivision in later years, meaning that most rural producers did not produce surpluses sufficient to underwrite industrialization. State policies also facilitated the replacement of subsistence regimes with commodity relations at the same time that small producers were increasingly exposed to international market competition. A new international division of labor in food production began to emerge. Combined with U.S. subsidies for domestic industrial agriculture and the use of food aid by the U.S. to reduce competition globally, these developments advanced the hegemonic position of the U.S. within the world-system (Araghi, 1995, pp. 347-349).

These changes also resulted in an internationalization of the American diet, a highly unsustainable development with regard to food system resiliency (Araghi, 1995, p. 349), and they powerfully enforced dependencies as food imports rose sharply in the Global South while possibilities for subsistence declined in rapidly urbanizing populations. According to Araghi (1995), “In the underdeveloped world as a whole the ration of food imports to food exports increased from 50 percent in 1955-1960 to 80 percent in 1975,” and “between 1960 and 1980

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36 On the issue of monocultures and lack of resiliency, see also Douthwaite, 2004.
both the rural population as a percentage of total population and the agricultural labor force as a percentage of total labor force declined in all regions of the Third World” (pp. 350-351).

Western Europe, Canada, and the U.S. were not immune to deruralization during this same era (Araghi, 1995, p. 351).37

As noted in chapter three, the declining ability of small producers to compete in a global market that began prior to 1973 (Araghi, 1995, p. 352) intensified as neoliberalism ushered in falling trade barriers and falling prices, which resulted in further massive deruralization on a global scale. From 1973 to 1990 (except in the case of Africa, which may be due to extremely low rates of economic growth), a higher proportion of urban population growth resulted from deruralization than in the period from 1945 to 1973 (Araghi, 1995, p. 357), demonstrating the negative effects of neoliberal policies on small producers. Depeasantization facilitated capital accumulation in urban centers (Araghi, 1995, p. 352) and refocused the attention of leaders in the Global South away from small holder production and toward industrialization as a means to increase wealth and power (Araghi, 1995, p. 354).

With U.S. hegemony on the decline after 1973, and with the assistance of political leaders worldwide (Araghi, 1995, p. 359), capital has been reorganizing itself on a global scale (Araghi, 1995, p. 355). Export-led development strategies pursued by debtor nations at the behest of international lenders contributed to dispossession of peasant producers in the Global South and to enforcing their dependency on the global economy for basic provisions (Araghi, 1995, p. 356). Through loan conditionalities that both exposed producers to increasing market pressures and undermined the sovereignty of debtor nations in the Global South, the IMF and the

37 See Araghi, 1995, p. 351 for rates of deruralization in a context of overall population growth for nations and regions worldwide. Although in Latin America, in absolute terms, the rural population grew, it declined substantially in relative terms as vast numbers of rural dwellers relocated to cities.
World Bank have made replicating the American experience virtually impossible. All the while, American material success has served as the dream and the promise of development.

**Conclusions on Industrial Agriculture as a Dependency Enforcing System**

Industrial agriculture reduces biodiversity on farms and economic diversity within communities, resulting in loss of resiliency in farms and the communities. Working in combination with post-war national and international policies, industrial agriculture has resulted in widespread dependence of urban masses on monocultural production and a globalized shipping industry that cannot be sustained. It has also been instrumental in removing people from the land as a source of subsistence and autonomy. Industrial agriculture in the post-war world-system fractures community life by systematically drawing down the economic and social vitality of farming communities and fostering the concentration of wealth and power in the hands of large-scale agribusiness entities. In its wake, industrial agriculture leaves heightened insecurity and isolation where there once existed reciprocity, community autonomy, and resiliency. Industrial agriculture is an important embodiment of the political hegemony of the leaders of the unsustainable, late capitalist paradigm. On a global scale, it reduces the resiliency of communities and nature in an era when resiliency is of critical importance to the survival of human populations and ecosystems. During the post-war period, national and international policies facilitated the rise of industrial agriculture and the demise of the small producer. These same policies played important roles in enforcing the perpetual dependence of nations in the Global South within the world-system. Reversing these trends will be a steep uphill battle.

In the following section, we will turn our attention to examples of how communities are creating more sustainable food systems. I will explore a phenomenon that Ploeg (2008) calls
repeasantization\textsuperscript{38}, and I will show how this phenomenon represents a set of strategies for engaging in the kind of creative destruction and transformation of the current food system that embraces the vision for sustainable food systems articulated above. I will argue that localized production and consumption of food is central to (re)inhabitation and community autonomy. I will demonstrate how building sustainable food systems can help to heal social ecology by mending the metabolic rift between humans and nature and by reducing enforced dependency within the world-system, thereby, mitigating against the global sustainability crisis.

\textit{Sustainable Food Systems as Resistance to Enforced Dependency}

The sustainable food movement proposes that there are limits to the production capacity of industrial food systems. These limits derive from the depletion of fossil-fuel-based inputs, damage to soils, and depletion of water sources. The sustainable food movement also recognizes that resilience in food production is threatened by monocultures of production, petrochemical dependence, ecosystemic damage, concentrated ownership of seeds, and reduction in locally adapted plant and animal varieties. But sustainable food is not only about production methods and ownership patterns – it is about community. Advocates of sustainable food recognize the food system’s potential to (re)connect people with each other and the land as a pillar supporting sustainable community (re)development.

Many prominent theorists and practitioners of sustainability emphasize the importance of economic (re)localization as a community sustainability strategy, and many agree that

\textsuperscript{38} In discussing the phenomenon that Ploeg (2008) calls \textit{repeasantization}, I will steer away from using his term except when directly referencing his work. As a label for social engagement in the sustainable food movement, I will instead use the term (re)\textit{localization} of food production and consumption, even though this term is somewhat more limited in the concepts and processes it represents. I have chosen not to emphasize \textit{repeasantization} because this term carries negative connotations in modern capitalist societies where progress is enshrined as a positive and defining feature of modern life. In such societies, processes of \textit{repeasantization} are likely to be construed as moving backward and could even be associated with feudalism. In such a cultural setting, \textit{repeasantization} is also likely to be associated with material and intellectual deprivation and the absence of desired levels of choice where lifestyles and living locations are concerned.
(re)localization in the basics such as food, water, and energy supplies is of particular importance (see for example Douthwaite, 2004). (Re)localization in the basics can create a foundation for (re)establishing systems of healthy interpersonal and human/nature reciprocity within a context of community governance. In the face of converging socio-ecological crises, (re)localization can serve as a recipe for resilience and survival in the face of widespread social upheaval and ecosystemic breakdown. The sustainable food movement emphasizes reducing the scale of food production compared to that of industrial agriculture and restoring the cycling of nutrients within local socio-ecology: movement toward healing metabolic rift.

I argued in chapter four that place-based, sustainable living can serve as an effective negation to unsustainable, late capitalist globalization. I argue here that (re)localization of food systems is about creating local self-sufficiency and self-determination and, thereby, simultaneously ending enforced dependency and restoring place-based forms of food praxis rooted in community and human/nature reciprocity. I propose that food system (re)localization can progressively reduce the momentum of the capitalist world-system of increasing integration and dependency while, at the same time, progressively increasing community resiliency in the face of the converging socio-ecological crises.

Although the neoclassical economic system sees food as just another commodity, food systems embody a deep and wide potential to serve as platforms for radical socio-ecological change, in part, because food permeates human life in ways that few other products do and because its production defines important and far-reaching aspects of the relationship between humans and nature. Food is essential for life, and control over food translates into a great deal of social power. Changing our food systems, therefore, implies extensive social changes, including changes in relative social power.
We begin our exploration of (re)localization of food systems as a community (re)building and sustainability strategy with a discussion of how intellectual and material factors in sustainable food systems can effectively combine as drivers for counterhegemonic praxis.

**Drivers for Sustainable Food Praxis**

As previously noted, I take a Gramscian approach to praxis, one that emphasizes that ideas emerge in and through history and one that also emphasizes the interweaving of ideas and practice in making sense of the world and acting to change it. Bell (2004) discusses the relationship between ideal and material factors in the economy of agriculture in a way that helps us situate Gramscian praxis within the agricultural realm:

> Material factors depend upon ideal factors and ideal factors depend upon material factors to attain their persistence. The economy of agriculture embodies cultural values like the virtue of competitive individualism as much as it undermines cultural values like the importance of communal ties. The cultivation of knowledge depends in part upon our sense of the material implications of that knowledge as much as it leads to the persistence of those material implications…. There is no first instance or second instance of either the material or the ideal. They are in endless conversation…. (p. 147)

And so, we might ask: what are the key intellectual and material drivers of sustainable food praxis?

I suggest that some agriculturalists and consumers are beginning to recognize the political and economic limits to the current trajectory of industrial agriculture and its structural roles in capitalist economies. Buttel (1980) summarizes the social contradictions inherent within the trajectory of industrial agriculture in the U.S. and situates these contradictions within the social contradictions of the globalized food system:

> Economic stagnation threatens to usher in a situation in which rising food prices can no longer be compensated for by rapid growth in disposable family income. Likewise, the fiscal crisis of the state makes it unlikely that it will take action to increase transfer payments to or reduce the taxes on the poor to meliorate discontent over food price inflation. At the same time, the ‘need’ to expand food exports in order to pay for burgeoning imports of petroleum can only exacerbate food (and overall) inflation and
thereby escalate the demands of the lower income classes…. The hegemony of prevailing trajectories of development in the agricultural sector … appears to be encountering political and ecological limits…. These limits or contradictions may allow certain groups to take steps to seek change in the structure of agriculture and rural society. However, these steps are *unlikely* to be taken by a state apparatus whose primary functions are rationalizing the accumulation process to the advantage of large-scale property owners, on the one hand, and regulating social conflict and discontent, on the other. Thus … most contemporary initiatives to effect change in rural society are not deriving from state policy, but rather are coming from *local efforts* on the part of persons whose needs are not met by the present food system and rural economy. (p. 55; emphasis in original)

Buttel (1980) clearly foresaw the implications of fossil fuel reliance in agriculture in an era of oil depletion paired with increasing U.S. imports of petroleum. He also foresaw both the economic stagnation that precipitated the recent global economic crisis as well as the need for grassroots, counterhegemonic praxis in the food realm as a means to revitalize agriculture and society.

While it is unlikely that a high proportion of ordinary Americans and a vast majority of people globally grasp the structural contradictions of industrial agriculture and globalization with the same depth as Buttel (1980), a growing number of people everywhere are coming to recognize that the current food system is not serving them well on one or more levels: economically, nutritionally, or politically. They are also recognizing that industrial agriculture is damaging the very socio-ecological systems on which it depends and that it is producing food that is toxic. This recognition derives from many sources: direct observation, media, personal interactions, and more. Recognition of being ill served by the current food system can, in turn, stimulate sustainable food praxis. The rapidly growing interest in farmers’ markets and organically produced food in the U.S. and Europe demonstrates a desire on the part of increasing numbers of producers and consumers to address the deficiencies of the industrial food system by increasing producer and consumer control and choice while also, in the case of farmers’ markets, increasing the vitality and resiliency of local economies.
According to Buttel (1980), living within the structure of global capitalism and faced with the momentum of the agricultural treadmill, “The petty commodity producer increasingly faces a more difficult choice, essentially whether to cast one’s lot with large-scale capital or with the working class” (p. 57). These producers are increasingly confronted with the fact that the current system is not meeting their needs, and they are recognizing the need to implement alternative agricultural strategies that could potentially do so (Buttel, 1980, p. 57). Their recognition of the social contradictions of industrial agriculture derives, therefore, primarily from material experience.

Buttel (1980) emphasizes a need for class based alliances as an important factor in counterhegemonic food praxis. He points to the radical potential of a class alliance “primarily between the working class, and petty bourgeois farmers and ‘independent’ business people,” noting that such an alliance “has occurred infrequently during the course of economic development in the U.S.” (Buttel, 1980, pp. 55-56). This sort of alliance is exactly what is occurring in my hometown of Durango, Colorado, where local business people, local small producers, and consumers are consciously organizing to promote the potential of food system (re)localization to contribute to community vitality and resiliency. Such consciously counterhegemonic praxis connects local food activism to an overarching movement toward (re)localization and (re)inhabitation that encompasses a broad spectrum of community activity and invigorates both the local economy and community potentia.

We see that both the ideal and the material, separately or in combination, can serve as launching points for counterhegemonic praxis that combines action in dialog with both reflection and the creation of social theory. Through praxis, agents both create the world and are created by
it in a never ending dialectic. Ploeg (2008) describes the process as it relates to local food producers, whom he collectively calls peasants:

The peasant condition is composed of a set of dialectical relations between the environment in which peasants have to operate and their actively constructed responses aimed at creating degrees of autonomy in order to deal with the patterns of dependency, deprivation and marginalization entailed in this environment. Responses and environment mutually define each other…. The responses shape the environment as much as the environment generates the responses…. Typical of the peasant condition, is that the responses unfold by means of constructing a resource base that allows for the co-production of man and nature. (p. 261)

Here, Ploeg (2008) articulates the basis for healing the metabolic rift identified by Marx and for moving toward sustainable living.

I concur with Buttel (1980) in arguing that addressing the problems of industrial agriculture requires deep social change and a fundamentally different political economy of food than the globalized, industrial system of today. Creating a new political economy of food will require widespread food-system-related counterhegemonic agency spurred by the recognition of industrial agriculture’s deficiencies. We now turn our attention to discussing specific characteristics of sustainable food praxis.

**Sustainable Food as Counterhegemonic Praxis**

If the hegemonic food system entails the breaking down of community and the atomizing personal relationships, counterhegemony in the food system would entail building community *potentia* through (re)building resilient social networks of cooperation and reciprocity as opposed to individualistic competition. Building community *potentia* would mean resisting enforced dependency and working to build alternative systems characterized by personal liberty and community sovereignty. In practice, the (re)construction of community *potentia* around localized, sustainable food systems and the healing of the metabolic rift between humans and nature represent parallel trajectories of community (re)development that are also mutually
reinforcing. To accomplish these complementary purposes, Buttel (1980) advocates structural changes including (re)localization within agricultural systems:

Significant structural changes (beginning along the lines of encouraging a small farm system, localism in the food system, and emergence of worker-controlled enterprises in rural areas) are required to redress the fundamental problems faced by rural people and communities. (p. 57)

Buttel’s (1980) emphasis on worker control parallels Ploeg’s (2008) emphasis on autonomy as a central feature of food system counterhegemony. Ploeg (1980) describes the defining features of “the peasant condition.” This condition is emblematic of the situation and praxis of people working to (re)localize food systems:

Central to the peasant condition … is the struggle for autonomy that takes place in a context characterized by dependency relations, marginalization and deprivation. It aims at and materializes as the creation and development of a self-controlled and self-managed resource base, which in turn allows for those forms of co-production of man and living nature that interact with the market, allow for survival and for further prospects and feed back into and strengthen the resource base, improve the process of co-production, enlarge autonomy and, thus, reduce dependency. Depending upon the particularities of the prevailing social-economic conjuncture, both survival and development of one’s own resource base might be strengthened through engagement in other non-agrarian activities. Finally, patterns of cooperation are present which regulate and strengthen these interrelations. (Ploeg, 2008, p. 23; emphasis in original)

Ploeg’s (2008) emphasis on reducing dependencies, fostering autonomy, and increasing cooperation point toward important practices of food system counterhegemony that will be discussed below, and his emphasis on sustainable co-production of humans and nature indicates that food system counterhegemony can heal metabolic rift.

In his study of Practical Farmers of Iowa (PFI), Bell (2004) points to the building of personal relationships and community networks within an atmosphere of cooperation as an important aspect of sustainable farming:

Sustainable agriculture is a different social practice of agriculture…. The relations of knowledge within PFI have a different feel to them, a different way of experiencing others and of experiencing one’s own self. And that different way is to recognize
difference and to encourage it as a source of learning, change, and vitality, rather than as
a threat to self and knowledge. That different way is the way of *dialogue*, rather than
monologue…. PFI framers seek … to create a *dialogic agriculture*, an agriculture that
engages others – men, women, family members, other farmers, university researchers,
government officials, and consumers alike – in a common conversation about what it
might look like. (Bell, 2004, pp. 17-18; emphasis in original)

According to Bell (2004), sustainable farming explicitly builds community *potentia* and
counteracts the distrust and competition among farmers typical of the industrial model. Similarly,
sustainably-oriented producers interviewed by Kneafsey, et al. (2008) emphasized cooperative
rather than competitive relationships among fellow sustainable farmers who seemed to respect
each others’ work and see it as a complementary part of the food system. Some even expressed
desire to avoid competition with their counterparts in other nearby locations (p. 87). These same
producers expressed ethical commitments to consumers to provide them with authentic, quality
food through honest means (p. 88), indicating the importance of trust and healthy community
relationships.

Sustainable food counterhegemony, therefore, explicitly rebuilds both ecosystem vitality
and integrity while also building community *potentia*, and it recognizes that the two are mutually
reinforcing. Bell (2004) notes how sustainable farmers involved in PFI share their challenges and
worries as well as their successful innovations and triumphs with one another in a way that is
atypical of conventional farming culture within which farmers mostly see each other as
competitors. Bell characterizes this sharing as “a commitment to dialogue, to the social
conditions that give to all the ability to speak and be answered.” It is a process of “encouraging
others to make creative contributions to the conversation of the moment, and to the larger
conversation of social life…” (p. 185). What Bell (2004) is describing is a collective,
sustainability-oriented praxis within which farmers share ideas and observations with each other
in order to catalyze movement toward sustainable food production. Pretty (2002), who has
witnessed the success of collective learning among farmers in Southeast Asia and elsewhere concludes that “social learning processes should become an important focus for all agricultural and natural-resource management programmes” (p. 167).

Some sustainable farmers, such as those studied by Bell (2004), recognize value in locally produced and rigorously tested scientific knowledge. According to Bell, in the sustainable agriculture movement, there ought to be room for both locally produced knowledge and scientific inquiry aimed at broader dissemination of findings. What matters most, in Bell’s view, is the difference in relationships: moving away from technology and knowledge transfer to relationships based on mutual respect and reciprocity that form foundations for a healthy community. For PFI farmers, experiments allowed them to test their own methods and move away from relying on the testimonials of agribusiness advertising (Bell, 2004, pp. 190-193).

It is important to note the nonhierarchical nature of social learning processes among sustainable producers. For these farmers, learning sustainable processes is not based on technology transfer from experts to practitioners but on social creation of knowledge that results in a diversity of approaches and solutions tailored to specific socio-ecological contexts (see Bell, 2004, p. 235). The nonhierarchical learning relationships among sustainable producers reduce potential for oppression deriving from unequal social power at the same time that they promote the agricultural diversity requisite to sustainable living. These participatory learning frameworks are also highly compatible servant leadership.

Sustainable food systems are also counterhegemonic in their multifunctional and holistic orientation. Multifunctional holism in sustainable agriculture entails maximizing the resilience of all system participants, both human and nonhuman, rather than sacrificing many for the benefit of a few and doing so at the expense of the long term viability of the system itself. According to
Ploeg (2008), multifunctionality is the use of “one and the same set of resources … to generate an expanding range of products and services, thus reducing the cost of production of each single product … and simultaneously augmenting the value added realized on the farm” (p. 151). Bell (2004) notes that raising livestock is one means to achieve multifunctionality by gaining fertilizer inputs, being able to make use of hay produced during crop rotations, and selling value added products like milk, cheese, and meat (p. 6). Multifunctionality also reflects the diversity present in healthy ecosystems, and it is compatible with a holistic ontology of place.

Sustainability-oriented multifunctionality can offer solutions to some specific problems that have resulted from industrial agricultural practices such as pesticide application. For example, Peter Kenmore and his colleagues in Southeast Asia found that pest damage to rice crops was proportional to the amount of pesticides used because the pesticides also destroyed natural enemies of insect pests (Pretty, 2007, p. 145). Pesticides also kill fish in rice paddies that can be another food source and a source of fertilizer (Pretty, 2007, p. 146). Therefore, pesticides often end up creating more problems than they solve. According to Pretty (2007), “Many countries are now reporting large reductions in pesticide use, and in no case has reduced pesticide use led to lower yields” (p. 145; see also Pretty, 2005, pp. 236-237). As noted above, since pests thrive in monocultures, a key to resistance is diversity (Pretty, 2007, p. 145).

Multifunctionality can increase the diversity necessary to inhibit pest infestations while also contributing to increased total food yields. Pretty (2002) offers examples of sustainability-oriented multifunctionality:

Many of the individual technologies [used in sustainable farming] are multifunctional, and their adoption results, simultaneously, in favourable changes in several aspects of farm systems. For example, hedgerows encourage wildlife and predators and act as windbreaks, thereby reducing soil erosion. Legumes in rotations fix nitrogen and also act as a break crop to prevent carry-over of pests and diseases. Clovers in pastures reduce fertilizer bills and lift sward digestibility for cattle. Grass contour strips slow surface run-
off of water, encourage percolation to groundwater, and are a source of fodder for livestock. Catch crops prevent soil erosion and leaching during critical periods, and can also be ploughed in as green manure. Green manures not only provide a readily available source of nutrients for the growing crop, but also increase soil organic matter and hence water retentive capacity, further reducing susceptibility to erosion. Low-lying grasslands that are managed as water meadows, and that provide habitats for wildlife, also provide an early-season yield of grass for lambs. (pp. 113-114)

Multifunctional holism in farming directly confronts conventional farming’s linearity and narrow focus on large-scale production of commodities.39

According to Ploeg (2008), in contradistinction to conventional agriculture, peasant agriculture is

built upon the sustained use of ecological capital and oriented towards defending and improving peasant livelihoods. Multifunctionality is often a major feature. Labour is basically provided by the family (or mobilized within the rural community through relations of reciprocity), and land and the other major means of production are family owned. Production is oriented towards the market as well as towards the reproduction of the farm unit and family. (p. 1; see also pp. 65-67)

Ploeg (2008) also notes that, when market conditions deteriorate, peasant production is oriented almost exclusively toward providing for the community and securing the means to continue to produce in the future.

Peasants work to distance their agricultural practices from markets, particularly regarding inputs, so as to increase their autonomy and resiliency (Ploeg, 2008, p. 1, 49, 66). Distancing is also accomplished through social traditions or arrangements of reciprocity, pooling of machinery among farmers, saving rather than buying seed from year to year, “regrounding agriculture on available ecological capital,” emphasizing the use of craft- and skill-based technologies rather than capital intensive technologies, internalization of as many aspects and phases as possible of

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39 Typical statistical measurements in agriculture point to conventional farming’s linearity and narrow focus. According to Norberg-Hodge, Merrifield, and Gorelick (2002), agricultural statistics have always been problematic due to the way in which measurements are taken. Usually, such statistics report comparative yields for a single commodity, not total output per land unit (p. 76). Furthermore, these statistics do not account for social and environmental losses (Pretty, 2002, p. 108).
the production process, focusing on maintaining system health and productivity over the long
haul and with regard to particular animals and plants, orienting production toward internal
standards of use value rather than externally determined standards of exchange value, and
“intergenerational transfer of farm units” (Ploeg, 2008, pp. 50, 62, 114-117). This distancing is,
therefore, counterhegemonic in both its localized focus and its potential to combat enforced
dependency. Distancing agriculture from the hegemonic forces of agribusiness not only increases
farmer autonomy, it also means that labor becomes an important part of the agricultural process
once again (Ploeg, 2008, p. 156). Therefore, (re)localization of the food system creates openings
for revitalization of rural economies (Jacobs, 1969; Ploeg, 2008, p. 157) and rebuilding of
community potential (Lyson, 2004, p. 1). Strategies for distancing production from global
markets amount to a forms of counterhegemonic resistance that allow sustainable producers to
escape the clutches of the hegemonic agribusiness sector while also constructing viable
alternatives to it.

Lyson (2004) calls food system (re)localization civic agriculture, a term which highlights
the community building aspects of its counterhegemonic processes and strategies. According to
Lyson (2004),

civic agriculture is the embedding of local agricultural and food production in the
community. Civic agriculture is not only a source of family income for the farmer and
food processor; civic agricultural enterprises contribute to the health and vitality of
communities in a variety of social, economic, political, and cultural ways…. Taken
together, the enterprises that make up and support civic agriculture can be seen as part of
a community’s problem-solving capacity…. Civic agriculture … is a locally organized
system of agriculture and food production characterized by networks of producers who
are bound together by place. Civic agriculture embodies a commitment to developing and
strengthening an economically, environmentally, and socially sustainable system of
agriculture and food production that relies on local resources and serves local markets
and consumers. The imperative to earn a profit is filtered through a set of cooperative and
mutually supporting social relations. Community problem solving rather than individual
competition is the foundation of civic agriculture. (pp. 62-64; emphasis in original)
Lyson (2004) is advocating actualization of community *potentia* through praxis and increased autonomy.

Buttel (1980) advocates similar strategies to those articulated by Ploeg (2008) for small farmers in the U.S. to attain increased levels of independence and economic and social resiliency in the face of ever expanding agribusiness and food processing entities that enforce dependency:

Decentralization of the food system would allow both farmers and consumers to benefit via circumventing the increasingly pervasive food marketing industries, as well as facilitate environmental benefits from the increased crop diversity required in a more regionally self-sufficient agriculture.…. Worker-controlled enterprises appear to be pivotal in establishing a higher degree of local self-sufficiency since community-controlled firms are more likely to orient their activities toward the utilization of local resources to meet local needs (pp. 55-56).

Buttel’s arguments here prefigure the recent rapid growth in community supported agriculture and in the slow food, locavore, and farmers’ market movements in the U.S.

If (re)localized, sustainable agriculture is to realize its counterhegemonic potential to combat enforced dependency, sustainable farmers cannot rely upon genetically modified seeds and organisms as farm inputs because such reliance creates dependencies on transnational corporations. Furthermore, GMO seeds, when cultivated in the open environment have proven to be a source of presumably unintentional and widespread pollution of plant gene pools by transgenic genes. Many believe agribusiness entities engaged in production of transgenic seeds actually see such pollution as a strategy for gaining further control over agricultural seed markets by linking seed ownership to patented genes and, thereby, claiming patent infringement by those whose seed supplies become contaminated with transgenic genes (Norberg-Hodge et al., 2002, pp. 48-50; see also Garcia, 2004). The contamination of gene pools of traditional varieties of plants by GMOs is an irreversible ecological act with far-reaching potential consequences (ICFFA, 2008, p. 30). When engaging in counterhegemonic sustainability praxis, farmers must
rely on technologies they can manage and apply independently. These technologies should be adaptable to diverse places and should not pose unknown risks to the future of locally adapted plants and animals.

Organic production also is not enough to define counterhegemony in agriculture (Bell, 2004, pp. 245-246). Large-scale organic farms can out compete local producers by taking advantage of disproportionate subsidies available to large producers. Furthermore, when organic production occurs on large, distant farms, communities lose many of the economic multiplier effects of food money spent locally. In such cases, the agricultural system is still characterized by enforced dependency. Wealth is extracted from purchasers in local communities, reducing local economic vitality and creating relationships of dependency by community members upon distant food providers whose activity inhibits local economic vibrancy and self-determination. Large-scale organic farms also use nearly as much energy as do conventional industrial farms, meaning that they do not reduce fossil fuel dependency as effectively as can localized production for localized consumption (Norberg-Hodge et al., 2002, pp. 44-45). Furthermore, large-scale organic farms cannot address issues of nutrient cycling the way that localized operations can. They, therefore, perpetuate metabolic rift.

Counterhegemonic praxis in local food is increasingly widespread. Ploeg (2008) notes that there are 1.2 billion peasants worldwide, a figure that includes European small farms (p. xiv). The presence of counterhegemonic local food praxis in industrialized countries points to the growing disaffection for the globalized food system among both producers and consumers in the industrialized world. According to Ploeg (2008), some 80 percent of European farmers are engaged in some form of repeasantization (p. 157). Ploeg (2008) elaborates: “Over the last decade and a half, Europe has witnessed a widespread process of repeasantization. This process
mainly expresses itself qualitatively. It involves enlarging autonomy and widening a resource base much narrowed by previous processes of specialization that followed the script of entrepreneurship” (p. 151).

Local food counterhegemony is also increasing from the demand side of the food system. According to the Institute for Grocery Distribution, as of 2005, 70% of British consumers wanted to buy local food, and 49% wanted to buy more local food than they were doing. In a space of less than ten years, farmers’ markets had also increased from one to 550 in the United Kingdom, and several hundred organic vegetable box schemes were also in operation. Food sales through independent stores, box schemes, and farmers’markets increased 32 percent in the UK between 2004 and 2005 (Kneafsey, et al., 2008, p. 2). In the United States, the number of farmers’ markets had dwindled to fewer than 100 in the 1970s. In 2003, the U.S. Department of Agriculture counted over 3,000 (Lyson, 2004, pp. 91-92).

Many small producers who sell farm and garden products locally are, in effect, working toward replacing conventional industrial agriculture with a sustainable food system that (re)integrates humans with their environment while also increasing community potential. In terms of volume of food produced, localized production demonstrates some striking successes, including in urban areas. In 1996, 80 percent of the poultry and 25 percent of the vegetables consumed in Singapore were provided from that city’s urban agriculture (Pfeiffer, 2006, p. 71). According to Murphy (1999), in 1999, there were “over 1,000 gardens in New York City and over 30,000 gardens in Berlin… In densely populated Hong Kong, 45 per cent of local vegetable needs [were being] met through intensive cultivation on only six per cent of the land area (p. 1). We will also discuss below the relocalization of the Cuban food system since the collapse of the Soviet Union.
Food system counterhegemony is not necessarily a stated philosophy but a set of practical efforts that can result in emergent worldviews characterized by place-centered ethical systems and by sustainable economies of place. Recent counterhegemonic efforts within the food system demonstrate that reducing dependency on the global economy can be accomplished through strengthening the resource base and through producing the means of survival outside of the market economy (Ploeg, 2008, p. 31). Ploeg (2008) summarizes the counterhegemonic approach and promise of food system (re)localization:

This new form of resistance … basically searches for, and constructs, local solutions to global problems. Blueprints are avoided. This results in a rich repertoire – the heterogeneity of many responses thus becoming one of the propelling forces that induces new learning processes. Resistance becomes a form of production embodying a radical break from neoliberal globalization. Repeasantization is a form of radical agency of uncaptured people. (pp. 271-272; p. 274)

In its embodiment of both critique and the construction of viable alternatives, food system counterhegemony represents a form of absolute negation (see McLaren & Kumar, 2009) of globalized industrial agriculture and the food processing system that creates opportunities for sustainability education as counterhegemonic praxis within higher education. Entire colleges and universities, academic programs, and individual educators who support counterhegemonically informed food system praxis can make important contributions to higher education’s potential to serve communities and to help students enrich their lives.

We now turn out attention to Cuba as an example of widespread counterhegemonic food system praxis. We will explore how the Cuban government played a role in the transformation of that nation’s food system from one of dependency upon agribusiness and integration with the global economy to one focused on sustainable, localized production for localized consumption. This exploration will illuminate particular problems faced by those who seek a transition toward
sustainable food systems within capitalist economies and point to strategies that can and cannot be borrowed from the Cuban experience.

**The Cuban Response to Soviet Collapse: Food System Relocalization with Government Support**

As noted above, according to Buttel (1980), due to the capitalist state’s roles in facilitating the accumulation of capital on the one hand and managing discontent on the other, change toward sustainable food systems is unlikely to be state-led. Since the capitalist state tends to support capital accumulation within the national (and now global) economy, state-level policy support for decentralization of agricultural production and consumption is generally not forthcoming. Therefore, in the U.S. and other industrial capitalist countries, as in many parts of the world, in order to change the food system, we need local efforts on the part of people not well served by the current political economy (Buttel, 1980, p. 55). These efforts embody counterhegemonic resistance.

The Cuban experience, on the other hand, is an example of food system relocalization with government support. This support was possible in Cuba because of the revolutionary character of its government. Since the revolutionary victory 1959, the Cuban state has been about much more than promoting capital accumulation. It has redistributed wealth to a large extent and focused much attention on improving the wellbeing of the average Cuban citizen. In its response to the collapse the Soviet Union and the food shortages that ensued from that collapse, Cuba sought to preserve the revolutionary character of its government. Therefore, the government strongly supported the food system relocalization that occurred during the Special Period. In more capitalist-oriented nations, it is more likely that a transition toward sustainable agriculture will be supported, at best, belatedly by national governments.
During the Special Period, which began with the 1991 collapse of the Soviet Union (a major supporter of the Cuban economy and the major source of its oil imports) Cuba converted from a high-input, fossil-fuel-based agriculture system to one emphasizing diverse and dispersed production and localized self-reliance. The crisis of the Special Period was both intense and abrupt. Practically overnight, Cuba lost 85% of its international trade; 80% of its fertilizer, pesticides, and animal feed imports; and half of its food imports. By 1994, food production stood at 55% of its 1990 levels, and per capita caloric intake had dropped by 36%. Through maintenance of a government safety net in the form of food rationing and food programs targeted at highly vulnerable populations, the worst potential effects of the crisis were averted (Pfeiffer, 2006, pp. 56-57). The U.S. intensified the crisis with the passage of the Toricelli Bill in 1992. This law tightened the U.S.’s economic blockade of Cuba by banning “foreign subsidiaries of U.S. companies from trading with Cuba. Seventy percent of this trade had been in food and medicines” (Murphy, 1999, p. 9).

The Cuban response was shaped, not only by government response to the immediate crisis, but by the trajectory of Cuban land reform that had occurred in the years since the revolution. Murphy (1999) describes the concentration of land ownership in foreign hands in Cuba prior to the revolution: “By 1959, corporations and U.S. citizens owned 75 percent of arable land in Cuba” (p. 7). Following the revolutionary victory of 1959, land was redistributed to squatters, sharecroppers, and landless farmers. Fifty percent of the land in Cuba was nationalized, and more than 100,000 landless peasants became landowners overnight. A second agrarian reform in 1960 further limited landholdings and most expropriated land was converted into state farms. (Murphy, 1999, p. 7)

These reforms redistributed land and wealth in a nation where 8% of the farmers had controlled 70% of the farmland (Pfeiffer, 2006, pp. 54-55). Cuban land reforms increased the number and
the distribution of farmers and, therefore, diffused agricultural knowledge. This diffusion proved to be an important asset during the Special Period.

Prior to the Special Period, Cuba was in a typical position for a nation in the Global South with regard to agriculture. Cuba’s agriculture was heavily concentrated on commodity production of sugar, tobacco, and citrus, and the nation imported 60% of staples consumed by its citizens (Pfeiffer, 2006, p. 56). Murphy (1999) notes that, Cuba’s participation in the global economy of industrial agriculture meant that “Cuba was not able to produce enough food to meet the needs of its people. In the 1980s, 57% of the calories consumed by the Cuban people were still imported…. The diversification of agriculture that the revolution had intended was frustrated by the continued dependence on sugar as a source of foreign exchange…. Cuba initiated the National Food Program in the 1980s…. as a result of increasing levels of critique of industrialized agriculture in Cuba. Especially around Havana, this program moved land from sugar production to production of vegetables in an effort to increase self-reliance (Murphy, 1999, pp. 7-8). The National Food Program also laid important groundwork for the agricultural programs undertaken during the Special Period.

During the Special Period, according to Murphy (1999), Cuba responded to the crisis with a national call to increase food production by restructuring agriculture. This transformation was based on a conversion from a conventional, large scale, high input … agricultural system to a smaller scale, organic and semi-organic farming system. It focused on utilizing local low cost and environmentally safe inputs, and relocating production closer to consumers in order to cut down on transportation costs. (p. ii)

These changes were stimulated, in large measure, by a need to reduce reliance on machinery and petrochemical inputs for agricultural production due to radically reduced availability of fuel, tractor parts, and chemicals formerly made available by the Soviet Union (*Power of Community*, 2006).
In 1993, the Cuban government engaged in another land reform through which large state farms were converted to private cooperatives called Basic Units of Cooperative Production that were owned and run by the farm workers themselves. Through this program, 41.2% of the nation’s arable land was converted into 2,007 new cooperatives with 122,000 total members. The government retained ownership of cooperative lands, but members were granted free leases for growing food. The government then contracted with the coops for specific crops and amounts to be grown, and it sold to the coops some of the necessary inputs (Pfieffer, 2006, pp. 58-60; Murphy, 1999, p. 10). The policy focus on increasing localized food production also extended to private lands. According to Murphy (1999), “Even privately owned land in … [Havana], if not in use, was turned over to those who wished to cultivate it…. If the owners objected, they would be allowed six months to put the land into production themselves. If the owners never cultivated the lot, use rights would then go to the soliciting gardener” (p. 13). The Special Period also saw the initiation of private farming. The government turned over close to 170,000 acres of land to private farmers who now farm rent free on government owned land (Pfieffer, 2006, p. 60). One of the biggest challenges to realizing sustainable food systems and, thereby, ending enforced dependency is providing small producers with widespread access to land. According to Murphy (1999), “Land access poses the largest constraint to producers around the world” (p. 4). In this respect, the Cuban model of land reform before and during the Special Period is particularly important.

During the Special Period, urban agriculture was a spontaneous and successful response to the food shortages in Cuba. According to Murphy (1999),

By 1994 a spontaneous decentralized movement of urban residents joined a planned government strategy to create over 8,000 city farms in Havana alone…. In 1998 an estimated 541,000 tons of food were produced in Havana for local consumption…. Some neighborhoods are producing as much as 30 percent of their own subsistence needs. (p. ii)
“Food production was rapidly decentralized and options for direct marketing were increased” (Murphy, 1999, p. 10). Urban agriculture was also soon backed by government policies:

The Ministry of Agriculture … created the world’s first coordinated urban agriculture program that integrated: 1) access to land, 2) extension services, 3) research, and development, 4) new supply stores for small farmers, and 5) organized points of sale for growers and new marketing schemes, all with a focus on urban needs. (Murphy, 1999, pp. 11-12)

Now, over half the produce consumed in Havana comes from the city’s urban gardens, and nationally, urban gardens produce 60 percent of the produce consumed. Significant amounts of produce from urban gardens is also donated to schools, clinics, and senior centers, and laws require urban gardens to use only organic methods (Murphy, 1999, pp. ii, 29; Pfeiffer, 2006, pp. 60-61).

The roles of the government’s agricultural extension agents in Cuba were also modified during the Special Period. Rather than focusing solely on information transfer from agricultural research stations and universities to producers, extension agents also focus on increasing community-based social learning processes. Extension agents in Cuba are based in communities long term. They assist producers with advice, inform them about workshops, and help them acquire inputs. These agents work closely with seed houses that “sell garden inputs, including seeds and tools, locally produced biological control products, biofertilizers, packaged compost, [and] worm humus.” They also work with state research centers (Murphy, 1999, pp. 29-31).

Before the Special Period, Cuban scientists had already developed many organic methods of farming. During the crisis, the government embraced and supported these methods through a variety of programs (Pfeiffer, 2006, p. 58). Cuba strongly supported biological control of pests. According to Pretty (2005),
Key components of the strategy were the Centres for the Production of Entomophages and Entomopathogens (DREEs), where the artisanal production of biocontrol agents takes place. By 1994, 222 DREEs had been built throughout Cuba and were providing services to cooperatives and individual farmers. (p. 79)

Cuban farmers and gardeners also used intercropping, manuring, biopesticides, biofertilizers such as worm compost, pest and disease resistant plant varieties, crop rotations, cover cropping for weed suppression, green manures, integration of grazing animals for nutrient cycling and meat production, and animal-based traction for tilling fields (Pfeiffer, 2006, p. 58). To increase organic urban fruit production, the Cuban government promoted planting and care of fruit producing trees in Havana through a program called Mi Programa Verde (Murphy, 1999, p. 39).

The success of Cuba’s rapid food system relocalization has been remarkable. In Havana, “there are now more than 7000 urban gardens, and productivity has increased from 1.5 kilogrammes per square metre to nearly 20 kilogrammes per square metre” (Pretty, 2002, p. 74). Furthermore, “sustainable agriculture is encouraged in rural areas, where the impact of the new policy has already been remarkable” (Pretty, 2002, p. 74). Although animal protein production remains similar to the low 1994 levels in Cuba (Pfeiffer, 2006, p. 63), since 1995, average caloric intake per person has increased 33 percent from 1994 levels (Pfeiffer, 2006, p. 57). The transition away from industrial animal production toward a distributed production system has encountered obstacles such as lack of suitable animal feed, waste disposal, and lack of refrigeration at local markets (Pfeiffer, 2006, p. 63). Still, Cuba has shown that, with a change in diet, grassroots, organic agriculture can feed the people in a modern nation (Pfeiffer, 2006, pp. 57-58).

The Cuban example calls upon us to envision counterhegemonic food system activity as an important urban as well as rural response to fossil fuel depletion, climate change, and the negative socio-ecological impacts of the conventional farming system. Urban Cubans, like many
residents of cities worldwide, had been enculturated with the notion that engaging in food production is backward and associated with disadvantaged and enslaved cultures and groups. According to Murphy (1999), “Urban farming and gardening often offends the ‘modernist’ ideal of a cosmopolitan city” (p. 3), and “there is also a cultural urban bias that leads people to reject agricultural work and to associate it with poverty, underdevelopment and slavery” (p. 43).

Furthermore,

In Cuba, as in many underdeveloped countries, gardening was never seen as a form of leisure…. Urban gardening was popularly associated with poverty and underdevelopment. [Prior to the Special Period,] Havana even had city laws prohibiting the cultivation of agricultural crops in the front yards of city homes. (Murphy, 1999, p. 12)

Since the onset of the Special Period in Cuba, the importance of urban food production in a sustainable food system has become clear.

Cuba’s response to the Special Period offers us an example of successful intervention by a national government in support of building a sustainable food system, but Cuba’s situation is somewhat unique within the world-system. It is literally an island of socialism within a largely capitalist world order. Those of us who live in capitalist-oriented nations can learn a great deal from the Cuban example in terms of community and agricultural processes that work well in stimulating localized, sustainable food systems, but as Buttel (1980) notes, we would do best not to rely upon change initiated from above through the channels of national or international policy. In order to create sustainable food systems that respond to oil depletion, climate change, and global socio-ecological damage resulting from the conventional agricultural system, we must initiate change from below as a counterhegemonic response and an absolute negation of the unsustainable global food system.
In order to provide a broader set of examples of sustainable food system praxis relevant to the context in the U.S. and to educational praxis in U.S. colleges and universities, we now turn out attention to food system (re)localization efforts in other parts of the world.

(Re)localization of Food Systems in Other Parts of the World

In order to emphasize that the sustainable food movement is both extensive and global in nature, we now turn our attention to examples of sustainable food praxis taking place in many parts of the world. We will begin our discussion with Europe. In examining examples of European sustainable food praxis, it is important to note that these examples are taking place within nations that had conquered large areas of the globe during the period of Western European colonization. Although the U.S. is the central state-level force in today’s global capitalist economy, European nations, too, have historically resided at the center of empires, and they remain among the world powers today. The European sustainable food movement presents a counterexample to Cuban governmental support of sustainable food systems because national government support for localized, sustainable food production has not been forthcoming there. Ploeg (2008) notes that repeasantization runs against the political grain in Europe and that, therefore, it is characterized, not as a counterhegemonic movement, but as an addition to current methods of conventional farming:

The paradigm shift entailed in the process of European repeasantization has never been clearly articulated at institutional levels. This is because it runs counter to too many institutional interests associated with previous modernization processes. Admitting that such a far-reaching shift is occurring would imply that vested positions, scripts and routines need reconsidering…. Hence, shifts … resulting in multifunctionality are represented as something additional to farming, while the agricultural sector as a whole is conceptualized in terms of co-existence, meaning by this that alongside ‘productive farming’ there are other ‘rural development’ types of farming…. But earnings from ‘old’ and ‘new’ activities cannot be separated in order to compare them; it is their unity that matters. (p. 155)
But European repeasantization, according to Ploeg (2008) does represent counterhegemony in that its processes are oriented toward increasing individual and community autonomy and decreasing dependence on the agribusiness and global food processing sectors. Repeasantization in Europe is characterized by diversification of outputs, on-farm processing of food products, shortening distribution lines to consumers, cutting out middlemen in distribution, increasing emphasis on craftsmanship and artisanship, shifting away from purchased inputs so that production is increasingly based on resources outside the control of agribusiness, a concomitant shift away from reliance on financial and industrial capital, and increased autonomy that “materializes in reconstitution of the resource base of the farm.” European farmers engaged in sustainable food praxis are engaging in a “regrounding of agriculture upon nature” (Ploeg, 2008, pp. 153-156; emphasis in original), a healing of the metabolic rift between humans and nature that is a central process of sustainable inhabitation. European sustainable food praxis provides an important example for the U.S., not only due to food policy similarities with the U.S., but because of similarities in culture and levels of industrialization.

Sustainable food praxis is occurring in Latin America as well, and it is producing some striking successes. In southern regions of Brazil, per capita economic output is higher than the average for the nation. The area is populated by small farms whose owners have increasingly adopted conservation tillage and no till methods of farming. They have also diversified their crops and gardens; incorporated animals such as pigs, chickens, dairy and beef cattle, and fish in ways that promote the ecological health of their farms; and used green manure and cover cropping that is resulting in reduced problems with pests and soil erosion.

Perhaps the most important development here, however, is social. Brazilian farmers have formed associations to work and learn together and have increased their direct connections with
their consumers (Pretty, 2007, pp. 116-119). Their sustainable food praxis is yielding, not only local food for local consumption, but the community autonomy and *potentia* necessary for continuing and deepening the process of sustainable food praxis itself. The Lovera family of sustainable farmers in Brazil claims that “the biggest change over six years since conversion [to more sustainable practices] has been to their self-esteem – instead of being controlled by the agro-industries, they can choose what to raise and grow, when and how to market, and are fully linked to the internet and the outside world” (Pretty, 2007, p. 119). Pretty (2007) notes the importance of community support networks to sustainable food praxis:

> Working together is critical when large changes in our lives are to be made. Having a friend or neighbor to share the experience, to provide moral support, to succeed and to fail as you do, is an essential prerequisite for most landscape transformations. The fear of failure is enormous. It keeps people awake at night, it gnaws and worries at the edge of consciousness. Crossing the mental frontier is not easy, and most of us need some help, even if the local associations do not last forever. (p. 117)

Pretty concludes that “cooperation was … fundamental to all agricultural and resource management systems throughout our early [human] history” (Pretty, 2007, p. 120). We can presume that cooperation is important to these systems today.

In India, Navdanya, a nongovernmental organization and network of seed savers and organic producers (Navdanya, 2009), focuses on provision of basic human needs from local resources: “food for the soil and her millions of microorganisms … food and nutrition for the farming family … food for local communities … and [only] unique products [such as spices] for long-distance trade and export” (Shiva, 2008, pp. 127-128). Navdanya has helped to set up 54 community seed banks throughout India where farmers share and save seeds. The organization is also “actively involved in the rejuvenation of indigenous knowledge and culture,” and it has generated awareness of the hazards of genetically engineered seeds (Navdanya, 2009).
Navdanya’s efforts represent sustainable food praxis in that they promote individual and community autonomy, the building of community *potentia*, and socio-ecological sustainability.

The people living on the land of the former Dravidian kingdoms, some of the driest lands outside of formal deserts in India, are also among the successful practitioners of sustainable food praxis in that country. In their region, land that had been historically farmed had been abandoned and invaded by Prosopis, a thorny tree. John Devavaram, Erskine Arunothayam, and Nirmal Raja spearheaded a new organization called the Society for Peoples Education and Change (SPEECH) through which they sought to “encourage rural people to increase their literacy by learning about their own places and what they can do to change them” (Pretty, 2007, pp. 126-129). SPEECH organizers called *animators*, “trained in participatory learning methods, conflict resolution, songwriting and storytelling”, catalyze change in the villages by visiting every home to raise awareness of common community problems and the need for organizing and participation to address these problems. As the people begin to work together, they form village committees to work on issues of their own choosing. Once the people begin to cooperate and develop trust among the group, they can begin to address problems of the land. Over a period of years, as trust and cooperation have grown, fields and rice paddies have been returned to productivity through the clearing of invasives, water harvesting, and the digging of wells for irrigation. Communities have also addressed numerous other issues in the areas of sanitation, education, and community economy (Pretty, 2007, pp. 126-131). Pretty concludes that “it is clear that new configurations of social and human relationships were a prerequisite for land improvements. Without such changes in thinking, and the appropriate trust in others to act differently too, there is little hope for long-term sustainability” (Pretty, 2007, p. 129). In this case, as in many others, sustainable food praxis includes and requires the building of community
potentia (Ploeg, 2008, p. 34). While value added is continually decreased in industrial, entrepreneurial farming, it is increased with “peasant driven rural development” at both the level of the farm and the level of the small farm sector (Ploeg, 2008, p. 156).

Organizing among farmers and engagement with sustainable farming practices has also occurred in Thailand where over 100,000 farmers are organized into networks. This transformation was a direct response to the utter failure of the industrial model of agriculture in that country in the 1990s as a result of the Asian economic crisis. This crisis left farmers with unpayable debts incurred in the purchasing of inputs at the same time that money from off-farm work of family members also dried up. As a result of this economic crash, farmers began to think differently. They have diversified their former monocultures, reduced or ended their use of inorganic fertilizers and pesticides, engaged in agroforestry, and focused their efforts on developing polycultures of intense production. Farmers continue to actively recruit new participants in their networks and to develop new farmer’s cooperative groups called “local wisdom networks.” The average farm size is less than two hectares (Pretty, 2007, pp. 120-121).

There are also international organizations and linkages that facilitate the forming of critical self and social consciousness and situate localized efforts within a global counterhegemonic struggle. One such organization is La Vía Campesina, an organization fostering international dialog among people who make their living from the land outside the realm of industrial agriculture.

By ‘building unity within diversity,’ the movement creates political spaces in which men, women, and youth from the Global North and South consolidate a shared identity as ‘people of the land,’ develop collective analyses, and struggle against the violence and disempowerment they experience daily as the dominant model’s processes of accumulation are unleashed in the countryside everywhere. (Desmarais, 2009, p. 25)
La Vía Campesina and similar organizations can serve as venues for sharing ideas and worldviews among sustainable food practitioners, thereby catalyzing praxis in important ways.

Examples of sustainable food praxis included here demonstrate its adaptability to diverse cultures and ecologies. Though these examples embody certain themes related to individual and community autonomy and community potentia, the politics and ecologies in which they are embedded vary widely. Taken as a group, these examples and the example of Cuba’s response to the crisis of the Special Period support the claim that sustainable food praxis is possible with or without government support, in widely diverse geographies, among people of diverse cultural heritage, and in socialist- or capitalist-oriented economies. The counterhegemonic thrust of sustainable food praxis, however, goes against the global capitalist grain in that it seeks to distribute wealth and control within the food system rather than to foster capital accumulation and monopolies within global markets. Still, citizens of capitalist-oriented nations can begin the process of building sustainable food systems within the capitalist order.

We now turn our attention to sustainable food praxis in the United States, arguably foremost among nations in its policy support for globalized capitalism and industrial agriculture.

*Food System Counterhegemony in the U.S.*

Sustainable food praxis as a viable means to resist enforced dependency is also taking hold in the U.S., the central generating point for of the Green Revolution that brought mechanized, chemical agriculture to the world. Bell (2004) recently studied the Practical Farmers of Iowa or PFI, a group of sustainably-oriented farmers. These farmers experiment with and practice many of the field techniques of sustainable farming practiced in other parts of the world. As noted above, they also conduct agricultural research, both independently and at times in collaboration with university researchers. The general orientation of PFI member farmers is
toward smaller scale, diverse, multifunctional practices that minimize or eliminate the need for off-farm (particularly chemical) inputs and that maximize total food yields and improve the socio-ecology of the farm, the community, and surrounding nature. PFI farmers also work to establish direct relationships with consumers (Bell, 2004, p. 205), a counterhegemonic market activity that minimizes or eliminates the control of the food processing industry over their farms and farm practices. What is most important, however, to understanding PFI farmers within a context of counterhegemony is to comprehend the social forces that seem to promote or impede U.S. farmers from turning toward sustainable practices. This exploration can help us to identify challenges to and opportunities for increasing sustainable food counterhegemony in the U.S.

Bell (2004) argues that the social construction of farming and identity in the U.S. make changing course toward sustainable agriculture especially difficult.

I argue that the reasons why most farmers … don’t change to sustainable agriculture lie in matters of knowledge and its relationship to identity…. Farming requires the acquisition of a vast array of tricks of the trade – some ticks you buy … some tricks you learn … and some tricks you both buy and learn…. Once acquired, you can’t take the time to continually question the stock of tricks you have at hand…. What you know is who you are…. Farmers are types of farmers … because of what they know, therefore do, and therefore identify with…. Knowledge has a history, a social history, and we connect ourselves to that social history…. Knowledge is a social relation…. And with identification with knowledge comes a sense of trust in it and those we received the knowledge from…. To give up a field of knowing and relating, is to give up both a field of self and its social affiliations and a field of trust in the secure workings of the world. (pp. 14-15)

Once the soil has been damaged by years of monocultural production and once a farmer has invested borrowed money and cultivated his/her identity as an expert conventional farmer whose practices adhere to the advancements in modern science and technology, there is a great deal at stake in changing course toward sustainable food production. Changing course is not only a question of adopting techniques that promote ecological sustainability, but a matter of deep personal and social change. Ploeg (2008) makes a related point when he notes that “expressions
of re peasantization are experienced as ‘betrayals’ [among conventional, entrepreneurial farmers], as forms of inappropriate behavior, and as blocking the free flow of resources badly needed for further expansion of entrepreneurial farming” (p. 155).

Bell (2004) emphasizes that the process of making a change from conventional to sustainable farming often represents a phenomenological break in one’s worldview and perception of self:

I think it significant that more than half the farmers we were able to speak to in detail about how they came to sustainable agriculture reported a similar experience: a sudden, disorienting change, in most cases during a period of severe economic stress, in which they had to rethink not only their farming practices but their practices of self. (p. 154)40

Bell concludes that “the change to identification with sustainable agriculture is commonly experienced as an intense, rapid, holistic crossing over. So much is at stake. A self. A farm. A way of knowing and doing them both” (Bell, 2004, p. 158; see also p. 236). According to Bell (2004), for some farmers, this break includes an element of resistance to manipulative hegemonic powers within industrial agriculture. He notes that some farmers speak of a new faith in sustainable agriculture that is rooted in conscience and a kind of truth free of power manipulations (Bell, 2004, p. 158). Similarly, in their study of sustainable producers in the United Kingdom and Italy, Kneafsey, et al. (2008) found that, for the producers they interviewed, “the motivations associated with their projects went beyond a response to difficulties experienced with conventional food production businesses, and were related to ethical positions on how food production should be practiced. In some instances, producers talked in visionary terms about the objectives that underpinned their involvement” (p. 85). The findings of these researchers point to evidence of praxis in which the ideal and the material reinforce each other.

40 For a similar discussion, see also Kneafsey, et al., 2008, p. 84.
Bell (2004) characterizes industrial agriculture as a monologic process that leaves little to no room for personal choice. In industrial agriculture, power is concentrated and conversation is one way: from powerful agribusiness entities and the overarching policy structure to farmers. There are few if any openings for farmers to participate in a dialogue about what farming is and what it should be. What Bell (2004) is describing is the hegemonic structure of industrial agriculture, and he notes the difficulty of both recognizing and acting to counter this hegemony. He says, “It is not an easy matter to recognize monologue. It is not an easy matter to reject monologue” (Bell, 2004, p. 174). To do so means engaging in counterhegemonic praxis that can be experienced as crossing a bridge of no return. Once one loses the security, albeit a false security, of participating in the hegemonic order and allows oneself to see the oppressive and destructive nature of the system itself, blind support for hegemony is no longer an option. Hence, the phenomenological break discussed by Bell (2004, p. 154) results.

In the Global South, small farmers seem to more readily recognize the wider context of hegemonic enforced dependency within which they operate. Perhaps this recognition derives from the relative identities of these farmers within the globalized agricultural system: Iowa farmers seeing themselves as advanced practitioners in a scientifically-oriented field and small-scale producers in the Global South seeing themselves as exploited or dispossessed by the system itself.

In his exploration of social drivers for sustainable agriculture, Bell (2004) cautions that there is no particular recipe of circumstances and/or personality traits that can determine who will and who will not move from conventional to sustainable farming:

A number of surveys on sustainable farmers have been conducted, looking for the statistical factors that might help predict why one person turns to sustainable agriculture and another does not. They haven’t found much…. Sustainable farmers are unremarkable in their age, their educational attainment, their political affiliations, their ethnicity, and
their household sizes and structures. Their farms are noticeably smaller…. There is some … evidence to suggest that farmers are usually in their younger years, typically under fifty, when they make a commitment to sustainable agriculture…. It is probably an economic matter. Older farmers are more likely to be financially secure…. Economic stress is, of course, part of the standard crystallography of theories of social change…. Yet even here there is need for much analytic caution. For many of the sustainable farmers we spoke with, the mid-1980s farm crisis seems to have been the economic straw that broke the phenomenological back of their previous style of farming. It is probably no accident that PFI itself was founded in 1985, at the height of the 1980s farm crisis. (p. 159)

For some PFI farmers, however, the crisis came much earlier, two decades earlier in one case, and for some it came much later (Bell, 2004, p. 159). Still, Bell (2004) notes that most farmers who also suffered through the 1980s crisis are not sustainable farmers (p. 160). According to Bell (2004), it is probably not the degree of economic stress that leads some farmers to change course from conventional to sustainable farming. It may have a lot to do with “dialogic providence” – chance encounters with alternate knowledge systems and people involved in processes and discussions related to sustainable farming (pp. 162-163). Bell’s (2004) notion that contact with ideas, combined with material experience, acts as a driver for sustainable food praxis among PFI farmers is an essentially Gramscian formulation of the generation of counterhegemony through the historical interweaving of ideas and material circumstances. Additional, sometimes farm-specific, material circumstances have driven some PFI farmers toward change. For some, health issues, such as personal experience with unintentional livestock poisoning with agricultural chemicals, play a role in their break with conventional agriculture, but health issues are still not an accurate predictor of a switch to sustainable agriculture (Bell, 2004, pp. 163-167).

Bell (2004) also found that sustainable farmers commonly explained their adherence to sustainable practices as stemming from an extended period of overseas living in their twenties or thirties, usually in a country in the Global South, sometimes as a teacher, a Peace Corps worker,
or a missionary (2004, p. 167). One farmer’s Peace Corps experience led him to see U.S. culture from alternate perspectives and to develop a deep sense of mistrust regarding the dominant domestic narrative of U.S. history. This watershed experience also led him to question conventional explanations and processes of life in his home country (Bell, 2004, pp. 167-170). It seems that the combination of being exposed to new ways of thinking as well as to radically changing material circumstances can generate counterhegemonic sustainable food praxis among U.S. citizens who live for extended periods in the Global South.

Though issues of identity and knowledge construction may play important roles in keeping farmers on the conventional track, Pretty (2007) reminds us that losses accruing to farmers who convert to sustainable agriculture are not only psychological. Although industrial farming has its socio-ecological costs, transitioning to sustainable farming is also a costly process: “During the transition period, farmers must experiment more and so incur the costs of mistakes as well as of acquiring new knowledge and information” (Pretty, 2007, p. 144). As noted above, sustainable food systems can work well (see also a study by Pretty, 2002, pp. 82-83). PFI farmers have their own proof. In over 29 PFI trials, ridge tilling without herbicides resulted in the same yields as ridge tilling with herbicides (Bell, 2004, p. 222). But sustainable farming can be difficult as well. In the U.S., sustainable farmers tend to farm fewer acres and, therefore, reap fewer benefits from agricultural subsidies. Furthermore, they often start from a financially weak position, which reduces their chances of getting loans and increases the likelihood that banks will call in their debts (Bell, 2004, pp. 237-238). The pressure of the agricultural treadmill among U.S. farmers also creates resistance toward sustainable farming in that even temporary losses incurred in a transition toward sustainable farming may mean loss of the farm itself.
Through conducting a study of Iowa farmers, Carolan (2006) found that, among conventional farmers, there are also epistemic barriers to change. Carolan (2006) noted that many conventional farmers had difficulty seeing the benefits of sustainable agriculture, which often extend beyond the scale of the individual farm, but they could easily perceive the benefits of conventional methods, such as weed-free rows. Carolan (2006) also notes that movement toward more sustainable methods was greatly facilitated by development of new social networks.

Perhaps these networks encourage individual farmers to see their neighbors as more than competitors for commodity market share and to recognize the effects of their actions within a wider context that takes into account community bonds and presence or lack of community potentia. These networks most definitely represent a means for reintegration of farmers into community, and potentially into the broader community of localized nature.

As PFI farmers demonstrate, counterhegemony is alive among U.S. farmers. Conventional farmers may be among global producers who identify most strongly with hegemonic industrial agriculture, but the increasing presence of sustainable producers combined with rapidly growing consumer interest in sustainably produced food in the U.S. (Lyson, 2004, pp. 91-92) indicate that sustainable food counterhegemony is possible, even for those who live at the center of Empire.

**Local Food Praxis: A Path Toward Sustainability and Away from Enforced Dependency**

From the local to the international levels – from Latin America to the U.S., from Europe to Africa and Asia – we see forms of counterhegemonic praxis taking shape around sustainable food as a mode of production and a political economy that resists enforced dependency while also embodying a movement toward more sustainable living. I concur with Ploeg (2008) who characterizes sustainable food system activity as counterhegemonic resistance to a global
capitalist order that gains much of its power through enforcing dependencies. Ploeg (2008) states,

The peasantry increasingly represents resistance…. The resistance of the peasantry resides, first and foremost in the multitude of responses continued and/or created anew in order to confront Empire as the principal mode of ordering. Through, and with, the help of such responses, they are able to go against the tide. (Ploeg, 2008, p. 265)

In the latter half of this chapter, we have analyzed and interpreted a selection of responses taking place globally, and we have seen how these responses embody Gramscian counterhegemonic praxis. Praxis is about realizing one’s agency as a subject; it is about refusing to remain a mere object and victim of the hegemonic order. Ploeg (2008) draws connections between agency and local food activism saying, “The peasant principle is about facing and surmounting difficulties in order to construct the conditions that allow for agency…. It is also about subjectivity – the peasant principle implies that particular worldviews and associated courses of action matter” (p. 274). He concludes that “the peasant principle is an emancipatory notion” (Ploeg, 2008, p. 262).

Local food counterhegemony can be characterized as a form of democracy made possible through the dispersal of control over the food system and the resulting openings made available for choice among both producers and consumers. Scholar and activist Neil Hamilton defines food democracy, a concept and practice that I argue would be an ultimate result of food system (re)localization:

The word ‘democracy’ comes from Greek words meaning ‘people’ and ‘rule’ …. There are four essential pieces to the creation of a food democracy. The first is citizen participation; all actors in the food system must have a voice, and the contributions and concerns of each group must be considered. Second, informed choices are necessary. Questions, information, and knowledge about how food is produced are key. Third, a number of choices must be available to citizens. Although there are currently many types of food to choose from, most of the food is produced in the same faceless, industrial manner. Fourth, participation in food democracy must happen at the local as well as the national levels. One’s food choices should be geared toward protection and development of the community, whether this means buying from farmer’s markets or eating at locally owned restaurants. (quoted in Nabhan 2009, p. 193)
This definition of food democracy corresponds with the socio-ecological living sustainability within which social justice and equity form essential components.

Localized efforts to build sustainable food systems are incredibly important to realizing socio-ecological sustainability which, ultimately, must be realized in place. Emphasis on national level policy is an important form of sustainable food counterhegemony, especially with regard to subsidies, but since national governments most often act to support the hegemonic order, national policy is unlikely to be the primary means for addressing the coming food crisis that will result from globally converging socio-ecological crises. If these crises come to bear with the full force of their potential for destruction and within an atmosphere of globally pervasive enforced dependency, the outcomes for communities everywhere will be catastrophic. The potential of the sustainable food movement to simultaneously reduce and ultimately eliminate both intellectual and material dependency within the food system is a potential we must realize in the near term in order to avert the worst of the global crises bearing down upon us (see Shiva, 2008, p. 6; see also Astyk, 2008).

Conclusions on Local Food as a Pathway Toward Sustainability-oriented Learning and Living

It has not been my purpose in this chapter to define a scientific truth or outline a sure-bet set of practices for sustainable food production and consumption. In any case, it would have been impossible for me to argue that any particular set of techniques and socio-cultural approaches to sustainable food could be applicable to all peoples and places. What I hope to have done is create a conceptual framework for sustainable-food-oriented social change and to situate that framework within the broad context of the need for counterhegemonic activity aimed at combating enforced dependency.
I have argued that sustainable food activism is a social movement and that it represents movement along a continuum toward the vision for a sustainable food system articulated above. All movement toward food system sustainability is a step in the right direction, and the fact that producers and consumers may engage only partially in the sustainable food movement in their day-to-day lives does not negate the significance of their engagement.

I have not defined local as it applies to (re)localization of food systems but have, instead focused on the act of shortening supply chains that link producers and consumers and on production for community autonomy and resiliency. I believe it is not so important to articulate once and for all what local means in terms of food production. We are so far away from realizing a (re)localized food system that any moves in this direction represent welcome contributions to the sustainable food movement. In the long term, each community and/or region will have to work out, through trial and error, the optimum size and composition of its food system. This can only be done through widespread praxis. If many of us can move at least part way along the sustainable food continuum, we might mirror some of the social conditions that existed in Cuba at the start of the Special Period so that we will be ready enough to handle the coming food crisis.\(^{41}\)

The sustainable food movement has received little to no support from policy makers (Norberg-Hodge et al., 2002, p. 2). It is not a passive revolution pushed by the hegemons of the global economy that promises only new forms of enslavement, but a grassroots movement capable of undoing and draining power from global systems of enforced dependency. The social source for this movement – everyday people who produce and consume food – makes it especially apt as a mode of creative destruction of neoliberal globalization. If the movement’s momentum can be sustained throughout an energy transition away from fossil fuels, throughout

\(^{41}\) For projections on the impacts of the emerging global food crisis, see Pfieffer, 2006, chap. 6.
other socio-ecological catastrophes including climate change and fresh water depletion, and throughout a collapse or reshaping of the global growth economy into sustainable economies – that is, if we can avoid descending into localized and globalized resource wars and, instead, focus on creating resilient and sustainable relationships with places – perhaps we can avoid the worst of the possible outcomes of the converging crises we face. Food is at the heart of sustainable living because every person needs it and because, in many ways, it defines our relationship to each other and to nature. Food is central to culture and identity, and we can be continually engaged in food praxis. Shifts toward sustainable food are, therefore, important shifts toward sustainability.

If sustainable food systems are central to the sustainability of communities and cultures, local food ought to be a leitmotif for sustainability education, including at the college level. The squeeze on agriculture that has resulted in technological and economic emphases in agricultural problem solving has vastly diminished the extent of agricultural knowledge through both reductions in the sheer number of farmers and reductions the diversity of knowledge they possess. Knowledge of specific ecologies and how to farm well in them has also been lost due to technological standardization within modern agriculture. As noted above, (re)developing this knowledge requires a different social practice of agriculture that, within the hegemonic system of global capitalism, takes the form of resistance. In fact, much of the resistance represented in the (re)building of sustainable food systems is embodied in new/old ways of creating and sharing agricultural knowledge in place-centered praxis that is dialogical and democratic.

For colleges and universities to participate in teaching and learning processes that promote sustainable food systems would mean that instructors and students would participate in counterhegemonic resistance. In order to be effective, sustainable food programs in higher
education would need to teach an integrated view of the food system as an entity embedded within wider socio-ecological processes. According to Buttel (1980), such teaching has been rare in the U.S.:

> There are very important connections between the arenas of agricultural structure, rural environmental problems, and rural community and regional development. Unfortunately, these areas are almost always conceptualized and researched in isolation from each other in North American rural sociology. (pp. 57-58)

Ploeg (2008) also points out that local food activism is hardly even visible to those trained within the hegemonic order that extends, also, into the realm of higher education. He says that “current forms of repeasantization are barely understood by most scientists and politicians” (Ploeg, 2008, p. 152). We might ask why this is. Perhaps it is because we only see what we have been trained or encouraged to see.

> It is my hope that educators and students within the context of higher education in the U.S. can contribute in important ways to the counterhegemonic praxis of building sustainable local food systems. Some institutions, programs, instructors, and students are already making such contributions, but, as I will argue in chapter six, extensive shifts in the purposes and practices of higher education will be necessary to achieving widespread local food sustainability praxis within higher education at levels necessary for contributing significantly to resolving the coming food crisis.
Chapter 6: The Critical Pedagogy of Sustainability: A Call for Higher Education Praxis

To this point in this dissertation, I have articulated a critical social theory of sustainability as a normative framework for sustainability praxis and a theory of enforced dependency as a hegemonic, unsustainable, and pervasive phenomenon in global political economy. I have also argued for forms of agency that engage both ideas and action in a continuing, counterhegemonic dialog, and I have argued for sustainable food praxis as a central focus for counterhegemony. I have also argued that sustainability-oriented counterhegemony must occur within the context of specific places as loci of socio-ecology.

In this chapter, as a means to address converging sustainability crises and to combat enforced dependency, I propose that college educators should engage in a critical pedagogy of sustainability that includes involving students in service learning projects. College courses and programs should combine teaching and learning of a structuralized and critical view of the world-system (see Wallerstein 1974, 1976, 2008) with participation in transformative and transdisciplinary community action. Using this strategy, higher education could assist in important ways with helping to move society toward sustainability.

I do not hold any illusions about the difficulties inherent in reorienting the pedagogical work of U.S. colleges and universities toward sustainability. The inertia embodied within dominant educational priorities and practices that evidence a glaring lack of concern with sustainability – and even intimately engage with facilitating destructive worldviews and practices – is strong indeed, and those of us who work to redirect the purposes and processes of higher education are often misunderstood at best within our home departments, programs, and institutions. Nevertheless, if we as educators and as a society are to move higher education in the
direction of sustainability, effective arguments must be made and shared for doing so, and a widespread pedagogy of sustainability praxis must begin – now.

Higher education is already well behind the curve with regard to sustainability learning and action, and the systems and social roles for which colleges and universities currently prepare students are crumbling in tandem with the late capitalist global economy. I argue for a critical pedagogy of sustainability to serve as the central vehicle for teaching and learning relevant to addressing the sustainability crisis. Various aspects and incarnations of this pedagogy are already in use by sustainability educators in colleges and universities. Still, I hope to offer a useful vision for this work by clearly articulating a critical pedagogical praxis that is up to the task of addressing the sustainability crisis in its full complexity. I propose this alternative vision as a platform for both individual educators and entire institutions to engage in recontextualizing and reorienting the mission and the work of colleges and universities in ways that would serve sustainable ends. If higher education is to deliver on its promise of effective service to society, it must move quickly to critically examine the causes of the converging economic, social, and environmental crises that comprise the sustainability crisis as a whole, and its professors and students must engage in cycles of action and critical reflection toward mitigating these crises whenever and wherever possible. Otherwise, society will soon have little need for higher education, and the opportunity to invest the significant material and intellectual resources of colleges and universities toward mitigating these crises will be lost.

In this chapter, I articulate a program for the critical pedagogy of sustainability and contrast that program with the goals and processes of U.S. higher education today. I articulate a theory of sustainability education that builds upon the working definition of sustainability and the critical social theory of sustainability articulated in chapter two. I argue that, in multiple
facets of its process, the critical pedagogy of sustainability must confront and disrupt patterns of enforced dependency elucidated in chapter three. The counterhegemonic praxis I advocate is explicitly place-centered for reasons articulated in chapter four. I advocate a critical pedagogy of sustainability that engages students, faculty members, and the broader public in transdisciplinary praxis aimed at sustainable (re)inhabitation of place. The context and scope for this chapter is primarily public higher education in the United States, though arguments and insights relevant in this context can also be useful in the broader context of primary, secondary, and higher education in other locations and societies. This work is also relevant to activists and community organizations working to encourage living and learning sustainability.

**Higher Education as It Is Today**

American higher education today resembles a shattered mirror. The academic disciplines are like individual fragments of reflective glass, each capturing in clear detail some small segment of a unified reality, each dividing that reality with fractious borderlines that obscure our views of larger relational wholes (see Nicolescu, 2002; Huckle, 2004). As educators and students, tradition dictates that we are not to worry about the big picture but instead focus on a fragment or two and master the smallest details of the representation of life those fragments create. The frame of the mirror, the system of values and beliefs embodied in institutions of higher education, is wooden because the heart of higher education is wooden – wooden in its proclaimed objectivism and in its habits of avoiding matters of the heart and spirit while focusing its energies on developing the intellect. The frame is also wooden in its rigid refusal to remake itself into a vehicle for praxis – even in the face of the converging socio-ecological crises of our day. Higher education is a mirror in that it is reflecting backward, creating and recreating a modern paradigm that we can clearly see no longer works – if it ever did work. Modernity’s
system of values and beliefs permeate the curriculum of higher education and shape the worldviews of faculty and students alike, and many of these values and beliefs are leading us down the path toward oblivion for our own species and many others. We need new ways of seeing and being in the world, and higher education, as a center for focused learning, has a role to play – if its institutions can be made to serve broader social and ecological needs for sustainability.

The fragmented mirror that is American higher education today largely reflects eighteenth century Western European Enlightenment thinking and values. In the view that emerged from this period, humans are viewed as primarily economic beings. It follows, for those who adhere to this system of beliefs and values, that the satisfaction of human material needs and desires is of primary importance, although the emphasis on accumulation typical of capitalist societies actually worsens the material foundation of the system – the natural world (Spretnak, 1999, p. 219). Modernity’s central values and beliefs embody

- Progressivism,
- Objectivism,
- Detached rationalism as the foundation for action,
- A mechanistic worldview of all life and life systems as components in a vast machine essentially devoid of meaning or intrinsic value,
- Reductionism,
- Scientism,
- Efficiency through standardization,
- Bureaucratization, centralization of power and decision making, and hierarchical institutional systems,
• Anthropocentrism,
• Instrumental reason,
• Opposition to nature,
• Compartmentalization of the lifeworld,
• The desire to throw off the chains of religion and superstition through rationalism, and
• Desacralization of nature. (Spretnak, 1999, pp. 219-221)

In her book *The Resurgence of the Real: Body, Nature, and Place in a Hypermodern World*, Charlene Spretnak (1999) notes that this system of values and beliefs is also highly gendered, that modernity is “hypermasculine” and patriarchal because highly valued ideas and practices are culturally identified as characteristically male while devalued ideas, practices, and characteristics – such as emotionality, empathy, and identification with the earth – are indentified as characteristically female (p. 221). According to Carolyn Merchant (1996), this gendered bifurcation of values and practices parallels the false and weighted dualism of the human/nature construct within which Western societies have seen fit to dominate and control nature while Western men have dominated and controlled women.

The reductionist thrust of higher education, inherited from the Newtonian Age of Reason, is clearly evident in the system’s division of both knowledge and the processes of inquiry into discrete disciplines. Further reductionism is favored within disciplines where developing in-depth and highly specialized knowledge has become a favored tack for gaining recognition and tenure.42 Aspirations of the social sciences to achieve objectivism and follow the methods of the sciences further expose the Enlightenment foundations of American higher education. These aspirations extol culturally male values.

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42 Transdisciplinary theorist Basarab Nicolescu (2002) refers to this system of proliferating and intensifying specializations as the “disciplinary big bang” and, drawing on insights from quantum physics concerning the nature of reality, calls for increased emphasis on transdisciplinary work. We will return to this argument below.
These divisions and tendencies are especially evident in large research institutions. The research and development work of faculty and students at these institutions, furthermore, increasingly benefits the powerhouses of the capitalist economy, thereby serving *homo economicus*, often at the expense of both *homo sapiens* and the natural world. *Homo economicus* is further served by the highly centralized and standardized corporatist model of higher education where students are seen as both “customers” and “products” of an essentially economic process that is to be made as “efficient” and “accountable” as possible to preconceived “learning outcomes” and in which training students to become good a fitting tools for corporate entities is often the highest priority (McLaren, 2005, p. 95, 2009; O’Sullivan, 2004, p. 169; Sterling, pp. 27-28). Stephen Sterling notes the increasing corporatization of education in the modern world in his book *Sustainable Education* (2004). This corporatization is manifested in American higher education in statewide curriculum standardization programs that promote transferability of college credits, in centralization of curricular decision making at the statewide level, in implementation of standardized proficiency testing, and in attempts to exclude socially or politically radical content from the curriculum through ending the practice of awarding tenure to professors. “Reforms” of this kind have been implemented in various states.

Higher education is also explicitly complicit with capitalism in its careerist and credentialing orientations. The conception of higher education as a training ground for new cogs to fit the vast engine of capitalism sidelines the potential of colleges and universities to engage politically through asking serious questions about the merits of the capitalist project of endless economic expansion fueled by continued colonization of the lifeworlds of people globally. The conception of higher education as a credentialing and training component of the capitalist system deemphasizes its potential to theorize and engage in praxis to create alternatives to the capitalist
system and to study and actualize non-market-oriented aspects of humanity. The complicity of higher education in supporting the capitalist status quo effectively neutralizes most of its radical political potential and reduces higher education to serving as a gate keeping, credentialing, and training arm of global capitalism. McLaren describes the situation thusly: “The truth of the matter is the stranglehold of corporate power on the universities is choking the life out of whatever remains of the university’s role as a vehicle for the advancement of public life” (McLaren & Kumar, 2009).

Some within the world of American higher education question its service to the modern capitalist project. More recent, but by no means dominant, approaches to offering holistic and integrative studies include interdisciplinary studies programs such as those engaged with science, technology, and society and environmental studies. The science of ecology practiced at many institutions represents another important effort to integrate understanding of the natural world derived from various disciplines in order to see the proverbial forest again instead of only individual trees. The broadest, most integrative versions of ecology see humans and human social systems as part of the natural world so that studying natural systems includes studying human actions within those systems. Though some individual students, professors, academic departments, or entire institutions study and practice according to alternative conceptions of education’s purposes and possibilities, these are not the norm for American higher education.

A different kind of education is needed now in our complex modern world where human actions threaten the survival of species and the health of the biosphere itself. That education must be holistic and concerned with the health of interrelationships among life forms and ecological processes. It cannot be value free, purportedly objective, and descriptive. It cannot be reductive or serve the interests of the powerful alone. It must be actively involved in the project of
identifying and changing the values and beliefs that guide our culture, and it must engage people in actions to mitigate the socio-ecological crises of our day.

Given the breadth and depth of socio-ecological problems we face today, and given that these problems derive in large measure from the themes of domination and exploitation that pervade Western societies and societies dominated by Western, capitalist globalization, we need new goals for higher education. If they are to play a role in developing sustainable ways of being human in the world, colleges and universities cannot continue to normalize a globalized society that is headed for catastrophe. They cannot aim only to help individual students achieve lucrative careers in a world where the continued enslavement of nature and the colonization of people serve as inputs for economic growth – and where that growth leaves in its wake widespread diminishment of the very natural and human systems that support it (see O’Sullivan, 2004).

Given the present crisis of capitalism, the global ecological crisis, and the tight relationship between abundant oil supplies and modern jobs, the arguments I advance for a critical pedagogy of sustainability are highly practical. Higher education as a whole in the U.S. embodies the failed modern project of domination and control of others and nature. It is not sustainable. It exemplifies rejection of human to human and human to nature reciprocity as well as rejection of socio-ecological holism as the most relevant context for learning and doing. We now turn our attention to an alternate vision for higher education: the critical pedagogy of sustainability, what it is and what should be its goals.

**Conceptualizing the Critical Pedagogy of Sustainability**

If higher education is to serve sustainable ends, its processes and goals must change. Educators will need to be more than descriptive and adaptive in their work. They must engage and facilitate the engagement of others in a critical reassessment of humanity’s relationship with
the natural world, and they must act on theories generated as a result of this critical engagement. As an educator, I seek to unite theory and practice in my courses. I believe it is because much of my teaching has centered on the theme of sustainability that the desire to *do something* about the pressing problems studied has been a natural outgrowth of my professional development. Once I began to comprehend the depth and severity of the challenges facing humanity, I wanted to do more than understand why and how unsustainability characterizes our modern globalized world – I wanted to effect change.

I propose that the central goals of higher education should be 1) to question the systems of values, beliefs, and actions that created our unsustainable socio-ecological paradigm, 2) to help individuals and groups to envision new ways of being in the world so as to avert, to any degree possible, the converging socio-ecological crises of our time, and 3) to engage in praxis based on these new theories and visions. By pursuing these goals, higher education could assist with the necessary and meaningful work of (re)building vibrant, diverse, and resilient communities better prepared for current and future turbulent times. The purposes and form of higher education for which I argue are rooted in the concept of sustainability praxis. The praxis of the critical pedagogy of sustainability involves situated generation of theory through reflection on practice.

Critical pedagogy, teaching that emerges from and engages students in critiques of society rooted in critical theory, has a rich history. It is most notably associated with Brazilian educator Paulo Freire and his path breaking work *Pedagogy of the Oppressed* (1970/2000). Freire emphasized praxis as a means of engaging with the world in the educational process. He encouraged the use of praxis as a means to comprehend hegemony as well as a means to alter damaging social systems characterized by domination and oppression. In critical pedagogy,
praxis translates theories generated through the process of comprehending and critiquing the world into the realm of practice toward social transformation. Reciprocally, through a process of critical reflection, practice informs theory by serving as a generating point for further theorizing. Through reflection, theory and practice inform one another reciprocally in the process of praxis. When engaging in praxis, one conceptualizes both theory and practice as always contingent and evolving.

Freirean critical pedagogy encourages students to “name the world” (Freire, 1970/2000, p. 88, emphasis in original) as a central path to learning and social transformation: to identify and probe overarching themes of oppression at work in the world – and their specific manifestations. The process of naming the world awakens agency within and among the voiceless. Freire’s (1970/2000) pedagogy is essentially transformative. It goes beyond questioning assumptions to advocate a counterhegemonic “conscientization” as a desired outcome. He calls upon teachers, students, and the educational process itself to serve the ends of social justice. Although social justice is the focus of Freire’s work, his pedagogy can also be applied to issues of just action with regard to the natural world, especially when one considers that the systems of power that exploit both human and natural systems derive from the same value system.

Other critical educators who, like Freire (1970/2000), draw a definition of critical from critical theory also emphasize the importance of questioning internalized assumptions, aspects of our worldviews that have been absorbed uncritically from the cultural paradigm and internalized as frameworks for thought and belief (Brookfield, 1987, 2000, 2005; Mezirow, 2000). Brookfield (1987, 2000, 2005), Mezirow (2000), and others have constructed their own critical pedagogies more or less upon Freirian principles and practices of counterhegemony. McLaren (2005, 2007; McLaren & Farahmandpur, 2005; McLaren & Houston, 2005; McLaren and
Kincheloe, 2007; McLaren & Jaramillo, 2007; McLaren and Kumar, 2009) is among the best known and most prolific theorists and educators in the Freirian tradition. Together with Allman (2001) and other critical and Marxist theorists, McLaren advocates a “revolutionary multicultural critical pedagogy” (see McLaren and Farahmandpur, 2005) that is decidedly anticapitalist and therefore highly appropriate to sustainability educators like myself who work to transform through praxis the unsustainable paradigm of late capitalist globalization.

These and other critical educators and theorists offer rich bodies of work from which to draw in realizing forms of sustainability education praxis relevant to both local and global contexts. It is beyond the scope of this chapter to summarize and synthesize the many aspects of these bodies of work that can contribute meaningfully and practically toward counterhegemonic educational praxis. Instead, in an effort to emphasize the sustainable ends I seek to promote through critical pedagogy, I focus here on a form of counterhegemonic educational praxis that articulates specifically with the theory of enforced dependency developed in chapter three. This articulation is especially important within a context of sustainability action because enforced dependency is a central socio-ecological contradiction within the late capitalist world-system that must be confronted and eliminated.

This section is comprised of several subsections in which I articulate the central arguments of this chapter. The critical pedagogy of sustainability that I develop in this section, is a theory that I apply through praxis in my sustainability-oriented teaching, particularly in the End of Oil course and the Food for Thought local food program in which many of my students participate. In chapter seven, I will discuss my pedagogical praxis and its relationship to the conceptual framework developed in this chapter.
The critical pedagogy of sustainability focuses on counterhegemonic critique and on sustainability-oriented (re)inhabitation as two aspects of a unified praxis. The theory of enforced dependency unites the two like two sides of a coin.

The critical pedagogy of sustainability represents a synthesis between critical pedagogy and place-centered education. Gruenwald’s (2003) article “The Best of Both Worlds: A Critical Pedagogy of Place” proposes this important synthesis. Gruenwald recognizes important relationships between the exploitation of people and nature that correlate well with socio-ecological living sustainability. He also notes that, while the critical tradition has emphasized the need for social transformation, it has often neglected to situate its analysis within a broader ecological context. He also observes that the pedagogy of place has often neglected to address the political context within which places evolve as human/nature constructs marked by social contradictions. Gruenwald’s work represents an important launching pad for further developing the critical pedagogy of sustainability. He proposes using “decolonization” and “reinhabitation” as frames for critical praxis, a proposal I echo and further elaborate in this section. According to Gruenwald (2003),

being in a situation has a spatial, geographical, contextual dimension. Reflecting on one’s situation corresponds to reflecting on the space(s) one inhabits; acting on one’s situation often corresponds to changing one’s relationship to a place. Freire asserts that acting on one’s situationality, what I will call decolonization and reinhabitation, makes one more human. It is this spatial dimension of situationality, and its attention to social transformation, that connects critical pedagogy with a pedagogy of place. (p. 4, emphasis in original)

As an important step in arguing for decolonization and (re)inhabitation as central themes in the critical pedagogy of sustainability, we must begin by highlighting the role of hegemony in creating the sustainability crisis, an exploration that will point to the need for counterhegemony in sustainability-oriented pedagogy.
Hegemony, as noted in chapter two, is the double-pronged instrument of domination, control, and oppression of both people and nature. One prong consists of overt dispossession, oppression, and control. This aspect of hegemony has taken the form of colonial conquest and dispossession as well as imperialism and the foisting of neoliberal economic and social policies upon nations by international development banks and the International Monetary Fund (often with the collusion of domestic elites and the support of core powers within the world-system). The second prong of hegemony consists of the continued colonization of the lifeworld of people globally so that they internalize the value system and the logic of globalized capitalism, with the devastating result that the oppressed collude in their own oppression (Gramsci, 1971/1999, pp. 57-58).

In the Global South, cultural hegemony evidences itself within people as they develop tastes for the products of imperialistic cultures such as movies and fashion\textsuperscript{43} and as they concomitantly come to value money over self-sufficiency. The colonized admire the “lifestyles of the rich and famous,” desire modern fast foods and soda over traditional local foods and beverages, and come to see nonmodern lifeways as generally inferior to those of industrial societies. This colonization of the lifeworld enforces dependency upon the unsustainable systems of globalization and drives unsustainable and oppressive consumerism.

As explained in chapter two, in core industrial societies, cultural hegemony often takes the form of repressive desublimation, a situation in which the material and sensuous desires of people are met (desublimated) while their freedom is progressively circumscribed. Within a society replete with repressive desublimation, one thinks and acts within increasingly narrow parameters in support of the status quo in order to continue a life of material comfort. Marcuse

\textsuperscript{43} The taste for fashionableness can even extend to modifying one’s body through plastic surgery. Witness the growing demand for eye surgeries among Asian women seeking to make their eyes look more like those of white women, one among many of the truly horrific demonstrations of the racist aspects of hegemony.
(1964) claims that the diffusion of this way of life creates a “one-dimensional” society. Such a society is one-dimensional in the way it appears to fuse the interests and goals of work and life across classes and other social divisions. The result is an illusion, however, a superficial exterior that serves to mask deep social contradictions. Repressive desublimation is a subtle and alluring form of cultural hegemony that applies motive force to the engines of capitalism in important ways by driving unsustainable global consumption in core countries and regions.

Cultural hegemony is the insidious partner of domination by force, and both forms of hegemony propel the unsustainable juggernaut of late capitalist globalization. Since it is this juggernaut, in all of its complexity and historical momentum, that must be stopped, the critical pedagogy of sustainability must assume a solidly counterhegemonic stance. The critical pedagogy of sustainability confronts both prongs of hegemony through a process of critical self-reflexivity in which students confront their internalized assumptions as well as assumptions that form the foundations of the late capitalist system. According to McLaren and Farahmandpur (2005), “Self-reflexivity is a process that identifies the source of oppression, both from the outside and from within, through participation in a dialectical critique of one’s own positionality in the larger totalizing system of oppression and the silencing of others” (p. 110). Because dependency within the world-system is enforced through material, economic, political, cultural, and psychological means, this self-reflexive process of critique articulates well with the use of the theory of enforced dependency as a critical lens. I argue that the study of enforced dependency and engagement in counterhegemonic sustainability praxis to combat it should be the core of the critical pedagogy of sustainability. The theory of enforced dependency can serve as the bridge that powerfully unites critique and (re)inhibitory praxis.

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44 Counterhegemony is a central defining feature of critical pedagogy for many, though not all, educators who define their approach as critical.
Although the counterhegemonic stance I advocate can also draw upon postmodern social critique, in its focus on enforced dependency as a critical lens, it departs sharply from critique that “celebrates the free-floating articulation of signifiers in the construction of lifestyle discourses that are viewed … as decapitated from external determinations” (McLaren and Farahmandpur, 2005, p. 77). As McLaren and Farahmandpur note, postmodernism has made important contributions to educational theory and practice by “enabling teachers as cultural workers to strip back the epistemological scaffolding that props up essentialist claims to authenticity and to peel away layers of ideological mystification that shroud the assertion of truth and validity made by positivists within the empirical sciences” (2005, p. 20). However, constructivist postmodernist critique that “denies the material reality of nature” facilitates ecological destruction (Huckle, 2004, pp. 39 & 44). The preponderance of postmodern critique has also served to neutralize counterhegemonic critique of capitalism, in part by fragmenting the critical perspective (see McLaren, 2005, pp. 83-89). Postmodernists tend to focus on social contradictions and reverberations of power as these manifest in language, culture, and the politics of identity within highly specific social situations. In its divorce from both class-based analysis and political economy and its renouncement of all grand narratives, postmodernism has not engaged in a critique of global capitalism as a world-system within which the social contradictions addressed by its critique are in fact required structural components of the global capitalist system itself (McLaren & Farahmandpur, 2005, pp. 20-23).

The concept of enforced dependency is helpful in this regard in that it serves as an appropriate lens through which to draw connections among a wide range of interrelated and mutually reinforcing socio-ecological contradictions. These contradictions bind together to create the capitalist world-system with its characteristic ability to undermine self-sufficiency and to
chain all participants to its extractive and exploitive means of production and consumption. The critique embodied in the concept of enforced dependency, when developed extensively within an educational context, effectively confronts the hegemonic notion of the “global village” that benefits all participants and “raises all boats” through capitalist “development.” The critical pedagogy of sustainability also recognizes the significant dependency-enforcing role played by the use of world reserve currencies, particularly the U.S. dollar, in repayment of debt and purchases of oil (the petrodollar) and how use of these currencies contributes to global inequities, extreme consumerism in the U.S. (the source of dollars needed to repay debt and purchase oil), and staggering U.S. debt loads that threaten to permanently destabilize the global economy.

Studying the late capitalist world-system through the lens of enforced dependency helps to reveal the inner logic of the system itself as it manifests in the network of relationships and practices that progressively concentrate power and wealth in the hands of capitalist hegemons who increasingly consolidate the means of production and control patterns of consumption.

In keeping with the counterhegemonic foci of the critical social theory of sustainability, the critical pedagogy of sustainability also recognizes domination and oppression in many forms – racism, sexism, and domination of nature – as foundations to the enforced dependency of the late capitalist system. In this way, it parallels the “revolutionary multicultural pedagogy” of McLaren and Farahmandpur (2005). McLaren and Farahmandpur (2005) highlight the multicultural aspects of their pedagogy that manifest in its call for systemic alliances that also honor the full complexity and diversity of culture and identity:

A revolutionary multicultural pedagogy links the social identities of marginalized and oppressed groups – particularly the working class, indigenous groups, and marginalized populations – with their reproduction within capitalist relations of production. It also examines how the reproduction of social, ethnic, racial, and sexual identities, as particular social and cultural constructs as well as shared histories of struggle, are linked with the reproduction of the social division of labor. It therefore moves beyond the often
fragmented and atomized entrapments of identity politics, which frequently polarizes differences instead of uniting them around the common economic and political interests of marginalized social groups. (p. 153)

The revolutionary multicultural pedagogy of McLaren and Farahmandpur (2005) recognizes the full complexity of the phenomena of enforced dependency within globalized late capitalism. It also contributes to the critical pedagogy of sustainability because it can articulate in important ways with place-centered, counterhegemonic approaches to combating enforced dependency. It can do so in two ways: 1) by recognizing the diversity among the oppressed with regard to particular histories and identities – as these have been shaped by class, race, ethnicity, gender, and place – and 2) by recognizing globalized, systemic oppression deriving from the means of capitalist production as it insinuates itself into the lives of particular people and cultures (McLaren, 2005, p. 87). The focus on systemic oppression in the pedagogy of McLaren and Farahmandpur (2005) creates a narrative thread of class struggle (p. 173) within the capitalist world-system, a narrative that calls for unity in difference in counterhegemony and, by extension, in (re)inhabitation.

This call for unity in difference (see McLaren & Farahmandpur, 2005, p. 175) forms an essential foundation for the counterhegemonic praxis of the critical pedagogy of sustainability. Forging strategic alliances and engaging in critique of the political economy of globalized capitalism offer important means for confronting and altering macro-structural aspects of late capitalism. At the same time, diversity and place-centered living are required for a sustainable future in which human mobility and the ability to ship products around the globe will soon be severely limited. (Re)localization can only take place in a context of dismantlement or collapse of the global capitalist order. The work of (re)localization and the concomitant work of
counterhegemonic deglobalization are central foci of the critical pedagogy of sustainability (McLaren & Houston, 2005, p. 182).

As discussed in chapter four, indigenous culture and language traditions that embody the material, ethical, and spiritual knowledge of how to live in particular places serve as important examples for current and future, sustainable (re)inhabitation of place (Armstrong, 1995). In many places where colonization of place and the lifeworld of people has been thoroughly accomplished, few indigenous cultural traditions and little indigenous knowledge remain, and the process of inhabitation will have to begin anew among people who lack sufficient knowledge of local environments to live well primarily or entirely upon local resources. Place-based adaptation, informed when and where possible by sustainable indigenous and localized traditions, is central to the counterhegemonic praxis of the critical pedagogy of sustainability. This praxis works to decrease enforced dependency at the same time that it increases resilience within communities.

Exploring the role of (re)inhabitation in counterhegemonic praxis points to the need for a critical examination of the process of colonization and, thereby, to sources of tension between indigenous scholars and educators and critical theorists rooted in the Western intellectual tradition. According to Grande (2007),

The Western foundation of critical pedagogy … presents significant tensions for indigenous pedagogy and praxis. The radical constructs of democratization, subjectivity, and citizenship all remain defined through Western epistemological frames. As such, they carry certain assumptions about human beings and their relationship to the natural world, the view of progress, and the primacy of the rational process. The implications of such tensions are myriad and significant, giving rise to competing notions of governance, economy, and identity. (p. 320)

According to Grande (2007) the central difference between indigenous and Western critical approaches has to do with the primacy of class struggle within critical theory and the primacy of
colonization within indigenous critique. Grande argues that, though indigenous critique and
critical theory exist in tension with one another, they are also complementary in important ways:

While critical indigenous scholars do not equivocate the ravages of capitalism, a *Red*
critique of critical pedagogy decenters capitalism as the main struggle concept and
replaces it with colonization. Comparatively, the colonist project is understood as
profoundly multidimensional and intersectional; underwritten by Christian
fundamentalism, defined by White supremacy, and fueled by global capitalism. The
fundamental difference shifts the pedagogic goal from the ‘transformation of existing
social and economic relations’ through the critique and transformation of capitalist social
relations of production (i.e. *democratization*) to the transformation of existing colonialist
relations through critique and transformation of the exploitive relations of imperialism,
(i.e. *sovereignty*). This in not to say that the political/pedagogical projects of
democratization and sovereignty are mutually exclusive; on the contrary, in this new era
of empire, it may be that sovereignty extends democracy its only lifeline. (p. 320)

Given the imperative to (re)establish sustainable human/nature relationships in place in order to
ameliorate the effects of rapidly converging socio-ecological crises and move toward sustainable
living, Grande’s assertion of the primacy of sovereignty to the survival and perpetuation of
democratic political processes is insightful indeed.

Working with colonization as a critical lens facilitates the inclusion of the natural world
within our analysis of enforced dependency. Colonization has historically included converting
production for localized use value into a capitalist system of extraction and production of use
value and surplus value for core countries within the world-system. As noted in chapter five,
local sovereignty and independently sustainable communities contradict and undermine enforced
dependency, and sustainable communities create balance between human needs and the health of
the natural world. Sustainable communities require reciprocating relationships between people
and nature in place, relationships that foster the health and integrity of both individuals and the
entire human/nature complex that is place. Sustainable (re)inhabitation is a form of
decolonization.
Through its place-centered and (re)inhibitory foci, the critical pedagogy of sustainability builds upon the foundations of critical pedagogy and integrates indigenous critical perspectives in ways appropriate to confronting the sustainability crisis. Critical theory has not typically focused on place as a nexus for counterhegemonic, anti-capitalist, sustainability praxis. Instead, critical theorists have tended to focus on class-based analysis and struggle. In reality, as Grande (2007) emphasizes, the choice is not an either/or choice because class relationships both produce and are produced through enforced dependency and other forms of socio-ecological oppression and exploitation. McLaren and Kumar (2009) note that “colonization, and economic exploitation linked to capitalism, are demonstrated to be co-constitutive of plundering the oppressed ….” Because the conquest of place (which includes the subjugation of land-based cultures and people) is antithetical to the (re)establishment of diverse, resilient, sustainable communities, decolonization of places, peoples, and the very lifeworlds of individuals must be a central focus for critical, sustainability-oriented analysis and praxis. According to Gruenwald (2003), decolonization and (re)inhabitation form two sides of the same coin in the critical praxis of sustainability. Counterhegemonic decolonization is required for (re)inhabitation (pp. 9-10).

McLaren’s (2007) articulation of the roles of critical theory and pedagogy today reflects an important emerging vision for a place-centered, counterhegemonic pedagogy of sustainability:

In our pursuit of locally rooted, self-reliant economies; in our struggles designed to defend the world from being forced to serve as a market for corporate globalists; in our attempts at decolonizing our cultural and political spaces and places of livelihood; in our fight for antitrust legislation for the media; in our challenges to replace indirect social labor (labor mediated by capital) with direct social labor; in our quest to live in balance with nature; and in our efforts to replace our dominant culture of materialism with values integrated in a life economy, we need to develop a new vision of the future, but one that does not stray into abstract utopian hinterlands too far removed from our analysis of the present barbarism wrought by capital. Our vision of the future must go beyond the present but still be rooted in it; it must exist in the plane of immanence, and not some transcendent sphere …. (McLaren, 2007, p. 307)
McLaren addresses important areas for sustainability praxis. I concur with his call for a critical pedagogy rooted in anticapitalist critique and see this critique as central to the critical pedagogy of sustainability. His emphasis on decolonization of “cultural and political spaces and places of livelihood,” on replacing “indirect social labor … with direct social labor,” on living “in balance with nature,” and on replacing materialism with “values integrated in a life economy” all point toward the need for place-centered critical pedagogy and praxis for sustainability. McLaren (2007) is moving toward the synthesis between critical pedagogy and place-based education envisioned by Gruenwald (2003). He says, “While critical pedagogy offers an agenda of cultural decolonization, place-based education leads the way toward ecological ‘reinhabitation’” (McLaren, 2007, p. 4). I would add, as I argued in chapter four, that reinhabitation is not only ecological, but socio-ecological. It is as much cultural, economic, and political integration with nature as it is a material interaction with the biophysical world.

Place-centered critical pedagogy embodies the negative moment of praxis. In its focus on both counterhegemony and (re)inhabitation, it exemplifies what Homer-Dixon (2006) calls “catagenesis” – a dismantling of one system and the simultaneous building of something new.

As a central component of the critical pedagogy of sustainability, enforced dependency should be studied from a world-historical perspective.

In order to reveal enforced dependency as a pervasive and constitutive force within late capitalist globalization, the critical pedagogy of sustainability must engage with political, economic, social, cultural, and ecological facets of this global and local phenomenon. I believe it is especially important for sustainability educators to address the historical development of enforced dependency since the era of European global conquest, with special emphasis on the post-World-Ward-II period and on the Bretton Woods institutions as foundations for neoliberal global capitalism. Teaching that addresses this historical and geographical context encourages
students to appropriately situate critiques of late capitalist globalization. Through studying enforced dependency within world history, students are encouraged to conceptualize globalization as the current embodiment of the trajectory of colonization as a global phenomenon and to comprehend that colonization consists of both territorial and mental aspects. Such a reading of history highlights relationships of domination and oppression of both people and nature as two sides of the same coin of modern capitalism and its commodifying and alienating culture and economy. It encourages students to make connections between such abstract and seemingly disparate phenomena as international finance and debt, the global oil industry, and the Green Revolution, on the one hand, and the growth of megacity slums and perpetual underdevelopment in the Global South on the other. A study of enforced dependency since the colonial period also emphasizes that economy is indeed political – that economic structures and practices represent means of producing and reproducing social relationships that reinforce the hold of the dominant over the oppressed and over nature in service to the capitalist project (see McLaren & Houston, 2005, pp. 176-177).

*The critical pedagogy of sustainability explicitly engages in critique of the United States as a dependency-enforcing empire.*

Given the primary audience for this work (educators working in U.S. institutions of public higher education), it is important to explicitly recognize that the counterhegemonic praxis I advocate must engage in critique of the United States as empire because the U.S. is the premier global hegemon and enforcer of late capitalism.\(^{45}\) Although regulation of footloose global capital within the neoliberal regime of globalization eludes nation states, including the United States, the U.S. still maintains, a military force equipped with weaponry that dwarfs that of any other nation on the planet. The U.S. has used and continues to use its military force – both directly and as a

\(^{45}\) In emphasizing the importance of this critique, I concur with McLaren and Farahmandpur (2005, pp. 250-51).
threat – in an effort to maintain political and economic hegemony of the Washington consensus of neoliberal capitalism. As noted in chapter three, the petrodollar system of conducting OPEC oil sales solely in U.S. dollars and extensive dollar hegemony in international lending combine to promote export-oriented development in the Global South, the flip side of which is extreme overconsumption in the U.S., the source of the much needed dollars. Global price competition driven by both export-oriented development and free trade regimes together with the depletion of U.S. domestic oil reserves and deindustrialization have precipitated the loss of the U.S. manufacturing sector, an extremely negative balance of trade for the U.S., and skyrocketing U.S. debts. The world’s only remaining superpower is now so indebted to the rest of the world that its debts threaten to destabilize the entire world-system.

Given the breadth and depth of U.S. complicity in perpetrating the sustainability crisis and the crisis of capitalism itself, I assert the vital importance of U.S. citizens engaging in a form of self-reflexivity that critiques their collective agency as a nation. We in the U.S. have contributed in many ways – willingly and consciously or not – to widespread collective violence and ecocide ranging from war making to consumerism, and as noted in chapter three, our nation has been perhaps the prime mover in systems of enforced dependency worldwide. The critical pedagogy of sustainability must engage students in critique of the U.S. as empire in order to elucidate the enforced dependency that pervades the world-system, to encourage students to question this dependency on moral and ecological grounds, and to envision and begin to create alternatives.
The critical pedagogy of sustainability must explicitly critique concepts of hierarchical leadership and work to exemplify and create sustainable leadership characterized by patterns of inclusivity, reciprocity, and egalitarianism.

One overarching aspect of unsustainable social systems is the concentration of social power and the application of that power through command and control systems of leadership that serve to further privilege the powerful. Such leadership conceives of people and nature as tools to be manipulated to serve the desired ends of a few, and this domination/exploitation incarnation of leadership contributes directly to unsustainable exploitation of nature and people. Sustainability praxis must create patterns of social and economic organization that do not manifest themselves as domination and exploitation. These systems would be fundamentally grassroots and decentralized since reconstituting power, even in different hands, lends itself too easily to creating new systems of exploitation. The critical pedagogy of sustainability must therefore confront and reconfigure conceptions of leadership. Creating new modes of social organization for a more just and sustainable future is challenging because we cannot rely upon the leaders and leadership models we know best. These leaders and models are, after all, part and parcel of current unjust and unsustainable systems. We have to envision alternatives in a world where appropriate individual and community models have been largely obliterated by cultural hegemony, colonialism, imperialism, and neoliberal capitalist “development.” The very notion of developing leadership for sustainability therefore causes us to confront a profound irony in that we must critique and dismantle social constructs of leadership at the same time that we lead toward change.

In this section, I construct a theory of sustainable leadership as a foundation to the critical pedagogy of sustainability. I contrast sustainable leadership with exploitive leadership, and I argue that all leadership falls somewhere on a continuum between these two extremes. The
definitions developed for sustainable and exploitive leadership hinge upon the purposes toward which leadership is applied. The concept of sustainable leadership is further defined by exploring its authentic, inclusive, and developmental applications within society. I also argue that the central contradiction of sustainable leadership – how to lead without dominating, oppressing others, and thereby contributing to unsustainability – cannot be fully resolved, but one can engage in educational and other leadership practices that minimize oppression and its effects, that open space for and encourage new leadership to emerge, and that explicitly engage human imagination and action for justice. Such leadership can serve an integrative role within a social ecology that applies human agency in service to creating/restoring the health of the human/natural world.

Given the formative role of hierarchy in shaping unsustainable and destructive modern patterns of “development,” the concept of leadership itself is often confounded with hierarchy. Given this history, the idea of leadership for sustainability raises suspicion: can modern societies employ leadership in service to sustainability? Or are Western concepts and practices of leadership themselves so infused with notions of hierarchy that they remain irreconcilable with (re)creating sustainable societies? These are crucial questions for sustainability educators and practitioners today since, central to the effort of (re)constructing sustainable societies is the need to dismantle many of the organizing concepts and values of the modern world, concepts and values that feed and are fed by the widespread domination and exploitation of people and of nature by the powerful few: the “leaders” of the modern capitalist world.

Can we develop leadership today that is not inherently corrupt and manipulative? Can we organize people effectively within systems of leadership and followership in order to recast societies into forms that nourish and justly serve people and nature simultaneously? What might
such systems of leadership and followership look like? And on what values and practices would they be based? These are the questions underlying this exploration in search of a leadership for sustainability. At the heart of this exploration is the idea that sustainability cannot be achieved in the absence of social justice because social injustice derives from the same mindset – the same narrowly instrumental orientation to the world and others – that fuels environmental destruction. To pursue sustainability through manipulative and exploitive means would mean creating new systems of domination that would feed the creation of new, unsustainable systems. Can we (re)create leadership without domination?

In this section, I explore this question through developing several claims:

1) The purposes served by leadership are centrally important to sustainability so that, in developing leaders, we must ultimately focus on what leadership is used for.

2) Any system of leadership that moves people toward sustainability must be anchored in a concept of authenticity that drives toward creating reciprocal, mutually nurturing, sustaining relationships among people and between humans and the environment.

3) Differential authority must derive from a system within which everyone has access to serve as a leader.

4) Leadership can be learned in a sustainable social context, and it must be actively developed in everyone for a society to remain sustainable.

5) Sustainable leadership is integrative and ultimately place-centered.

Through developing these claims, I hope to shed light on the purposes sustainable leadership must serve and, thereby, to uncover formative and distinct characteristics of leadership for sustainability. In short, in this section, I conceptualize sustainable leadership as a form of
community praxis in which one coalesces and directs the energies of a group toward ends that enhance the integrity and long-term health of the community and the life and life-support systems of which it is a part. Sustainable leadership is also, most importantly, a form of power with, not power over, others. Through its praxis, sustainable leadership nurtures the leadership potential of followers in the recognition that the leadership of any one individual or group is, and should be, a temporary service to others. Sustainable leadership welcomes new leaders and creates space for their leadership potential to grow. In a world-system replete with entrenched systems of hierarchy and characterized by competition, sustainable leadership is a contradiction. To realize sustainable leadership would entail deep social change.

Through developing a concept of leadership for sustainability, I hope to inform the character, purposes, and practices of activists, educators, and others whose work continually redefines and teaches leadership in our changing world.

1) **Leadership is only as good as the purposes it serves.**

Leadership discourse and training that assumes practices of leading in any situation and for any purpose can be compared reduce leadership to a tool that can be used to further any human endeavor – whether or not the given activity is just or sustainable.\(^46\) I argue that leadership within systems of modern capitalist hierarchy is unequally rewarding to some while oppressive and exploitative to others and nature. Leadership in this context is not authentic leadership, it is opportunism, and it creates extreme imbalances among societies and between humans and nature. Meanwhile, the leaders of the global economy continue to exploit both people and the natural world as if there are no limits (physical or ethical). Leadership for

\(^46\) See Wheatley, 2007, for a discussion of the failings of command and control leadership and for insightful discussion on the importance of the purposes to which leadership is applied.
“success” in such a system is not leadership at all – if we see leadership as a means to equitably direct people on a path toward a healthy and prosperous future.

Three important constituents of the purpose of leadership can help us define a continuum of leadership character: degree of centralization of authority, level of abstraction, and scale of operation. The continuum of leadership ranges from exploitive to sustainable leadership. Within this continuum, those forms of leadership that are less abstract tend to be more sustainable (Kemmis, 1990) while the distancing afforded to practitioners of highly abstract forms of leadership tends to encourage exploitation in the form of collective violence. In other words, people are less apt to inflict harm in service to personal gain on those people and places with whom/which they share meaningful and intimate relationships – especially when they intend to stay put in place and community (Shuman, 1998). Similarly, scale of activity also matters: the larger the scale of operations, the greater the opportunities for abstraction. Scale, in turn, relates to an additional important factor in characterizing the purposes and practices of leadership along a continuum ranging from exploitive to sustainable: degree of centralization of control. Potential for hierarchical domination and exploitation increases with centralization of control, and this same centralization of decision making and concentration of profits are perhaps the most useful tools to those who would use leadership to exploit for (perceived) personal gain.

The leadership continuum, as a whole, holds at one extreme the leadership of exploitation, a form of leadership that uses everything and everyone necessary to perpetuate the leaders’ privileged status, and nothing more. This form of leadership is essentially manipulative and instrumental. At the other end of the continuum is sustainable leadership, a form of coalescing and directing group action in ways that promote socio-ecological living sustainability.
This form of leadership represents a normative commitment to health, integrity, and self-actualization for individuals as well as for the community as a whole.

The distinction I draw between exploitive leadership and sustainable leadership is one that hinges on what leadership is for. If we are to lead toward sustainability globally, we must ultimately concern ourselves with the effects of our leadership on the health and integrity of other people and nature. When acting within a model of exploitive leadership, one’s only aim is to remain in a position of (perceived) advantage over other people and nature.  

47 Exploring the history of global inequity, capitalist concentration of market control, and profits resulting from the leadership of imperial interests (as we did in chapter three), demonstrates that what leadership is for 1) informs all meaningful discussion of the character of leadership and 2) creates a foundation for developing a concept of sustainable leadership. Our discussion here breaks sharply with leadership literature and training that seeks to be apolitical. Seemingly apolitical leadership training and literature is, in fact, very political precisely because it does not overtly question what leadership is used for and, thereby, tends to reinforce the notion that authentic leadership can be practiced in any context, however skewed the power relationships that define the context might be. Such a conception of leadership tends not to question hierarchy in that the boss and the leader are conflated, as though it does not matter whether a person follows a leader by choice or must submit to follow a “leader” in order to keep earning a living. In the context of such overt hierarchies, any technique or practice of leadership, however profound or worthy, can be used for manipulation and control of the followers as well as for ecologically destructive ends. Effective leadership techniques practiced in ultimate service to destructive systems may even mask social contradictions and thereby delay radical action for social justice. To reveal the ideological content of much leadership training and literature, though, is not the same thing as to dismiss the value of work in areas such as industrial democracy. Because most of us globally now rely on the unjust and unsustainable capitalist system for survival, we are immersed in internal and external dialectics of authenticity/inauthenticity. We cannot extract ourselves from these historical realities overnight, and our choices in how we want to live are in fact limited. This is
2) **Sustainable leadership must be authentic.**

If we use leadership as a vehicle through which to envision and then enact sustainable systems, that leadership must be authentic. Robert Terry’s work *Authentic Leadership: Courage in Action* (1993) offers an excellent point of departure for considering what an authentic leadership for sustainability might look like. Terry’s conception of leadership focuses especially on social justice aspects of sustainability. According to Terry, “Leadership is a subset of action” (1993, p. xviii), but not just any kind of action. “Leadership depends on the ability to frame issues correctly – that is, to answer the question, What is really going on?” And, “Leadership … depends on the ability to call forth authentic action in response to the issues it identifies” (Terry, 1993, p. xvii). True leadership, according to Terry, is represented by calling forth a *fitting* response to “what is really going on.” It means seeking mutually beneficial and liberating ends.

Determining what is really going on (unveiling the truth of things) and offering a fitting response entail developing an understanding of social power and how that power is often used in manipulative, oppressive, and, therefore, inauthentic ways. This process involves reading the world in deeply critical ways. Authentic leadership entails developing political clarity and acting upon that clarity in service to inclusiveness and social justice. Authentic leadership, therefore, derives from a normative framework of praxis. On these points, Terry’s leadership philosophy articulates well with the work of Robert K. Greenleaf (1970/1991) and Paulo Friere (1970/2000).

Greenleaf’s concept of servant leadership offers a clearly defined ethical and relational foundation for leadership that aids in formulating responses to the world that are indeed *fitting*. According to Greenleaf (1970/1991), a servant leader works to build the leadership capacities of others rather than simply to maintain his/her own position of power. The servant as leader sows
the seeds of long term change because s/he shares ownership of the changes s/he leads with those who follow or who lead from their own positions. Philosophies and practices enacted through shared leadership are more likely to survive and evolve over the long term than are the philosophies and practices of single, dominant leaders, and are therefore likely to serve sustainability over the long haul.

Greenleaf contrasts the servant leader with the dominator leader who is “leader first, perhaps because of the need to assuage an unusual power drive or to acquire material possessions” (1970/1991, p. 7). Greenleaf’s ideas articulate well with discussion of the two extremes of the leadership continuum: sustainable and exploitive leadership.

The difference manifests itself in the care taken by the servant-first to make sure that other people’s highest priority needs are being served. The best test, and difficult to administer, is: do those served grow as persons; do they, while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants? And, what is the effect on the least privileged in society; will he benefit, or, at least, will he not be further deprived?” (Greenleaf, 1970/1991, p. 7)

Greenleaf’s emphasis on increasing the autonomy, and therefore the leadership potential, of the served coincides well with the critical pedagogy of Freire (1970/2000). According to Freire, freedom – in the form of political clarity – is achieved through naming the world to identify forces of manipulation and indoctrination, and this articulation forms a basis for praxis (1970/2000, p. 88). Greenleaf’s emphasis on the public sharing of the fruits of leadership also coincides well with the notion that a sustainable world would not concentrate power in the hands of the few while causing the vast majority to live in misery.

Terry (1993) offers additional theories on leadership that extend and further clarify Greenleaf’s (1970/1991) concept of the servant leader. These theories revolve around the concept of authenticity. Authentic leaders, according to Terry, must be concerned, not only with what decisions are made, but also explicitly with how they are made. Decisions must be made in
a transparent and open way and must “acknowledge the significant features of the human condition” (Terry 1993, p. 108). In taking this approach, authentic leadership treats people with respect and acknowledges that they have a right to engage in the decisions that affect their lives and communities. Authentic leadership, therefore, engages *justly* in service to justice. This conception of leadership articulates well with the idea that leadership for sustainability must be a socially just leadership.

Additionally, authentic leaders are self-compelled to engage in action that resonates with their conception of the world as it is and as it should be (Terry, 1993, pp. 110 & 128). According to Terry, such action further deepens the authenticity of one’s presence in the world. It is therefore important for authentic leaders to attain the political clarity of which both Terry (1993, p. xvii) and Freire (1970/2000) speak so that they can act within a framework of understanding “what’s really going on.” In the present time of converging crises that include climate change, resource depletion, pervasive pollution, a rapid rate of species extinction, global concentration of wealth and power, massive poverty, and more, political clarity that undergirds authentic leadership must drive movement toward sustainability (Pittman 2007).

Authentic leadership, according to Terry, resolves contradictions in the modern world and makes possible a worldview that is fully integrated with one’s lived presence. Terry notes the presence of contradictions that must be identified and acted upon in a process of politically clear leadership: “Many of us sense a deep, pervasive, and profoundly disturbing disconnection between the world that we experience as we actually live in it and the world that we create and describe in our rhetoric and imagination” (1993, p. 113). As a further means to shed light on the connection between leadership and social contradictions, Terry contrasts inauthenticity in action with authentic engagement in the world:
To be involved inauthentically is to feel cheated and manipulated. The alienated feel that they have no power; the inauthentic feel they have pulled a disconnected lever without quite knowing where and how, so that shadows are confused with reality. (1993, p. 113)

By contrast, authentic leaders live in response to their sense of political clarity in service to a vision for a better world. According to Terry, “Authenticity entails action that is both true and real in ourselves and the world” (1993, pp. 111-112). Authentic leadership in our time entails living into being a transformed, just, sustainable world.

According to Terry, “If the purposes that we once took for granted are now suspected to be inauthentic, there is no way to move ahead authentically until those purposes have been reviewed and alternatives proposed” (1993, p. 122). The current crises of sustainability illuminate the folly of the “common sense” world of the modern industrial age. It is time to recognize the inauthenticity of the industrial paradigm and to engage in authentic forms of leadership capable of envisioning and creating sustainable human/nature systems.

In holding fast to the notion that authentic leadership corresponds with action that is socially just, Terry (1993) offers a conception of leadership that is not relativistic but normative in function – it calls upon us to carefully examine what leadership is for and to establish guidelines for what leadership should be for. In this sense, authentic leadership serves as a vehicle for the expression of social values. According to Terry, a socially just conception of leadership can be self-correcting if it remains flexible and open to participative new discovery about the world as it is and as it should be. Authentic leadership maintains an outward focus on the world. It exists as a dynamic, yet normative, interaction with the world rather than as a rigidly fixed set of beliefs about the world. Terry states:

Authentication holds together what we know and do in living tension with what we do not know, avoid doing, or have misled in doing. Therefore, while the test of the leadership ideas of action and authenticity is initially their utility, it is ultimately their own authenticity. (1993, p. 127)
Terry’s conception of leadership as open, flexible, and responsive to the influx of new ideas (and the bearers of these ideas) reveals a potential for realizing a normative leadership for sustainability that explicitly rejects totalitarian embodiments.

The works of Terry (1993), Greenleaf (1970/1991), and Freire (1970/2000) contribute to a highly relevant conception of leadership in service to transforming an unjust world, and this emphasis on justice forms a central organizing framework for any form of leadership that can be called authentic and sustainable. Such leadership serves real needs of people for material sufficiency, personal dignity, and meaningful and consequential participation in the decisions that affect their lives. Such leadership takes people seriously as subjects in the world rather than conceiving of them as mere tools to be manipulated and controlled in order to serve the ends of a powerful global elite. As Terry states, “Authentic power resists oppression; inauthentic power terrorizes the innocent” (1993, p. 110). Terry’s articulation of authentic leadership specifically asserts that power for its own sake is antithetical to authentic leadership in service to social justice. Ecologically inclusive applications of Terry’s concept of authentic leadership will be explored below as part of a discussion of the integrative aspects of sustainable leadership.

3) Everyone must have access to serve as a leader.

Totalitarian leadership systems are characterized, in large measure, by limiting access to positions and roles of leadership throughout society. In direct contradistinction to Terry’s conception of open, self-correcting leadership (1993, p. 127), totalitarian systems attempt to centralize and control ideas generated within a society about the state of the world, both as it is and as it should be. Totalitarian systems are inherently unjust and unsustainable in that they remain unresponsive to what’s really going on and, instead, seek to dictate a given reality into existence. The modern capitalist economy as described above is totalitarian. Totalitarian systems
both refuse to actively promote the potential for leadership throughout society and also refuse to respond authentically in service to the people. In taking these actions, totalitarian systems can sow the seeds of their own destruction since forms of oppression that negate the value of people invariably generate social resistance, and often violent action.

In order to move toward sustainability, authentic leadership systems, in contrast to totalitarian leadership, must offer paths to differential authority that are open to everyone in a given society. This claim derives from John Rawls’ conception of social justice as articulated by Ian Barbour (1993, p. 37). As a principle for leadership, this notion contradicts totalitarian tendencies to attach political offices and powers to hereditary lines and to social ranks and categories from which many are totally and indefinitely excluded. Totalitarian leadership embodies and solidifies hierarchies consisting of paths to power that are unassailable and hopelessly remote to the vast majority of people. Kingdoms and dictatorships come to mind, but even nominal democracies and “free” markets can be totalitarian in these respects.

In order to maintain open paths to leadership and to encourage broad political participation and the development of leadership potential throughout society, differential authority should change hands periodically. Although monarchies and dictatorships that are more benevolent than some democracies today may exist and certainly have existed, perpetual concentration of power can be dangerous, particularly within the context of modern capitalism where power most naturally manifests in manipulation and exploitation (Marcuse, 1964). In order for any society to be benevolent in comparison to modern capitalist societies, the people need to exercise meaningful control over key aspects of their own lives. In any comparatively just and sustainable society, authentic leadership must be active throughout society on multiple levels.
Such was the case within the kingdom of Ladakh before it was subsumed under Indian government rule, and it remains the case to some extent today although Ladakh is increasingly becoming entangled with the modern capitalist world (International Society for Ecology and Culture, 1993; Norberg-Hodge, 1991/1992). In traditional Ladakhi society, leadership that meaningfully shaped the lives of people was developmental, small scale, and local. It also was decidedly not abstract in that the Ladakhi people, in order to prosper in their isolated and demanding environment, exercised an ecological leadership of place that emphasized reciprocal practices of working directly with nature and each other.

Many indigenous traditions of recognizing the leadership of elders offer examples of leadership that are characteristically open to all who attain the proper level of experience as evidenced by age. Authentic leadership of elders would also remain open and responsive to the voices and concerns of youth.

4) Leadership must be actively developed in everyone in a sustainable society.

In keeping with the idea that leadership must authentically engage in transforming the inauthentic in ourselves and the world and building upon the idea that paths to leadership must be open to all, leadership should be actively developed in everyone in ultimate service to sustainability. Nurturing the authentic leadership capacity in all people involves cultivating people’s critical thinking (Brookfield, 1987; 2000) and related transformative capacities (Mezirow, 2000). The critical thinking advocated by Brookfield (1987; 2000) and the transformative learning advocated by Mezirow (2000) are both firmly anchored in the essentially Freirian (1970/2000) practices of naming the world and transforming the self and the world through praxis. As we have seen, these practices also form the foundations of authentic leadership as articulated by Terry (1993).
The faith of these authors in the power of average people to create meaningful and beneficial change in the world also articulates well with Paul Rogat Loeb’s argument, presented in his book *Soul of a Citizen: Living with Conviction in a Cynical Time* (1999). Loeb argues that leadership is *learned*, step by developmental step, when properly nurtured and supported in community (chap.3). For Loeb, leadership is not *inborn*; it is therefore a possibility for all. Fostering the potential for learning authentic leadership ought, therefore, to be a central aim of sustainability education, and this education need not – in fact should not – be limited to institutional contexts.

5) *Sustainable leadership is integrative and ultimately place-centered.*

To lead sustainably, we must act from an ecological worldview, in full recognition that everything is connected to every other thing and that what goes around does indeed come around. If we want to live meaningful lives and enjoy the respect of others, we must recognize the meaning inherent in other people and in nature, and we must honor the integrity and the lifeways of all others, both human and nonhuman. I believe this living reciprocity is what Jeannette Armstrong has in mind when she describes the Okanagan experience of bonding with ancestral homelands:

As Okanagans, our most essential responsibility is to learn to bond our whole individual selves and our communal selves to the land. Many of our ceremonies have been constructed for this. We join with the larger self, outward to the land, and rejoice in all that we are. We are this one part of Earth. Without this self we are not human: we yearn; we are incomplete; we are wild, needing to learn our place as land pieces. We cannot find joy because we need place in this sense to nurture and protect our family/community/self. The thing Okanagans fear worst of all is to be removed from the land that is their life and their spirit. (1995, pp. 323-324)

As suggested by Armstrong, social bonds and bonds between people and nature are most effectively understood and enacted within the context of real places that offer a shared context of community and nature extending over long periods of time. In such communities, actions and
ideas – and the benefits and consequences of these – are most immediately known and visible (Armstrong, 1995; Shuman, 1998/2000, p. 8).

Centering sustainable leadership in place does not, however, mean that we should wall ourselves off from the world or disregard distant or global environmental and social problems. To extract ourselves in such a way from the world as a whole would be unspeakably irresponsible given our current global realities. Global capitalism has created an unhealthy interdependence – a *codependence* from which it will be difficult to extract ourselves and our communities unscathed. In order to name this world and transform it, even by (re)localizing, we must fully know this world. We must know what we are up against and, to the best of our ability, think through the ramifications of our local actions in a world where everything has indeed been made to affect every other thing within perhaps the most unhealthy system of interdependence possible. Authentic and sustainable leadership must address the realities of globalization while simultaneously creating place-centered communities. Terry recognizes this need for a comprehensive approach to authentic leadership. He notes that, if we are to embody authentic leadership, we must seek to be inclusive of a broad and deep understanding of and intimacy with the world: “Comprehensiveness is the most inclusive quality of meaning. It seeks to add depth of insight, celebrate wisdom, and in its creation of meaning, affirm the joy and tragedy of existence” (1993, p. 227). To move this world toward sustainability, we must engage with it, not recoil from it. This engagement should, in large measure, take the form of place-centered praxis that consciously and simultaneously contributes to socio-ecological sustainability on a global scale.
Sustainable leadership’s relationship to the critical pedagogy of sustainability.

Sustainable leadership is rooted in counterhegemonic praxis. It is intimate, and it is expressed in the healthy reciprocity and the profoundly meaningful and affirmative power of leadership as service rather than domination. Sustainable leadership can embody the best of human agency and praxis. The following quote from Terry (1993) powerfully expresses the character of sustainable leadership:

Leadership brings no answer to the table. It does come with questions and a disturbing sense of unease. Leadership is triggered by an unnerving experience of disconnection and inauthenticity. Leadership uses all its framing tools yet still faces the dilemma of action. It confronts an abyss of unknown consequences and obligations in any action it does take. The ripple effects of action are so vast and complex that no computer or cost-benefit analysis can totally analyze them. Duties often conflict; ethical choices are usually not made between right and wrong or good and bad but between conflicting rights and goods. Yet in spite of these daunting realities, leadership lays claim to its responsibility. (p. 260)

Sustainable leadership, furthermore, must be anchored in authenticity and be open and accessible to all, and everyone should be supported and nurtured in the process of developing her/his own leadership potential. Sustainable leadership should specifically aim to create and nurture reciprocal, sustaining relationships among people and between humans and nature. Such leadership would expose the contradictions of exploitive leadership that is ultimately self destructive.

The critical pedagogy of sustainability seeks to foster authentic leadership among all people in service to sustainability. Doing so requires critical pedagogues to both teach and directly engage in authentic leadership practices so that the processes of education themselves embody sustainability.
The critical pedagogy of sustainability works through educational processes that are themselves embodiments of sustainability. It is, therefore, sustainability as education.

We now turn from discussing the profound irony of (re)casting and fostering leadership in service to sustainability to a related contradiction within critical pedagogy itself: the need for counterhegemonic leadership within the higher education classroom. This contradiction involves problems of how to make the classroom experience more democratic and open to students as participants in educational praxis while simultaneously engaging in praxis that is counterhegemonic. In a situation where hegemony (Gramsci, 1971/1999) and repressive desublimation (Marcuse, 1964) thoroughly colonize the worldviews of many, if not most, students in higher education in the U.S., sustainability educators are faced with a set of imperatives that are mutually exclusive.

As I argue above,

1) Critical teaching must be counterhegemonic and oriented toward (re)vitalization of the concept of place and place-based living,

2) Hierarchical modes of organization and leadership contribute to unsustainability and, therefore, must be replaced with more sustainable forms of social organization and decision-making, and

3) Critical teaching calls upon students to name the world (Freire, 1970/2000, p. 88) and not for the teacher to name it for them (a process that would reinforce hegemonic patterns of domination and oppression).

Sustainability educators, therefore, are caught in an untenable bind. How can one work both counterhegemonically and democratically with students whose worldviews have been so heavily colonized that their common sense opinions and ideas tend to reinforce the status quo? (See Brookfield, 2005, pp. 205-209, and Marcuse, 1964). As if this contradiction were not enough
with which to grapple, the grading system and other aspects of teacher authority built into most higher education institutions exacerbate the quandary of the educator regarding authentic, sustainability-oriented educational praxis.

The critical sustainability educator faces a quandary with regard to engaging in counterhegemonic critique while simultaneously fostering democracy in the classroom. This quandary is illuminated in Habermas’ (1984) theory of communicative action. At the center of Habermas’ (1984) theory is the presumed possibility for people to engage in authentic discourse through ideal speech acts which, by their very nature are aimed at negotiating truth through discourse. Communication must pass four validity tests if it is to be considered authentic: that the claim is true, comprehensible, and sincere, and that it is right for the speaker to make the claim (Carr & Kemmis, 1986, p. 141). The prerequisite for authentic discourse as a foundation for democracy is the possibility and desire for people to forego, in order to communicate rationally, the use of speech as an instrument to gain or reinforce one’s power over others. According to Habermas, only through satisfying this precondition, can discourse be truly inclusive and aimed at truth rather than securing power (Carr & Kemmis, 1986, pp. 140-144).

The theory of ideal speech is embedded in Habermas’ theory of critical praxis for democracy (see Brookfield, 2005, chap. 9). The possibility of authentic discourse is also foundational to Freire’s (1970/2000) pedagogy of the oppressed since authentic discourse is prerequisite to grassroots educational praxis that eliminates rather than mirrors themes of domination and oppression present in globalized societies. Authentic educational praxis would, therefore, involve students in every phase of praxis within a course, including planning curricula. But it takes time, trust building, humility on the part of the professor, and intellectual and emotional effort on the part of both the professor and the students to bring students to the point
where they are ready and able to critically examine their own assumptions and beliefs as, in large measure, products of a hegemonic global culture of corporate capitalism (see Brookfield, 2005, chap. 7). Freire (1970/2000) states the problem thusly:

The central problem is this: How can the oppressed, as divided, unauthentic beings, participate in developing the pedagogy of their liberation? Only as they discover themselves to be ‘hosts’ of the oppressor can they contribute to the midwifery of their liberating pedagogy. (p. 48)

And so, the question of how to engage sustainably in sustainability education remains.

In working toward resolving this contradiction, it is helpful to recognize its idealist/materialist construction. Habermas’ theory of ideal speech acts is an idealist formulation because it rests on the premise that consciousness determines being. The contradiction to actualizing ideal speech is generated in the realm of the material, in the realm of lived experience, where, as materialists argue, being determines consciousness through direct experience with the realities of oppression and exploitation (or power and privilege) combined with hegemony. As we discussed in chapter two, Gramsci (1971/1999, p. 369) argues that ideas and theories are also part of the everyday experience of people in the same way as material circumstances and hegemonic constructions of power. For Gramsci, both being and consciousness interact dialectically to inform praxis. Counterhegemonic thinking that contradicts the realities of the lifeworld therefore exists and is a possibility wherever hegemony also exists.

It is from this foundation for praxis that the sustainability educator must work – engaging students with transformative, counterhegemonic ideas (see Brookfield, 2005, chap. 7), engaging them in transformative action, and calling upon them to reflect upon their experiences with the hope of furthering their praxis.

In the remainder of this section, I explore possibilities for authentic sustainability education. I propose that teacher authority relative to students is both unavoidable within higher
education classrooms and that, even while assuming the responsibility of this authority, sustainability educators can meet the criteria for sustainable leadership outlined above. Still, the sustainability educator must remain vigilant in order foster student agency for sustainability and to avoid, to any extent possible, reinforcing the blind compliance of students in the face of authority.

If higher education is to hold and actualize new visions for a sustainable future, it must be education as sustainability. Rick Medrick, Program Director for the Ph.D. Program in Sustainability Education at Prescott College, has written an essay (2005) outlining principle values and practices of education as sustainability. According to Medrick (2005):

> Education as sustainability explores the theories, processes, and conditions through which individuals, groups, and organizations learn and transform in ways that support a sustainable future …. It is essentially transformative, constructivist, and participatory. It is also integral … in that it seeks to incorporate as many insights and perspectives from as many disciplines as possible to understand events, experiences, and establish contexts …. It is also essential to incorporate education for sustainability into this investigation, exploring human impact on the natural environment as well as the influence nature has on humans. (p. 1)

According to Medrick, education as sustainability seeks to integrate disciplinary knowledge and practice, to understand the mutual interactions between humans and nature, and to respectfully engage in dialogue with diverse people with the understanding that no one person or group has all the answers to pressing socio-ecological problems. Sustainability as education embodies a relatively egalitarian conception of leadership, an openness to diverse knowledge and ways of knowing, a prioritization of values in which economic wellbeing is only one among multiple important values, a conception of humans as part of the natural world, and an emphasis on praxis as essential to effective education (Medrick, 2005). All of these ideas are atypical within both modern capitalist value systems and modern higher education.
In his definition of sustainability education as “essentially transformative, constructivist, and participatory” (2005, p. 1), Medrick’s conception of this work correlates with the pedagogy of other well-known critical educators. Among these educators, there is widespread recognition of the value of generating inquiry and content from among the students themselves, thereby subverting through educational praxis the themes of authority of instructors and subservience of students that are typical in educational settings of the industrial world (Brookfield, 1987; Freire, 1970/2000; Mezirow, 2000; Mezirow & Associates, 2000). These democratic practices also reveal possibilities for making education less standardized and abstract as it is directed to serve the interests of the students at hand and address their particular situations – aspects of critical praxis that render it highly adaptable and suitable to place-centered education.

Therefore, as critical educators, the outcomes related to what we teach derive heavily from the way we teach. We should not attempt to simply impose new sustainability goals upon students. To do so would represent an inauthentic, and therefore unsustainable, form of leadership. Such action would replace one form of passively received indoctrination with another. This indoctrination process likely would not generate many new commitments to widespread, authentic sustainability praxis among students, particularly because students would not be engaging in praxis as part of the learning experience. And it is praxis that is needed to dislodge entrenched powers and (re)create vibrant, resilient communities better prepared to face turbulent socio-ecologically and economically challenging circumstances. In order to create such change, the students must generate the change, which is the power of Freire’s (1970/2000) pedagogy.

In my experience as a professor, if students were to shape the processes of inquiry and the thematic content of my courses, they would be unlikely to take a strongly counterhegemonic
approach to examining the world-system. After all, students bring the contradictions of the world with them into the classroom. Therefore, most are predisposed to act unconsciously to preserve the status quo with regard to social power and social systems, unless they are presented with cogently developed, deep, integrative, critical arguments elucidating the social contradictions that are the sources of oppression and exploitation of people and planet. These arguments are best developed over time through multiple readings and discussions in a process on which I elaborate below.

In my experience, a couple of students, if that number, in a class of 20 to 35 come to class hungry to engage in counterhegemonic discourse from day one. Most would rather avoid considering deeply held assumptions, some are frightened and/or deeply disturbed by what they learn through the process of doing so, and a few are outright hostile to examining the foundations of their own views. I believe that the time students spend doing course readings, engaging in class discussions, and writing analytical reflections related to course content are, for most students, a necessary precursor to critical praxis. By presenting alternate ways of viewing what was taken for granted, these activities begin to prepare students for the work of re-visionsing and re-creating their own worldviews – and the world itself. I find that many of my students – especially those who are freshmen and who are mostly traditional age for college seem to have been very sheltered, at least regarding capitalist exploitation within the world-system. They typically have not developed a deeply critical self and social consciousness, a form of personal development that is not generally valued in capitalist society. Brookfield (1987) offers an explanation of why the process of beginning to think critically is both threatening and empowering for such students:

Asking critical questions about our previously accepted values, ideas, and behaviors is anxiety-producing. We may well feel fearful of the consequences that might arise from
contemplating alternatives to our current ways of thinking and living; resistance, resentment, and confusion are evident at various stages in the critical thinking process. But we also feel joy, release, relief, and exhilaration as we break through to new ways of looking at our personal, work, and political worlds. As we abandon assumptions that had been inhibiting our development, we experience a sense of liberation. As we realize that we have the power to change aspects of our lives, we are charged with excitement. As we realize these changes, we feel a pleasing sense of self-confidence. (p. 7)

Though I see a preparatory stage of teacher-led engagement with counterhegemonic thinking as necessary for critical pedagogy, it is not democratic. When I engage students in this way, I must do my best to help them use written and verbal analysis and reflection to think independently so as to reinforce as little as possible any existing, culturally ingrained tendencies toward blindly following authority figures. This practice does not eliminate the leadership dilemma of critical praxis, but it may reduce the negative impacts of departing from grassroots praxis, and it does counter the effects of “banking” education as defined by Freire (1970/2000).48 Following is a description of some typical practices I employ to help students think both critically and independently. I have employed these practices in both upper and lower division courses that revolve around themes of sustainability.

During the first week or two of class, I flat out tell students that I am not neutral and explain the impossibility of neutrality. I also tell them that I do not expect them to just believe whatever I say or concur with everything I do, and I do my best to model this openness in class discussions and in constructing and grading written assignments. In my upper division End of Oil class, for example, I invite students to analyze and question well researched texts and to listen to diverse views. I point out some of the central claims being made in course texts and ask students

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48 In banking, the teacher assumes virtually unassailable authority while student participation takes the form of unquestioning submission to that authority. Freire (1970/2000) describes banking as a process in which students passively an uncritically receive information from teachers and do not question the validity of the information or the authority of the teacher: “Education … becomes an act of depositing, in which the students are the depositories and the teacher is the depositor. Instead of communicating, the teacher issues communiqués and makes deposits which the students patiently receive, memorize, and repeat” (p. 72).
to be cognizant of the arguments that will be developed to support the given claims. I ask students to consider to what extent the author is/is not successful in developing his/her supporting arguments and to consider how the given claims and arguments apply to real life situations so that they can “test” the truth of authors’ arguments through their application to examples outside the text. I believe this highlighting of claims and supporting arguments helps students understand that truth is contingent and that, based on the soundness of a given discussion and on its applicability to the world as they know it, they may accept all, part, or none of a given argument. Meanwhile, I do my best to expand the world as they know it by engaging them through films, reading, and discussion in a counterhegemonically informed exploration of the development of globalization, with special focus on the legacies of colonialism and the post-war world-system. This exploration addresses the Bretton Woods systems and institutions, neoliberal economics, oil dependency, and fossil-fuel-dependent development patterns, including suburbanization and the Green Revolution.

Throughout this process, I assume little to no counterhegemonic knowledge of history or the social and economic injustices of the capitalist world-system. I therefore hold students responsible for analyzing material only within the framework of ideas developed to that specific point in the class. If a student raises a question or makes a point that will be addressed later by an author the class will read, I reference that work and say that author X will address that very idea later on by either supporting or critiquing the idea/question offered by the student, and I invite the student to listen to that author’s points later on and consider them within the framework of his/her evolving knowledge base. This process helps the student see that s/he is capable of asking questions that scholars ask and that s/he is also capable of evaluating responses to those questions.
Working in an atmosphere where I must grade the work of students creates additional contradictions for me as a critical educator because the practice of assigning grades is highly authoritarian. Furthermore, deciding the relative value of each student’s work is a highly questionable process that, in most cases, adds to the cumulative effects of past support and approval or rejection and neglect of students as learners and people. When I say, as I do, that I am looking for depth of thought in students’ essays, how can I truly determine when a student has made a significant move toward depth of thought as compared to her/his past thought and expression? While it is true that, later in the term, I do have a chance to compare each student’s work to his/her previous essays for the course and to see whether or not there has been some movement toward depth and comprehensiveness of analysis, I still have very little to go on in making these judgments given that the duration of one term offers only a small window into the life of a college student and her/his personal experience and growth. If I give everyone high grades, then the students, motivated as they are in many cases by competition, are likely to stop applying themselves to the task of learning since they would perceive little advantage for doing so in terms of the reward system of grades.

In order to do my best to encourage students’ agency in the face of the judgments I am required to make on their written work, I strive to treat the act of grading as, at least in some respects, a conversation. I respond to their work with questions and with comments that build upon and/or offer additional sources relevant to the claims they make. I do my best to encourage new areas for inquiry and to propose new lenses for analysis of ideas and historical realities as presented by each student. This process by no means resolves the contradiction of grading as a component of sustainability education. It does, however, open conversation in addition to offering judgment, rather than offering judgment alone. We certainly need more conversation.
about important issues and contradictions in our world, conversation that can serve as an aspect of critical praxis, and I see this form of grading as a humble start.

In terms of student participation, which I include in the grading process, I inform students on the first day of class that I do not use quantity of talking as the basis for determining participation. I note that listening and thinking are also important forms of participation that we need to value more than we generally do. I state that small group participation is just as important as participation in full class discussions, and I note that I myself was very shy indeed about talking in class when I was an undergraduate. In order to grade participation as fairly as possible in the context of these guidelines, I take attendance daily. Doing so can seem petty and childish, even to me, but if I do not know who is in class on a regular basis, I will tend to best remember those who talk frequently regardless of the depth and comprehensiveness of the insights they offer. Taking attendance seems to me to be one means of gauging student commitment to the individual and collective learning process, though of course, this method is far from perfect for doing so.\footnote{bell hooks is known to take attendance for similar reasons (Brookfield, 2005, p. 330).}

Perhaps the centrally important feature of my critical teaching is that I do not hope to gain power over my students from the teaching process. I hope to empower them. In this way, my critical teaching is akin to the concept of servant leadership articulated by Greenleaf (1970/1991). Greenleaf’s concept of the servant leader coincides well with the critical pedagogy of sustainability in that the servant as leader engages in leadership in order to serve others, not to exhilarate in the experience of domination.

Although the practices outlined here do not by any means allow me to transcend the contradictions inherent in sustainability education in a colonized world, I believe my work calls upon students to engage in important preparatory work that may stimulate their engagement in
authentic praxis in my courses and/or at some other point in their lives. I concur with Brookfield (2005) who states that
teaching in a manner informed by critical theory is … teaching that is inherently political. It is political because it is intended to help people learn how to replace the exchange economy of capitalism with truly democratic socialism. It is political because it makes no pretense of neutrality, though it embraces self-criticism. It is political because it is highly directive, practicing … a pedagogy of ethical coercion. (p. 351)

Even given my own experience working in higher education settings typified by centralized, hierarchical decision-making, assigning of grades to student work, and teacher authority in designing curricula and managing the classroom, I still see possibilities for classroom leadership by sustainability-oriented professors as a form of sustainable leadership that drives toward creating reciprocal, mutually nurturing, sustaining relationships among people and between humans and nature. Teacher authority can be used toward sustainable ends and be anchored in a concept of authenticity rooted in a counterhegemonic reading of the world. Although the differential authority enjoyed by the teacher is not generally accessible to students, learners can be given the opportunity to voice their own readings of the world in various contexts such as small group discussions, full class discussions, and analytical/reflective writing.

Brookfield (2005, chap. 5) notes that, given their life experiences and acculturation to capitalist values, students may interpret activities such as class discussions to be a competition rather than an opportunity for authentic communication. Metacommunication about the purposes of course activities may alleviate the drive to compete for some students – or for others, it may simply frame the perceived competition differently. There is only so much the professor can do to lay the groundwork for students to engage authentically in naming the world. The professor can model socio-ecologically just leadership in the form of servant leadership and do the best that s/he can to encourage her/his students to learn to lead. Finally, sustainability educators can
engage students in integrative and place-centered service learning experiences with the goal of opening a window on praxis. Sustainability educators can, therefore, practice sustainable forms of educational leadership.

As a sustainability educator, I will continue to draw heavily upon critical pedagogical theories while at the same time recognizing that these theories cannot fully resolve the contradictions inherent in sustainability education. I am grateful for the insights articulated by critical pedagogues such as Freire, McLaren, Jaramillo, Farahmandpur, Brookfield, Grande, and Mezirow, and I take seriously the possibility of education leading to personal and social transformation. At the same time, I recognize that the methods I use today as a sustainability educator embody contradictions. I believe these methods are necessary given our current social situation globally, but their use jeopardizes authentic praxis by introducing authority and control mechanisms into the classroom. Still, I believe that I must do what I can within my particular situation, informed by both theory and my own intuition, in order to work toward a more sustainable world.

I also propose that, for transformations achieved by students engaged in critical inquiry to persist and continue to evolve over time, students need more than a class or even several classes in which they work with ideas alone. Ideally, for critical learning to become a lifelong process, students need to become engaged in praxis within or beyond the academy. Such long term engagement is much less likely to occur absent an organic crisis of capitalism and/or a global sustainability crisis that can drive social change in response, not only to ideas, but to immediate material circumstances. The fact that both crises are upon us now represents a historic opportunity – as well as the potential for widespread socio-ecological destruction. Until such time as these crises may deepen and force social change, I advocate for the critical pedagogy of
sustainability as an important incarnation of counterhegemonic praxis. I also advocate service learning as an effective pedagogical method for sustainability education. We will now explore how service learning can contribute to sustainability education praxis.

_Service learning through local food projects can embody praxis in the critical pedagogy of sustainability._

I have my doubts that a strictly idealist critical pedagogy of sustainability, even one that works powerfully with powerful ideas, can fundamentally alter the worldviews of most students in the U.S. The classroom is only one part of the praxis continuum in a world where hegemony infuses all aspects of the lifeworld. One or two courses is probably not enough to provoke a radical departure from the way one has interacted with family and friends or to cause one to fundamentally redirect one’s values, life goals, career orientation, relationships, and/or lifestyle. In cases where one’s identity and day-to-day reality radically differ from what one has learned in a counterhegemonically-informed classroom, the student will have a difficult time integrating his/her everyday and classroom experiences, and when the classroom experience has ended and becomes less present in her/his mind, budding counterhegemonic aspects of his/her worldview can simply die on the vine. I believe this distancing from counterhegemonic thought is most likely to occur in relatively wealthy societies where more subtle forms of oppression characteristic of repressive desublimation create widespread support for the capitalist system (Marcuse, 1964). In such an atmosphere, it is just so much easier to go along with everyone else, even though one’s freedom, including freedom of thought, is progressively circumscribed through the systemic material traps and communication gaps that reinforce the logic of capitalist accumulation and economic growth and reduce relationships to essentially commercial transactions (see Fromm, 1956).
The typical length of time devoted to individual classes in the academy also does not approach the length of time necessary to developing the in-depth relationships among people and with places that are foundational to sustaining deep processes of sustainability-oriented social change. People need to be involved with long-term sustainability projects in order to change ingrained cultural patterns, economies, and philosophies, and the higher education classroom does not generally provide a venue for such projects. Critical educators in college and university settings in the U.S., therefore, face significant challenges as we work toward social change that extends beyond the classroom in both space and time.

If, as I have proposed, generating widespread sustainability-oriented praxis is the central goal of the critical pedagogy of sustainability, students need to do more than think about what the action component of praxis involves. For many who have grown up in suburbia not even knowing their neighbors, involvement in community work of any kind is likely to be unfamiliar and at least somewhat personally challenging (see Loeb, 1999). Students who experience at least some community engagement as part of a course are more likely to continue to engage in such practices both in- and outside the academy (Astim, Vogelgesan, Ikeda, & Yee, 2001), and these experiences help them learn to take more effective leadership roles and to see themselves as more able leaders (Newman, Bruyere, & Beh, 2007; Astim et al., 2001). Alumni who had engaged in sustainability-oriented service learning at Allegheny College also reported enhanced cognitive development and improved communication skills as a result of their service learning experiences (Keen & Baldwin, 2004). Based on research studies and my own experience as a

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50 Loeb’s (1999) *Soul of a Citizen: Living with Conviction in a Cynical Time* is an important text for helping students move from study to action and for helping them to consider action itself as a continued learning process. Loeb’s concept of the “perfect standard” (the idea that activists should be perfectly consistent and correct in their convictions and actions) as an action-inhibiting judgment often applied to activists is important to discuss with students who are or who hope to become engaged in social action. Loeb also does an excellent job of demonstrating how people must learn activism and leadership step by step and with the support of others. These points are important to share with students involved in service learning work.
sustainability educator, I believe that when students have an opportunity through coursework to build personal relationships within a community of practice and to apply their counterhegemonic learning through engagement in community projects and political struggles, they are more likely to engage in lifelong praxis. Such involvement can open a whole new world for students in which their praxis grows and deepens over time. I have witnessed this process occurring among some Environmental Studies students in my Community Internship class who, after a great deal of time working on an issue or project and a considerable amount of required reflection on how that work relates to their personal commitments and goals, become emotionally and intellectually attached to their work so that they continue their relationship with it, and with others who are similarly involved, even beyond their internship course.

Of course, this depth of attachment is difficult to foster in courses such as my End of Oil course that have large numbers of students (as many as 35) and a great deal of critical conceptual material to cover. Still, I believe students benefit from at least some counterhegemonically-informed sustainability work in the community as part of these courses because such involvement provides at least an example of how community work can be rewarding and enjoyable and how it can relate to learning. In chapter seven, we will explore student views on the service learning component and other aspects of their experience in The End of Oil course.

Local food projects can be an excellent choice for service learning as part of the critical pedagogy of sustainability because these projects

- Embody multiple aspects of sustainability-oriented praxis,
- Can easily be linked with counterhegemony through class discussion and reflection,
- Are generally at least somewhat fun and can take place in beautiful places or places that are in the process being made beautiful,
• Help generate emotional connection to cyclical and long term processes of nature by tapping into natural cycles of growth, death, and decay,

• Emphasize the importance of (re)inhabitation of place in both its social and environmental aspects, and

• Can occupy large numbers of people at work at one time.

As noted in chapter five, local food projects are also particularly important in the context of the emerging peak oil and gas crisis which threatens to destabilize and ultimately bring an end to industrial food systems, and they represent progress toward addressing the broader socio-ecological crises of industrial agriculture.

My advocacy of service learning – a pedagogical method that includes conceptual learning in the classroom, action in the community (which can include the campus community) that is related to conceptual learning, and structured reflection on the relationships between classroom and experiential learning – is common among sustainability educators (Keen & Baldwin, 2004; Ward, 2006). In “Sustainability as Emergence: The Need for Engaged Discourse,” Bawden (2004) argues that institutions of higher learning have become reluctant to engage with civil society in actually solving problems of sustainability – problems that may be the subject of research at these same institutions. He makes a related point in stating that higher education has become abstracted from the societies it hopes to serve. He also notes that knowledge generated by the academy is often disconnected from values. In response to these failings, Bawden (2004) advocates developing communities of practice within the academy and linking these communities directly with processes of critical social learning aimed at addressing the pressing issues of sustainability. Bawden advocates engaged scholarship and a revised and revitalized role for colleges and universities as leaders and participants in sustainability-oriented
communities of practice. M’Gonigle and Starke (2006) advance similar arguments in *Planet U: Sustaining the World, Reinventing the University*. These authors argue that institutions of higher education should serve socially revolutionary roles in service to sustainability.

If (re)creating localized, sustainable social and economic systems is an emerging necessity (see Douthwaite, 2004, and McLaren, 2005, pp. 54-56), as I believe it is, the critical pedagogy of sustainability clearly has roles to play in helping students to understand the social forces and interests that brought us to this point of necessary transformation. Higher education also has a role to play in collaboratively creating new socio-ecological realities through praxis (McLaren, 2005, pp. 57-58). McLaren (2005) calls for deeply counterhegemonically informed action as an ultimate goal for critical pedagogy, saying “the larger goal revolutionary critical pedagogy stipulates for radical educationalists involves direct participation with the masses in the discovery and charting of a socialist reconstruction and alternative to capitalism” (p. 59). I concur with McLaren in stating that, at its best, sustainability education involves critique as well as meaningful action within a community setting. As I argued in chapter four, the land, as both context and participant in this transformational process, provides a container within which systems of reciprocity can be observed, established, and lived and where responsibilities to humanity – to one’s neighbors – are immediately clear rather than abstract (see Armstrong, 1995; Kemmis, 1990; Martinez, 1997; Shuman, 1998/2000; Summers & Markusen, 1992/2003). I aspire toward these outcomes in my critical pedagogy of sustainability, and as noted in this section, many factors mitigate against their full realization.

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51 Here, I use the term “land” as Aldo Leopold (1949/1987) does in his “land ethic” to mean all creatures and living and nonliving systems that are an ecosystem. This is also the usual traditional notion of “land” as explained by Okanagan tribal member, writer and environmental activist Jeannette Armstrong in her “Keepers of the Earth” (1999).
We now turn our attention to transdisciplinary aspects of the critical pedagogy of sustainability.

The critical pedagogy of sustainability is inherently transdisciplinary.

After reading a number of sources on transdisciplinarity (Dölling & Hark, 2000; Klein, 2001; Lenhard, Lücking, & Schwechheimer, 2006; Meyer, 2007; Nicolescu, 1999, 2002; Schroll & Stærdahl, 2001), I developed the following definition of it for a faculty committee on interdisciplinary programs at my institution:

Transdisciplinary studies, research, and action focus attention on thematic threads that inform complex, real-world issues and challenges such as globalization, climate change, and sustainability. Transdisciplinary scholars and practitioners engage with these issues and challenges using integrative approaches to knowledge-making with the aim of transforming the subject(s) of study by informing purposeful human activity. Transdisciplinary research draws upon disciplinary methods of knowledge-making as means to generate and synthesize new knowledge, but transcends the disciplines in its drive to approximate the complex reality of its subjects of study. Transdisciplinary work is integrative, socially relevant, and oriented toward problem solving. Therefore, transdisciplinary work engages with human values in producing knowledge and identifying avenues for action. Thematic threads that draw the attention of transdisciplinary scholars and practitioners run across diverse sectors of society and differing loci of knowledge creation and use. Transdisciplinarians seek to identify, integrate, and act upon points of relationship among centers of knowledge-making as these relate to ideas and phenomena that manifest in complex ways across diverse sectors of society. Transdisciplinary work is relevant to and contextualized within the full complexity of the real world. This work entails an ontological perspective of the world as integrated, complex, and whole. Transdisciplinarians therefore seek to integrate perspectives and knowledge originating both inside and outside academe and to deal with epistemological questions of the validity of knowledge created in various contexts. Transdisciplinarity therefore implies a critique of the idea that valid knowledge is created solely within disciplinary boundaries and within academe. Since boundaries within knowledge making are both questioned and crossed by transdisciplinarians, transdisciplinary work also implies a critique of the ‘ivory tower’ conception of academic work as a ‘pure’ form of knowledge creation rightly detached from messy real world contexts. Transdisciplinary work, by contrast, seeks explicitly to engage with the real world and derives its character and relevance from this engagement. Transdisciplinary work is distinguished from interdisciplinary work by its engagement with human values within problem solving contexts.
The critical pedagogy of sustainability is clearly transdisciplinary in character and, therefore, like many forms of critical pedagogy, serves as an important locus for confronting forms of educational specialization that divorce knowledge creation and technological innovation from their social contexts. These fragmenting forms of teaching and research, addressed earlier in this chapter, are easily directed toward serving hegemonic interests.

An important aspect of transdisciplinarity, an aspect that articulates well with counterhegemony, is its concern with epistemology (the processes of knowledge making and of determining the relative validity of knowledge making processes themselves as well as the validity of articulated knowledge). Critical examination of epistemological frameworks is essential to sustainability in that our very conceptions of ideas and practices that are true and valid are hegemonically informed, and in many cases, these notions inform unsustainable actions and processes. Questioning epistemologies is, therefore, central to both transdisciplinary work and counterhegemonic praxis. Sustainability educator John Huckle (2004) asserts the importance of what can be described as a transdisciplinary approach to sustainability education, an approach that emphasizes the importance of a critical orientation toward praxis:

This chapter argues that the key requirement of institutions and courses that seek to educate for sustainability is a philosophy of knowledge that integrates the natural and social sciences and the humanities, accommodates local knowledge, supports critical pedagogy, and continues to regard education as a form of enlightenment linked to a vision of a more sustainable future. (p. 34)

Since unsustainability is fueled in part by the compartmentalization of knowledge, spatial distancing between knowledge creators and the applications of their knowledge (a key condition encouraging collective violence) (Summers & Markusen, 1992/2003), dislocation from and disintegration with place, hegemonically informed worldviews, and “rationalization” of the means of production, critical transdisciplinarity like that advocated by Huckle (2004) is an important
aspect of the critical pedagogy of sustainability. Huckle (2004) explicitly applies critical pedagogy to the context of sustainability education and argues for combining analyses of power, politics, and governance with ecologically-oriented concepts of sustainability and environmental health in order to develop a broadly and deeply contextualized understanding of societies and environments as inextricably interrelated and interdependent.

The sustainability crisis is the most pressing challenge of our day. It encompasses interrelated social contradictions that have proliferated into the realms of governance and leadership, socio-ecological health and resilience, social justice, and political economy. It requires dislocation of the global elite from positions of concentrated wealth, power, and control and reorienting production as a means to generate use value rather than surplus value. It requires an end to exponential economic growth and to the socially and environmentally depleting systems of enforced dependency that characterize neoliberal capitalist globalization.

Sustainability requires creation of diverse and locally-adapted (re)inhabitation of place through establishing resilient, socio-ecologically integrated lifeways. If ever there were a time to transcend the proliferating specialization of learning and knowledge making (Nicolescu, 2002), that time is now. Only through a critical, transdisciplinary effort to comprehend and act to avert the sustainability crisis and its many permutations within multiple facets of life can we hope to create truly sustainable socio-ecological systems and communities.

Nicolescu builds his definition of transdisciplinarity on insights from quantum physics that highlight the nonseparable nature of reality. According to these insights, both localized and nonlocalized connections among people, objects, nature, and phenomena actually exist. Ours is an intimate world and universe, whether we recognize it or not. In Nicolescu’s view, the insights of quantum physics point to “one fundamental characteristic of the transdisciplinary evolution of
education: to recognize oneself in the face of the Other” (p. 135). I would say, then, that the critical pedagogy of sustainability – based as it is in transdisciplinary processes and in striving to reverse the damage of capitalism and other forms of exploitation that conceptualize people as objects rather than subjects – is about love. Sustainability calls for us to (re)create intimate connections among people and between people and nature that are relationships of love. If and when we (re)develop lifeways that recognize destruction of the Other, be it destruction of other people or nature, as destruction of ourselves, which in fact it ultimately is, we will at last be able to authentically love ourselves, each other, and nature.

If and when societies rise to the challenges raised by the sustainability crisis, the critical pedagogy of sustainability, as a transdisciplinary endeavor, may increasingly serve to integrate and (re)contextualize learning in higher education. It is my hope and the focus of my pedagogical efforts that higher education does not fail to address the sustainability crisis. If it does, this failure will be embedded in a broader socio-ecological failure of human societies, the dire consequences of which are beyond comprehension.

Conclusions

We began our discussion in this chapter by comparing the organization and outcomes of higher education to reflections in a broken mirror. We explored both the modern sources and socio-ecological products of the fractures, and I proposed a praxis-oriented, critical pedagogy of sustainability as a model for higher education to address the rapidly converging sustainability crises of the late capitalist, globalized world-system.

I propose that, in higher education settings, a critical pedagogy of sustainability that includes service learning represents one important means to generate agency, and long term commitment to that agency, among students. In order to engage in lifelong praxis, people
certainly need both continued social support and continued social learning beyond an initial foray into sustainability-oriented agency, but exposure to an in-depth analysis of the contradictions of the late capitalist world-system, with particular focus on the post-World-War-II period, combined with action projects that begin to create alternatives to the systems critiqued, offers opportunities for generating sustainability-oriented social change.

The purposes and goals of this transformative praxis depart from those dominant in higher education today. This educational praxis involves students in the process of naming the world and defining desired action. It seeks to (re)integrate our fractured identities and worldviews. It is counterhegemonic in orientation so that it directly confronts the political economy of late capitalism and its means of production as primary drivers in the sustainability crisis. It takes a transdisciplinary approach to integrating the academic disciplines and seeks to heal dichotomous and destructive fractures within the modern worldview such as those separating humans from nature and men from women. It seeks to authentically reconnect people with each other and with the land. It embodies both sustainable forms of leadership and sustainability as education. In short, actualizing the critical pedagogy of sustainability would mean revolutionizing higher education (see O’Sullivan, 2004, p. 165). The need for this revolution is urgent. If it is diffused or delayed until the dire consequences of socio-ecological and/or economic collapse are upon us, opportunities for higher education to engage in a sustainability-oriented remaking of the world will have vastly diminished.
Chapter 7: Pedagogy and Praxis in The End of Oil Course

In this dissertation, I have argued for and developed a conceptual framework for a critical pedagogy of sustainability. This pedagogy aims to move individuals, communities, and global society toward sustainability as defined in chapter two. The theory of enforced dependency elaborated in chapter three is key to this pedagogy because it serves as the central conceptual grounding for counterhegemonic critique, on the one hand, and for the praxis of (re)inhabitation, on the other. In this pedagogy, social critique and action based on that critique comprise a unified educational praxis. As argued in chapters four through six, the critical pedagogy of sustainability emphasizes strategies of (re)inhabitation because (re)inhabitation builds community resiliency through (re)localizing the provision of basic necessities while also engaging people in reciprocally nurturing relationships with nature. This pedagogy also teaches and engages in authentic leadership. In the critical pedagogy of sustainability, these emphases form the conceptual framework for student engagement in service learning experiences.

In this chapter, we turn our attention to application of the critical pedagogy of sustainability in my End of Oil course. I will explore the promise and the challenges of implementing this pedagogy, both from the professor’s and the students’ perspectives. Drawing upon final reflective essays written by students in two sections of this course, in this chapter and the final chapter of this dissertation, I will discuss what may and may not be possible in a course that embodies this pedagogy. I believe that offering my reflections upon my own and my students’ experiences may prove useful to other critical educators because my example can help others envision possibilities and constraints of implementing a critical pedagogy of sustainability in their own educational contexts.

I will begin this chapter with a brief discussion of the content and pedagogy of The End of Oil course. I will then discuss the methods I used to examine the final reflective essays written
by students in two sections of the course. These essays serve as an important vehicle for gaining insights about the possibilities and challenges of implementing a critical pedagogy of sustainability in a higher education setting. I will then discuss what I learned through examining these essays and offer interpretations about the implications of my findings for my own pedagogy and for the work of other critical pedagogues. In chapter eight, I then will offer concluding thoughts about the relevance of my findings and interpretations to the development of my pedagogy and to the development of the critical pedagogy of sustainability more generally.

**The End of Oil Course: An Example of the Critical Pedagogy of Sustainability**

I teach The End of Oil at Fort Lewis College, a residential, public, liberal arts college in Durango, Colorado with an enrollment of approximately 3,700 students. The End of Oil is a four-credit, upper division, transdisciplinary course in the College’s Education for Global Citizenship (EGC) curriculum. Every student, regardless of major, is required complete two EGC courses. These courses call upon students to:

- Demonstrate an awareness of the global dimensions of social, ecological, political, economic, or cultural systems.
- Critically analyze the global phenomena, problems, issues, or topics that are the specific focus of the course using diverse cultural perspectives and multiple disciplinary frameworks.
- Identify possible responses to the global phenomena, problems, issues or topics that are the specific focus of the course. These responses may be enacted by individuals, social networks, movements, organizations, governments or other entities (Fort Lewis College).
The typical class size for The End of Oil is 30-35 students. There is little to no budgetary support for my teaching of this course, and there is no course fee that would provide funding for materials and/or travel. I have been able to draw upon small grant funds awarded to my Food for Thought program in order to provide material support needed for student participation in local food projects.

I co-developed this course with my sociologist colleague Janine Fitzgerald in the summer of 2004, and I have taught it 14 times since then. Since we initially developed the course, Janine and I have pursued fairly independent paths in evolving course content, materials, and practices for the sections we teach.

**Course Content, Materials, and Approach**

In this dissertation, I have developed theories of sustainability rooted in counterhegemonic social critique and praxis. These theories – in simplified and abbreviated form and applied to specific energy issues – also serve as the foundation for The End of Oil course. Therefore, the course includes far-reaching and deeply counterhegemonic content. The course explores the following claims:

- Oil depletion is a geological fact that cannot be remedied through technological means alone;

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52Food for Thought is an education and community action project that assists the students and faculty of Fort Lewis College and the residents of the Durango/La Plata County region in meeting the serious challenges of climate change and global peak oil production through creating a stronger and more sustainable local economy, with particular focus on sustainable local food systems. The project teaches students from various classes focused on sustainability in general and sustainable food production in particular how to plant, nurture, and harvest fruit trees. Food for Thought has been awarded several grants that have enabled the planting and fencing of a 100-fruit-tree campus orchard and the purchase of an apple press. Annual fruit tree sales provide a minimal level of support for ongoing activities and the purchase of replacement supplies, such as tarps, shovels, rakes, hoses, apple press supplies, and more, used in local food work. I coordinate this program under the auspices of the FLC Environmental Center. The Food for Thought program demonstrates, that material support necessary for ongoing student participation in local food projects can be minimal, depending on the specific projects in which students engage, and that this support is likely affordable for most other institutions (Evans, 2010).
• Natural limits of physical systems cannot be surpassed through application of human ingenuity and technology;

• Economic theories and the price of oil have no impact on the thermodynamic laws of physics;

• Most political and economic leaders focus their attention on maintaining and increasing their positions of advantage and not on increasing the security, wellbeing, or autonomy of the middle class and the disenfranchised;

• Globalized political economy is a system of enforced dependency that systematically concentrates wealth and power in the hands of global hegemons;

• Corporate power and corporate personhood are hegemonic;

• The growth economy and its debt-based monetary system are unsustainable within the system of earth’s natural limits;

• The primacy of the bottom line in business thinking is dangerous to public and environmental health;

• Individuals routinely participate in behaviors and processes that are collectively violent;

• The concentration of wealth and power nationally and globally is antidemocratic and both politically and economically unstable;

• Globalized political economy is vulnerable to collapse;

• Neoliberal globalization serves large scale business interests, often at the expense of small businesses, communities, and the environment, and even at the expense of national interests;

• The wars in Afghanistan and Iraq embody, in large measure, geopolitical struggles for U.S. control over energy resources and energy resource transport routes;
• The invasion of Iraq by U.S. forces may have been prompted, in part, by the desire of the U.S. to maintain its currency as the sole currency used to purchase OPEC oil;

• Individuals and communities must look out for their own interests in times of energy and economic crisis because leaders are unlikely do this for us;

• Self-sufficiency and self-reliance (at individual, family, and community levels) is a resiliency strategy in a time of great instability in the globalized political economy;

• (Re)localization, especially with regard to basic necessities, can be a useful, long term sustainability strategy for communities; and

• Individual and collective agency can make a difference in the wellbeing of people and communities as we move deeper into global energy and economic crises.

All of these claims were developed in some depth in preceding chapters. They are counterhegemonic because they call into question the purported benevolence of the current globalized political economy and stimulate critical thinking. They also call upon people to limit their support of social systems that enforce dependency, reduce personal and community resiliency, and limit people’s influence on decisions affecting their lives.

Over the years, I have used a number of texts and films for this course. In addition to well researched and argued texts, I have found that the films can carry an emotional immediacy important to student engagement with disorienting dilemmas. We will discuss below students’ emotional responses to the course and the role of these responses in their learning. I have chosen texts that support critical thinking with regard to understanding the causes and consequences of the converging socio-ecological challenges we face. I have also chosen materials that support envisioning and participating in individual and collective action aimed, at a minimum, at

53 A bibliography including current and past course texts and films appears as Appendix A of this dissertation.
mitigating the worst of the problems we face and, at best, at laying the foundations for the creation of a more sustainable society. I have also developed a table of post-war events and developments that I see as key to understanding globalized political economy as a deeply interconnected world-system. This graphical summary portrays the development of enforced dependency within the world-system in a way that emphasizes relationships among seemingly disparate phenomena.54

In chapter six, I discussed my approach to essay assignments and discussion questions, noting that I write prompts and questions so as to avoid assuming students’ agreement with a text or with points made in class. In writing essay prompts, I leave room for students to disagree and to support their disagreement with substantive evidence. I do not, however, support students disagreeing with course material without providing good reasons for their chosen stance. So that students might test course material against their life experience and so that they might draw meaningful connections between the course and their experience, I also often ask students to apply their analysis of a text to their own lives or to extrapolate future scenarios related to their textual analysis.

Because I wish to avoid banking as a learning strategy and to engage students in complex forms of critical thinking, I do not give tests. All assignments involve essay writing, public presentation, and/or taking action based on course content. Essays call for students to respond directly, and in some detail, to course readings and other content, making it difficult for them to do well without having attended class and completed the readings.55

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54 This table is included as Appendix B of this dissertation.

55 Some examples of essay prompts I have used comprise Appendix C of this dissertation.
Classes include some lecture, small group discussions, full class discussions, showings of films, brief student presentations, and presentations of individual or group action projects. Rather than lecturing, I often start with discussion questions related to a reading or film so that I can see the ideas students bring out on their own. As the class discussion progresses, I respond to questions by providing additional comments that expand upon what the students have brought forward. I also discuss any important points that I think students have missed with regard to discussing a reading or a film and provide additional examples related to material discussed. I believe this discussion format encourages student engagement with the material because it is an active rather than passive interaction.

In these discussions, I focus on treating students respectfully and helping them to improve and deepen their understanding of course material. I try very hard not to make any student look foolish in front of the class. When a student makes a statement that seems flawed, I try to build upon what they have offered or gently contradict it by citing evidence to the contrary of the statement made. In an effort to create a safe space for students to discuss controversial and complex material, on the first day of class, I also go through a ground rules setting activity in which the entire class participates. The main thrust of this exercise is the creation of a classroom environment where students can delve into discussion of serious, complex, and often disturbing ideas without feeling personally attacked. I believe the ground rules activity sets a tone of individual and collective responsibility and respect.

Although including action projects as part of the pedagogy of The End of Oil is more demanding with regard to my time and effort than preparing for and teaching more class

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56 Examples of daily class plans can be accessed via my current or most recent End of Oil course website. These materials are linked from my faculty home page at FLC (Evans, 2010, August 23).

57 The one time I skipped this exercise, I later regretted doing so because I believe the comportment of some students in class discussions suffered as a result.
sessions, I include an action project assignment in every section. I believe doing so is incredibly important to the pedagogy of the course because the project calls upon students to engage in action that, presumably, they see as an outgrowth of the critical framing of the course. Students are then asked to reflect upon the action project in relation to course content, thereby completing a cycle of praxis. Since, as I have discussed in previous chapters, I am committed to praxis as a vehicle for urgently needed, sustainability-oriented social change, I am committed in my pedagogy to students engaging in praxis. The End of Oil simply would not embody the critical pedagogy of sustainability without the action project.

Critical educators should, however, harbor no illusions about the ease or rewards of including such projects in their courses. Action projects always include elements that are somewhat chaotic and unpredictable, especially when students choose their own projects or when the professor is organizing a great number of students to participate in a group activity. Furthermore, with regard to the faculty member’s evaluation as a professor, engaging students in service learning is often considered less valuable than focusing on traditional scholarly research. Such has certainly been the case in my own experience. So, one must typically be willing to forego formal recognition for this work, and in some cases, one must be willing to sacrifice professional rewards that might accompany more extensive involvement in traditional scholarship. These can be difficult tradeoffs for faculty members, especially those who are working toward tenure. I, for one, am committed to these projects, but I also recognize why others might see them as unworkable in a context where their time and effort are constrained by other personal and professional commitments. The traditional structure of higher education often does not make service learning an easy choice for professors. Furthermore, in my own case, I must work with a severely constrained budget, and if I want to engage students in a project that
requires special equipment, I will likely have to write a successful grant to obtain the equipment. Many faculty members do not face such heavy constraints, but in a climate of economic downturn and shrinking budgets for higher education, I believe more and more faculty members will face such challenges.

Each of the two sections of The End of Oil from which I examined student reflective essays included an action project. These assignments comprised a considerable portion of the graded work for the course (20% in winter 2010 and 15% in fall 2010). In the winter section, students undertook projects of their own choosing, and in the fall, students picked and pressed apples and otherwise assisted with the running of the Durango Apple Days Festival.58

Teaching The End of Oil is a complex undertaking, in part, because I must regularly change the materials I use in order to keep up with rapid changes in our world. This brief overview is meant to provide a sense of what is taught and how, but it is far from comprehensive. My most current materials and assignments are available from my faculty website (Evans, 2010, August 23). The previous chapters of this dissertation also provide insight into what I teach and how, though the depth of the material covered in this dissertation cannot be approximated in a single undergraduate course.

In order to gain insights on the learning experience from the students’ perspectives, we now turn our attention to student reflections on The End of Oil course. I will discuss the methods used to explore the thematic content of student essays. I will follow this explanation with an analysis and interpretation of the themes that emerged from this examination, and I will analyze my findings as they relate to the critical pedagogy of sustainability in this course and more generally.

58 Assignment sheets for these two projects are included as Appendix D of this dissertation.
Methods of Analysis

In order to gain insights regarding student learning resulting from their engagement with the critical pedagogy of sustainability in my End of Oil course, I examined the final reflective essays of students enrolled in the winter and fall 2010 sections. I received 31 essays from students in each section for a total of 62 essays.

When I read the essays for the first time, I marked in the margins thematic labels for the content. I also marked what I saw as important or representative statements made by students for consideration as quotations. From this first reading, I created a handwritten table listing the themes that I had identified. I then went through the essays again, standardizing the thematic labels and marking with hash marks in the appropriate column each time a given theme was referenced. I also made notes in the thematic columns about the specific content of student comments so that I could get a feel for some of the subtlety of what students were expressing. I also made notes about important and distinct ideas that were expressed only once or twice so that I could further track the range of ideas expressed by students. In drawing out the thematic content of the essays, I did my best not to read into student comments by drawing connections or making inferences related to course material or by drawing conclusions that were not explicitly stated.

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59 Assignment sheets for these essays are included as Appendix E of this dissertation.

60 Previously, I had received approval of my research methods from the Institutional Review Board at Fort Lewis College. See Appendix F for a copy of my application, my informed consent letter, and my approval letter from the FLC IRB. I received approval from nearly all of my students to quote anonymously from their essays in this dissertation and other publications. Note, also, that gendered references to particular students (i.e. “he” and “she”) do not necessarily indicate the sex of the student. This ambiguity further ensures student anonymity.

61 It is important to note that I counted each separate time a theme was mentioned, not how many students referenced each theme. If a theme was mentioned in the opening section of an essay, for example, and then again at the end, both mentionings were counted in the table. I chose this approach because I see repetition as emphasis, and I wanted to reveal the relative strength of each theme within the student essays.
I then transferred the content of the handwritten tables (both the numeric data and the notes in each thematic column) into an Excel spreadsheet for further analysis. I considered those themes that had been mentioned only once or twice about which I had made separate notes, and I was able to fold most of these into existing themes by making additional content notes in the thematic columns. I also combined a handful of themes for which there was a great deal of overlap. I then set about sorting the themes into larger groupings of related ideas and ended up with 111 themes grouped into 12 thematically linked groupings.

Next, I looked for the strongest themes that emerged from student essays in terms of number of times mentioned and began to organize my discussion of the content of the essays around these thematic anchors. I then reviewed the potential quotations that I had marked in student essays and selected many that I copied into appropriate thematic groupings emerging around the anchors I had identified. Then I reviewed the notes made with regard to each thematic anchor and with regard to themes closely related to these anchors and began to develop my summary and analysis comments that comprise the following sections of this dissertation. Next, I integrated chosen quotations with my narrative summary and analysis in an effort to bring student voices to the forefront of the discussion. Lastly, I reviewed my completed summary/analysis and developed my concluding insights derived from this exploration with regard to my pedagogy in The End of Oil and the critical pedagogy of sustainability as a whole.

We now turn to our attention to the analysis and interpretations that emerged through this exploration.

Exploring the Thematic Content of Student Reflective Essays from The End Of Oil: What Can We Learn about the Critical Pedagogy of Sustainability as Applied in this Course?

In this section, I discuss my thematically organized review of students’ final reflective essays from The End of Oil. When reviewing my findings, a few points should be kept in mind.
First, The End of Oil is a course I have taught many times and refined over a six year period. Therefore, responses by students who took the course recently, cannot be considered as fully representative of student responses across all the sections. I, too, have learned along with my students over the years, and I have continued to develop my pedagogy and my materials. I believe the depth of thought evident in student responses has also, by and large, increased along with my level of experience.

Secondly, I want to acknowledge certain challenges to interpreting student essays:

- The content of these essays is likely partly influenced by a desire to please me as the professor, especially because the essays are not anonymous and are graded.
- What I ask for in the essay prompts influences what students write.\textsuperscript{62}
- The essays were written immediately upon students’ completion of what was likely an intense course experience for many. It is impossible to know how long the effects of taking the course persist in students’ thoughts and actions.
- Themes deriving from the most recently covered course material are likely to come out most strongly.
- Similarly, content covered in other papers is likely to be excluded or downplayed, even if the material was perceived as important to the student, because students typically want to avoid submitting papers that are too similar.
- Culminating thoughts of students also do not accurately reflect daily challenges of the course with regard to teaching and learning, nor are they likely to emphasize the typical stumbling blocks of students encounter as many of these have been resolved by the end of the term.

\textsuperscript{62} See appendix E for final reflection assignment sheets.
Ideas expressed by students in their final essays may have been learned in ways unrelated to the course experience.

Themes addressed by students often overlap or are presented in highly integrated ways, making the thematic categorization of my analysis somewhat artificial.

As mentioned above, I have done my best not to read meaning or intention into student essays beyond what is explicitly stated. Likewise, I have done my best to examine what students have said without reading the above listed limitations into my interpretations. Still, I believe it is important for my readers that I recognize these limitations up front as an acknowledgement that my insights are circumscribed by the context within which the student essays were generated.

We now turn our attention to a thematic analysis of student reflective essays. It is my hope that this analysis will provide me and others with useful insights regarding implementing the critical pedagogy of sustainability.

**Counter hegemony**

This subsection focuses on counterhegemonic *critique* articulated by students in their final reflective essays. In later sections, we will explore *actions and strategies* discussed by students, many of which are also counterhegemonic in orientation. Given the course content, including its focus on engaging students in a Freirean (1970/200) naming of the world, it is not surprising that a good number of student essays emphasize counterhegemonic thinking across a wide range of subthemes. When discussing counterhegemony in student essays, I am referring to thinking that overtly challenges the prevailing power structure in some way and that demonstrates critical thinking. The central defining practice of critical thinking is questioning received messages and knowledge. This questioning opens for consideration the possibility that the information in question might be partly or entirely false or manipulative. Messages critiqued
can include social myths and other stories conveyed by powerful interests in an effort to mold the behavior, beliefs, and expectations of others into patterns that preserve hegemonic power.

Counterhegemony is evident in thinking that, if it became widespread and if people acted upon it, could reduce the profits and/or the influence of powerful entities and individuals. For example, beliefs and priorities that consciously challenge the culture of consumerism are counterhegemonic, as is thinking that challenges technological triumphalism. Thinking that questions the efficacy, wisdom, and sustainability of globalized capitalism, economic growth, and hierarchical leadership is also counterhegemonic in orientation, as is thinking that questions the ability of the current political economy and “development” to resolve issues of concentration of wealth and power, exploitation of people and planet by powerful interests, and other forms of social and environmental injustice.

Student essays evidenced a good deal of counterhegemonic thinking that included well developed ideas questioning the status quo. It is my hope that the counterhegemony students expressed will serve as a framework for further critique and agency. We will now examine the range and depth of counterhegemonic thinking evident in student essays.

Resource depletion.

As would be expected with regard to The End of Oil, the concept of resource depletion and its impacts was a strong theme across student essays, and most students recognized that the impacts of oil depletion would become obvious during their lifetimes. Acknowledgment that oil depletion is a reality is counterhegemonic in that it calls into question the stability of the current

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63 Technological triumphalism is the notion that progress through technological development can address any and all societal and environmental problems.
world order. Only one student expressed disbelief in oil depletion. Representative quotes from students related to depletion include the following:

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I would like people to consider the possibility that our natural resources might not be around forever, even during our lifetime.

While [oil] may not dry up in my lifetime completely, I am definitely going to feel the effects [of depletion] in my lifetime.

No technological fix for oil depletion.

The idea that more technology produced under the existing social paradigm is not the answer to oil depletion is absolutely counterhegemonic. Although a good number of students made direct references to the need for alternative and renewable energy research, development, and implementation, no students cited technology as a means to allow industrial society to continue on its current trajectory. One student argued that increased development and use of renewable energy technologies would lead to increased energy efficiency with regard to the ability of these technologies to capture energy. A few noted that technology would play less of a role in addressing the peak oil crisis than they had thought prior to taking the course. At least one student emphasized the importance of examining technological options carefully rather than having faith in their ability to save us from the effects of oil depletion. A few students made direct statements noting that oil depletion and/or other large socio-ecological problems cannot be addressed solely through technological change/development. A number of students also mentioned transportation specifically as a societal and technological challenge, and at least one of these students noted that modern transportation as we know it will be especially difficult to maintain. One student discussed further developing rail transportation because of its efficiency.

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64 Paragraph breaks within quoted sections denote different writers.
Student reflections regarding the limited role of technology in addressing oil depletion included the following:

At the beginning of the course the class covered the topics of global warming and alternative energy sources, but being a scientist I was very obsessed with the technology and development aspect of the issues rather than the implications of the issues themselves. Before this class, I was an advocate of PV cells and I even used to believe that hydrogen might have been the key to losing our dependence on oil. But I had never really put all the pieces together before this class. Although I know chemistry very well, I had not considered what might happen if hydrogen cars existed and if those cars happened to crash into one another. I also did not realize to the extent society has consumed the resources, and I say this in regards to mining. There is a long, energy consuming process associated with the building and developing of the technologies that I had never really taken the time to consider before this class.

I knew we were close to peak oil production but I believed (like a majority of the population) that alternative energy resources would rescue us from the oil crisis. We then would be able to live our extravagant lives like nothing happened. Alternative energy resources will be able to help us to a certain extent. They will be able to run simple electrical appliances like the light bulb. Oil is really in some ways the perfect energy source since it is energy dense, can be used as a fuel, lubricant, and is used in a variety of other ways. Not a single alternative energy source has quite as many uses as oil.

One of the biggest things that I learned from this class is that green energy is important, but at the same time the things that we have now, such as solar, wind and other cannot be used as band-aids for something that we use too much of. Nothing is going to yield even close to the amount of energy that oil has for us…. We need to stress the importance of finding a way to decrease the amount of energy that we use rather than just finding something that will do the same things that we have now….

_The Party’s Over_ by Heinberg gave insight into the technology of energy. In short, it discussed how inefficient the majority of other energy sources are, when compared to oil. This makes replacing oil with another fuel source very difficult…. Being aware of the constraints of current technology is significant since so many people claim that when it comes to the end of oil technology will save us.

These reflections point, not only to the idea that technology alone cannot save us, but also to the need for deep social change in addressing the challenges of fossil fuel depletion.

**Dependency.**

Some students made direct statements about dependency as a concept and construct that can create vulnerability. These statements go beyond general statements of concern about
resource depletion and often relate to geopolitical struggle over energy supplies and issues of security such as national security and food security. Some students expressed a belief that oil companies were involved in keeping the public dependent on their product, and one student noted that the diffuse patterns of settlement that characterize suburbia keep people dependent on driving. Recognition of dependency as a source of personal and societal vulnerability embodies counterhegemonic critical thinking related to oil as a resource as well as to globalization itself.

One student noted:

> We have become a society that is unreasonably dependent on others to provide us with even our most basic needs. Over the course of our class it has really become a genuine concern of mine how detrimental this could be to both myself and the world I live in. It scares me to think that if the supermarkets in our town disappeared that it would actually become really difficult for almost everyone in Durango to even stay alive…. This brings me to the changes I want to make in my life. I would like to be less dependent on the system.

The desire to be less dependent on the system, if acted upon over the long term, can manifest as multifaceted and deep counterhegemony.

_Sustainability._

A good number of students made direct references to sustainability as a broad, integrative, holistic concept. As noted throughout this dissertation, sustainability is an inherently counterhegemonic concept within the late capitalist world order because it challenges relationships and processes that support powerful and exploitive capitalist interests. Students’ discussion of sustainability went beyond references to various aspects of sustainability discussed in isolation. One student noted:

> I think I have come to the realization that as we are today, humans are not a sustainable species…. Every other species on this planet has found their niche. They have found their balance and are all kept in line by nature itself. If a certain species eats too much of its food source, there will be a big decline in that species population giving the ecosystem a chance to balance back out. It seems to me that we have tried our hardest to find a way around this phenomenon. We are constantly trying to find new ways to provide large
populations with processed foods and transport water and resources to areas where human life would not normally be possible.

Although this student over generalizes and oversimplifies, this comment reflects a deeply critical questioning of the sustainability of the current social paradigm, a form of questioning that calls into question the validity of that paradigm.

*Systemic analysis and views.*

Many students engaged in systemic analyses that could inform counterhegemonic thinking. Many clearly recognized that our actions take place within a vast web of relationships that span the globe and that our localized actions have far-reaching effects (including collective violence, as discussed below). This recognition can promote counterhegemonic thinking because it encourages one to see that one’s own actions and the actions of corporations and other entities have very real impacts on the lives of others and on the health of the biosphere. As long as these relationships remain mystified, it is much easier for individuals and groups to engage in actions that have widespread, damaging effects.

Not surprisingly, given the course content, a number of students explicitly recognized that oil affects global systems in a myriad of important ways and that it makes industrialism possible. Other students spoke of globalization as a complex, integrated system, and one student emphasized that the U.S. plays a huge role in what happens globally. Others noted that (re)localization of community economic and cultural life would create systemic ripple effects. Still others noted that, because societies function as integrated systems, we will need to pursue holistic rather than piecemeal approaches to social change. As noted above, a number of students discussed sustainability as a holistic, system-level phenomenon.

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65 The theme of (re)localization will be discussed in some detail below.
A number of students commented on the distancing between cause and effect present in globalized political economy. These students recognized that we make purchases and engage in behaviors that have distant and sometimes far-reaching impacts on people and environments. Some students discussed that these impacts are often obscured through distancing in space and time so that, for instance, our consumption of products appears to us to be an abstract activity, completely divorced from the very specific social and environmental relationships that make that consumption possible. The student quote here discussed the importance of recognizing complex, systemic relationships with regard to consumption:

Everything from the clothes that we wear, the oil we consume, the food we eat and the sugar in our coffee, to the resources we use within our houses and the water that comes in the tap and down the sewer, it all has dramatic and systemic effects on others and the environment.

Some students discussed long supply chains in the global food system as an important form of abstraction while others observed that our use of energy is likely to be higher when the effects of its production are out of sight. In particular, one student stated that the current, distant Middle East wars seem to be little understood in the U.S. Another student observed that, in contradistinction to the abstraction of globalization, people tend to care more for a place that they know. The overall thrust of these comments appears to be in favor of reducing abstract relationships of production and consumption in order to move toward more intimate and responsible relationships with others and the environment.

Initial recognition of far-reaching relationships in global political economy can manifest as a shocking, disempowering experience, creating a sense that one is an insignificant cog in a vast machine that is running out of control. A good number of students commented on the sheer magnitude of the sustainability challenges we face, some noting that the scale and scope of needed changes are daunting, if not overwhelming. On the other hand, quite a few students
proposed that small steps taken by many at local levels can have systemic and cumulative effects. These comments, when paired with the high emphasis on agency present in student essays, lead me to believe that most students were not unduly overwhelmed with feelings of hopelessness or helplessness upon the completion of the course. This interpretation is further supported by expressions of clear-eyed hope in student essays (to be discussed below).

Collective violence.

Some students specifically aimed their systemic analyses at the issue of collective violence by discussing how individuals contribute to collective and large scale damage to environments and/or injury to other people. Concern with issues of collective violence is counterhegemonic in that such concern confronts exploitive practices upon which social and economic power are most often built. Collective violence was seen by some students to be a result of fossil fuel use and, more generally, consumption. A number of students expressed specific concern for social justice, and a number also noted that the course had increased their empathy for oppressed people.

The following quotations from student essays relate directly to the concept of collective violence:

Ever since I moved to Durango I have begun moving in more of a sustainable fashion, but I am ready to take it a step further, especially considering all the news, war, and politics that we read about and how we, individually, have an impact on the harm of the rest of the world. One quote that sticks out to me from this course, although I don’t remember exactly what it said, was something like “while few are guilty, all are responsible.” While reading about the oil and gas industry and its role in our country within politics and the economy I am ready to detach myself from that lifestyle because of the harmful effect that my tank of gas has on others and the environment.  

The experience that spoke to me the most was viewing *Black Wave*. While I watched this documentary about the Exxon Valdez, I was struck with the realization that the Exxon

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66 I believe this student is referring to a statement by Rabbi Abraham Heschel that I often use in class when discussing collective violence. The specific quotation is: “In regard to cruelties committed in the name of a free society, some are guilty while all are responsible” (see Loeb (1999, p. 11).
Valdez was not some sinister entity out in the world doing bad things to the environment, rather as long as I choose to live a life supported by and entrenched in oil, I AM the Exxon Valdez. I can choose to be otherwise and make a difference for myself, my family, community, and the world.

These reflections represent counterhegemonically-oriented self-reflexivity that “identifies the source of oppression, both from the outside and from within, through participation in a dialectical critique of one’s own positionality in the larger totalizing system of oppression and the silencing of others” (McLaren and Farahmandpur, 2005, p. 110).

**Political economy.**

Themes embodying critical examination of global political economy were fairly strong in student essays, though not nearly as strong as themes related to agency and to (re)localization as a resiliency and community building strategy. Themes I have grouped under the heading of political economy include concerns students expressed about the profit motive, corporate power and personhood, intellectual property rights, global concentration of wealth and power, various instabilities in global political economy, and geopolitics.

A good number of students commented on the profit motive and the growth economy of capitalism as specific problems for society. One student noted that a narrow focus on profits leaves other important concerns unaddressed. Others stated that, when wasteful practices do not much influence the bottom line, the profit motive encourages short term thinking and disregard for energy efficiency and conservation. One student used war profiteering in the destruction and reconstruction of Iraq and Afghanistan as an example of the amorality of the profit motive. Other students characterized as underhanded the profit making strategies of the electric utility companies, in particular revenue decoupling. Another student noted that competition for profits

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67 These themes will be discussed below.
68 Revenue decoupling is a process based on legislation that “decouples” a utility’s profits from its volume of sales. According to energy policy expert Mark Sardella (personal conversations and presentation in my End of Oil class)
promotes public deception. The profit motive was also cited as an impediment to sustainability-oriented change.

A good number of students assumed counterhegemonic stances with regard to corporate power and corporate personhood, expressing that they saw these developments as damaging to society:

Globalization has opened up many doors around the world. Countries are doing what they can to become players in the global marketplace. The bigger companies grow, and the larger market share they acquire, gives monopoly power. These big companies, corporations, can earn enough money to even be able to coerce government and manipulate the justice system in their favor. This becomes an even bigger problem when an entity is given human rights [i.e. corporate personhood]. Corporations can be dangerous because of their ‘bottom line’ mentality. Profits tend to override just causes or environmental well-being. Watching the movie entitled *The Corporation* was very eye-opening. “Corporation” was defined as a dominant institution that can have power and influence over the lives of others. I agree with this definition, corporations have so much money, they can literally pay whatever they need to influence anyone that can help their cause. This is morally wrong. A corporation can’t have the rights of a person, because besides on a financial aspect, it cannot be physically held responsible. Board members that support the demise or compromise the safety of communities (socially or environmentally) don’t lose more than their stock value, where if it was as actual individual committing these crimes, such leniency would probably not be shown. I am not saying that globalization is entirely horrible, if the goal was to work together for success I think it has the potential to benefit a lot of people, but the intentions are usually profit-based, and not for the common good. Power needs to be divided instead of monopolized, the only way to get the power back to the people is through decentralization.

Corporations are given personhood. As a business student, you would think I would have some knowledge of this, but I had never heard about it until this class. Corporations are given person-like traits and are treated as people, and this is just unethical. I do not think that many people are aware of this, and that is even scarier because as human beings we have a right to know what else the government is calling a ‘human,’ and what rights these entities have.

I think that giving a corporation the same rights as an individual human was perhaps one of the biggest mistakes this country has ever made. Certainly when it comes to any law that has been passed, this has to be the worst decision I have ever heard of. Not only does such legislation have been passed in many states in the United States, meaning that, when customers succeed through efficiency measures in reducing their electricity consumption, the entire customer base must pay more to compensate the electric utility for lost profits. Revenue decoupling is basically a legislated profit level guaranteed to electric utilities.
it give hugely unfair amounts of power to corporations, but it also points out how flawed our government has become. It has been some time since America could still be considered a democratic society. I think it is safe to say that we have become perhaps the most well developed plutocracy that has ever been seen.

More than one student saw extensive intellectual property rights granted to large corporations as morally repugnant and emblematic of a dangerous concentration of power in the hands of transnationals. One student noted that intellectual property can interfere with sustainability in the business realm, but that it promotes profits:

One quote that stands out is, “Why exchange each other’s cookies when we can exchange recipes.” This quote really made me think about how absurd it is to transport things over and over again in order to make a profit when we could just as well explain how to make it to somebody, in turn, effectively removing the shipping process almost entirely. The main issue with this, though is the fact that it is not good business. You make more money by holding on to your business or trade secrets. This creates a dilemma, especially for me considering I am a business man.

This student had been confronted with a disorienting dilemma with regard to his personal plans and practices. This encounter could possibly result in further counterhegemonic thinking and/or action.

A number of students also noted that large corporations represent dangerous concentrations of wealth and power and that the doctrine of limited liability contributes to the power and irresponsibility of corporate entities. A few students observed that current political economy can promote monopolies and enforce people’s dependency on monopolizing entities.

A good number of students voiced concerns about instabilities present in the global political economy and/or about its ultimate unsustainability. One student expressed a number of concerns in this area and related these concerns to dependency:

I was enlightened and also frightened to learn how dependent all countries are on each other. We as a nation are slowly foundering due to the bursting credit bubble, and dependency on oil that we cannot support ourselves. We depend so much on other countries such as Japan, China, and the Middle East to either fuel our oil dependency or support our constantly increasing debt issues. These major points that we discussed in
class are so important because the future of our planet and country are balancing on a crumbling foundation. We need to be aware of what is going on and we need to be cautious in our next steps in change.

Concerns expressed by students that related to instability in global political economy also included:

- Recognition that the continual concentration of wealth and power globally is a destabilizing phenomenon;
- Recognition of the potential for failure of the U.S. dollar currency;
- Worries about destabilizing national and international debt levels and about how long other countries would continue to purchase U.S. debt;
- Concerns about debt as an unstable foundation for money creation;
- Concerns about the potential collapse of the petrodollar system and, more generally, about currency wars; and
- Worries about the potential for a near-term great depression, or worse.

The following quotations taken from student papers express some of these concerns:

I now hold less faith than before that our world will make a transition into the coming “alternative energy age” that will be smooth and free of suffering. Sure, some countries are phasing in alternative energy so that their transition out of oil dependence will be smooth, but super-power countries like ours and China are not doing enough of this. Considering this and the fact that our economies drastically affect everyone else’s, one option that I see on the table is a global depression, the likes of which we have never seen before. This is, however, just a theory, and no one really knows what is going to happen in the coming years, but I see a lot of hardship and struggle for the majority of the world before I see unicorns and rainbows.

The only reason the economy has been able to produce and grow at the rate it has is because of cheap oil and resources. But when it becomes difficult to drill for oil that is down to a thin layer, that is the end of cheap oil. There will be no more growth and the economy will continue dropping into a depression. This depression is going to be far greater than anything this country has ever experienced and we are reaching a point where there is no turning back. Each of us needs to be aware that we are about to see a lot of changes in the next few years and know that it’s not going to get better on the political and economic level. It is going to get better in our neighborhoods, our homes, and smaller
communities. We need to begin a more dependent lifestyle on those that we live near. We need to begin creating a sense of community, working on a barter/trade system, reskilling individuals, and becoming more connected with natural cycles so that when the times get rough because of the political failure, we have what is close to rely on.

This last quotation also emphasizes (re)localization, a counterhegemonic theme that will be discussed in some detail below.

One student voiced specific concerns over the stability of the debt-based monetary system:

Something else has brought us to the position we are in today, that many have an idea about but do not truly understand; the economy. I believe that one of the first things that are most important to understanding our current economic crisis is the fact that I recently became fully aware of with the help of this class. That is the creation of money through debt. If people can understand that the creation of money through debt leads to an unstable economy, I assume that people will be less inclined to generate their own debt, and in the end resolve such an unstable economic problem. However, few are willing to educate others in the matter of economy in this manner. Doing so will cut many business’ profits, mainly banks…. In order to change the unstable economy, we need to understand just what makes our economy unstable. If we understand that creating debt leads to an ongoing cycle of debt we can begin to change our ways back to a method of payment that does not rely on debt to work.

This quotation emphasizes several ideas that are counterhegemonic: that the monetary system is unstable, that the educational system tends to support hegemonic interests because it embodies an unwillingness to challenge the system and its powerful economic interests, and that ordinary people can play a role in changing large scale systems.

A number of students voiced concerns about a potential political and/or economic collapse, with at least one noting that such a crisis could serve as a catalyst for welcome changes. Others noted that, if we wait too long to address the instabilities within global political economy, we will miss a historic opportunity and pave the way for a chaotic world-system collapse. One student discussed what she saw as an increasing potential for a political uprising among the people if global political economy continues to slide toward collapse. One student commented on
the potential for collapse in a way that integrated many themes into a systemic view of global political economy:

This class has effectively taught me that it is a combination of matters that will bring the drastic change…. The change I keep referring to is, in my opinion, that our modern industrial society will soon end and a more domestic, hopefully sustainable society will prevail. I believe it is due to a combination of peak oil, increasing corporate power, global warming, and poor economic decisions, which are all conveniently related. In short, our extreme consumption of oil had led to both peak oil and global warming; peak oil and corporate power have led to poor international economic practices, while corporate power alone has influenced national economic practices (bank bailouts, the housing bubble, etc.). Corporations now have the ability to blatantly influence politicians, as well, which has and will greatly influence further economic and political agendas. Our society is slowly spiraling out of control but our government and the media combined do an excellent job of keeping this hidden from most of the public.

Quite a number of students discussed the role of geopolitics in current national policy, particularly with regard to the wars in the Middle East, and remarked that they thought resource wars would continue and even worsen in the future. In a time of resource depletion, geopolitics is an important concept with which to grapple in the process of developing an understanding of global political economy. In chapter six, I argued that the critical pedagogy of sustainability must confront the issue of the U.S. as a global empire. The End of Oil is a course that does this through its examination of U.S. military and other involvement in the Middle East. One student remarked on the potential collapse of the U.S. empire. Some students assumed critically and historically informed stances with regard to the geopolitics of oil and U.S./Middle East relations:

I was basically unaware of exactly how involved our country and many others are in the oil industry, how important that industry is to the world’s economy, and just how far countries (especially ours) are willing to go to keep their power positions in that industry to maintain their status on a global scale.

The emphasis that this course has placed on the interest of the US government in the Middle East as potentially economically driven, has given me a more accurate perception of world events. It is a pretty hefty concept to try and determine whether or not the “War on Terror” is just a way for the American fossil fuel industry and their affiliates to use taxpayer money to secure their financial interests. But, given the track record of big business as far as past violations of human rights it wouldn’t be an unreasonable
conclusion. After all, with the removal of Saddam Hussein from power comes the need for a completely revamped political power structure to run the country. Clearly the US is not going to help establish a new government that is too disagreeable with US policy. Now the question is how much influence does the fossil fuel industry have in the creation of the new government, and what kind of accommodations will be made in regards to the corporate interest in the resources of the area.

These statements are deeply counterhegemonic in their implication that powerful individuals and entities influence public policy, often behind the scenes, in order to protect their own interests.

A number of students explicitly addressed the petrodollar system and its systemic effects in global political economy. In chapter six, I argued that the critical pedagogy of sustainability recognizes the significant dependency-enforcing roles of world reserve currencies, particularly the U.S. dollar, in global political economy. In chapter three, I discussed the prevalence of dollar-denominated debts and use of the U.S. dollar as the sole currency for purchasing OPEC oil (the petrodollar system). I also discussed how the world reserve currencies and the petrodollar system contribute to global inequities, to extreme consumerism in the U.S. (the source of dollars needed to repay dollar-denominated debts and to purchase oil), and to staggering U.S. debt loads that threaten to permanently destabilize the global economy. Clark’s Petrodollar Warfare (2005) used as a course reading for The End of Oil has been an indispensible tool for teaching these concepts. The following quotations from student papers reflect students’ understanding of some of these issues:

The petrodollar is a system that forces most nations to trade oil only in American currency (dollars). This keeps the dollar in high demand and keeps other nations investing in the United States.

The U.S. has been such a powerful country based on the fact that oil is sold in U.S. dollars. Therefore it promotes consumption within the country in that other countries need to sell their products to us in order to get oil, and we need to keep consuming in order to continue the cycle. And as consumption increases the need for oil increases, which is getting harder to meet as time goes on.
Because of the way business works, I highly doubt that this rapid consumption of oil will stop. Especially considering that our whole economy is based off of the fact that our currency is backed by oil and oil is traded worldwide in the US dollar. Because of this, it is necessary for us to use oil in order to keep our currency afloat and guarantee our comfortable quality of life.

A good number of students saw a need for political-economy-related changes in the public policy arena. Potential changes referenced by students include:

- Addressing climate change as a high priority;
- Prioritizing environmental concerns in decision making;
- Encouraging transition of the energy system away from fossil fuels, in part, through creating tax and incentive systems that favor the development of renewables;
- Increasing the public accountability of decision makers;
- Holding natural gas extraction companies accountable to the public for damages to the environment and to public health; and
- Returning power to the people, in part, through devolving the locus of political control to the local level.

In sum, a good number of students addressed political economy in their essays, and most of their discussion was counterhegemonic in orientation. Their discussions focused on many important aspects of global political economy, but there was little focus on enforced dependency as a central phenomenon pervading global political economy. As we shall see below, however, many students did make connections between the critically informed content of the course and (re)localization as an important vehicle for addressing local and global problems.

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69 For at least one person, this transition included a focus on nuclear energy. In class, we had discussed the dangers of nuclear energy a number of times, and we had also discussed the nuclear industry as a highly concentrated industry in terms of wealth and power. Still, a number of students supported forms of energy transition that emphasized nuclear options, demonstrating, in my mind, the tenacity of hegemonic social constructions and ideas.
Deception, corruption and manipulation.

Recognition of deception and manipulation in business, media, and government were fairly strong themes that emerged in student essays. Recognition that powerful interests use deceptive and corrupt means to maintain their positions of advantage is an important foundation for counterhegemonic thinking and agency. With regard to deception, some students’ comments were quite specific, but a good number of comments also referred to media and government as deceptive in somewhat vague, general terms.

With regard to business practices, students specifically referred to greenwashing and, more generally, to advertising as deceptive:

I think another important piece of information was that although corporations make it seem like they are doing good things for the world, they are in fact not. Corporations have been working very hard through marketing and advertising to make themselves seem like heroes. They portray themselves as eco-friendly and most of the time this is just a lie.

Widespread, systemic, ongoing corruption was discussed by a number of students, particularly the corruption of politics by moneyed interests. One student speculated that corporate power had influenced national policy in the recent bank bailouts. Another student asserted that oil companies have been using their political pull to keep people dependent on their product. Several students stated that a great deal of systemic corruption is tied to the fossil fuel industry, directly or indirectly.

Deception of the public by government and the media with regard to the run up to the Iraq war was also mentioned a number of times. On a related note, some students observed that the overall geopolitical struggle to control oil and oil transport routes is highly deceptive and corrupt. With regard to U.S. involvement in the Middle East, one student observed:

An important piece of knowledge that people need to know about is that not everything that our government and media tells us about events is always the entire truth. Most
people understand this already. However, they do not fully understand this. For instance, most do not realize that the rise of the Taliban, Osama Bin Laden, and Saddam Hussein to power was through influence of our own government. These facts coming to light for most will help them realize that our only reason for being in the current war is so that we can secure energy reserves.

Some students also noted that the media have acted as willing participants in geopolitical corruption by actively engaging in shaping public opinion to support government agendas that, in turn, support the profits of large corporations. These students pointed to government actions that have catered to the fossil fuel industry and to corporations that have the potential to profit from military actions, from the processes of rebuilding infrastructure in Iraq and Afghanistan, or from the extraction and sale of oil.

In sum, many students recognized deception, corruption, and manipulation by powerful interests at work within the world-system. This recognition can serve as a platform for further counterhegemonic thinking and action.

**Hegemony.**

As discussed above with regard to several themes, many students demonstrated a clear awareness of various aspects of hegemony at work in the world-system. Awareness of hegemony *per se* was also a fairly strong theme that emerged from student essays. When I reviewed student essays, to be considered a reference to hegemony, a student’s work had to contain fairly explicit acknowledgement that elite or dominant interests manipulate organizations and/or the public, not only for their own gain, but also *in order to make them willing participants in their own oppression.*

Several students noted that access to material comforts and conveniences can effectively quell people’s desires to rock the boat, rendering them compliant and passive in the face of power – Marcuse’s (1964) notion of repressive desublimation. On a related note, one student
stated that the normal way of thinking is that everything will be alright and that this assumption, though not necessarily correct, is ingrained in people:

Overall, I immensely enjoyed my time in this class and I would recommend it to anyone. It made me think outside the box but still anchored in reality. I would tell them to look into the facts on their own and to believe what they want to believe because no one person has the answer to this complex problem. Before I attended this class I had never heard about peak oil and the problems with our world because the common way of thinking is that everything will always be alright. It has been ingrained in my head.

This statement implies that the public is not being adequately informed about important issues and that their lack of awareness limits their thinking and/or action.

The media were referred to, directly and indirectly, as an effective vehicle for hegemonic influence of the public:

I believe that out of any sections of this class to distribute to the masses would be the truth about our media resources and corporations influence within our very own government. I bring these two topics into focus, because of the direct effect it has on every US citizen’s beliefs and morals. Throughout classes the unraveling of half truths and misleading facts pertaining to our media was sickening. People should know the truth, whether the news be positive or negative. The artificial spinning of vital information only cages our curiosity and self decisions. Media helps guide US citizens to be herded into majority beliefs.

I feel now I can’t look at one story but have to start an investigation to put the pieces together of outside motives that are hidden from the public.

These statements imply that media deception and manipulation contribute to lack of public awareness and/or action regarding important issues.

As noted above, one student described the U.S. as a plutocracy while another asserted that most people in the U.S. believe in the American dream because they are prompted by government and media to do so, while the reality is that few Americans actually get to live that dream. On the international level, more than one student discussed the U.S. as a global military and economic hegemon, and another student cited government fear mongering as a hegemonic tool of social control.
One student’s discussion of feeling somewhat schizophrenic with regard to the unfolding energy crisis is reminiscent of Gramsci’s theory of how an individual’s recognition of hegemony evolves. This student stated:

It is really frustrating sort of being stuck in two different mind sets: carrying out regular life in the industrial society, and being aware of the energy crisis and trying to limit consumption within the industrial society. I feel like a lot of people are sort of straddling the fence in this scenario, and I am just as guilty.

Gramsci argues that an instinctive feeling of being set apart from mainstream society represents a recognition of hegemony that is an early developmental stage of counterhegemony:

The unity of theory and practice is not just a matter of mechanical fact, but a part of the historical process, whose elementary and primitive phase is to be found in the sense of being ‘different’ and ‘apart’, in an instinctive feeling of independence, and which progresses to the level of real possession of a single and coherent conception of the world. (Gramsci, 1971/1999, p. 333)

While I would like to have seen more direct discussion in student essays that demonstrated clear understanding of the concept of hegemony, I acknowledge that further exploring this philosophical concept in class would require me to turn attention away from other course content that I also consider important. We should also recognize here that, in an effort to avoid reading meaning into student essays, I set the bar fairly high regarding student discussion of hegemony as a concept, a factor that may have contributed to underestimating the strength of this theme. However, I cannot be sure that I have underestimated. What I do see clearly expressed in many student essays, as discussed above, are what I interpret to be counterhegemonically-oriented ideas, many of which are related to (re)localization and agency. We will discuss these themes below.

Hegemonic leadership.

A few students directly discussed hegemonic forms of leadership as a central concern for social change. Most students who made these statements noted that they saw leaders and current
hierarchies as integral factors and agents in the creation of the current sustainability and economic crises. In chapter six, I argued that the critical pedagogy of sustainability must critique hierarchical leadership and work to create sustainable forms of leadership characterized by inclusivity, reciprocity, and egalitarianism. I also argued that nurturing authentic leadership in others requires cultivating their critical thinking and transformative capacities, in other words, their abilities to engage in counterhegemony. It seems that, after taking The End of Oil, at least some students were prepared to engage in critiques of hegemonic forms of leadership. Some of these students suggested that leadership and governance should be focused at the community level. On a related note, others emphasized the hegemonic functions of leadership in global industrial society and suggested that individuals and communities cannot wait for current leaders to solve their problems for them but must assume leadership themselves and act on their own behalf:

We need to think creatively, and not wait for some cure-all brought to us by the same people who created the problem.

I would like others to wake up and realize what’s going on in the world, and start to understand how things operate. So many people today have an attitude where they think “nothing is going on” and “everything is OK”. We are so conditioned by the news and elsewhere that the people in charge are looking out for our best interests and will make sure we’re ok, however that’s not the case.

We have now concluded our exploration of counterhegemonically-oriented critique evidenced in student essays, and we turn our attention to examining themes that are even more closely associated with counterhegemonically informed agency. In making this transition, however, it is important to recognize that the line that I am drawing between critique and agency for the purposes of organizing this chapter is a very fuzzy line and that, as argued in chapter two of this dissertation, theory and action actually form a unity in praxis.
(Re)localization as a Resiliency Strategy

In chapter four, I argued that, through processes of creating viable alternatives to globalized capitalism, place-centered sustainability can represent the absolute negative moment of praxis because it is capable of freeing itself from its definition in relation to globalized capitalism in order to create new lifeways that are resilient and self-sustaining and in which people participate freely (see McLaren & Kumar, 2009). In student essays, place-centered living as a community building and resiliency strategy was among the strongest themes. I believe this idea represents, at least in part, student responses to 1) a fairly in-depth exploration of modern industrial society as a deeply hegemonic construction and 2) exposure to course material and engagement in action projects aligned with the theme of (re)localization. Many students discussed community resiliency-boosting aspects of (re)localization as an embodiment of creative action that both grows out of and goes beyond critique. The following quotation is one example:

There are so many benefits to thinking local, such as providing jobs and not having to transport everything into town which would cut carbon emissions. Also, with the depletion of oil, I think a stronger sense of community will naturally emerge. Starting to localize now will make it easier in the future when we don’t have a choice. I think if we start caring about what community members are producing, it will bring meaningful relationships and a simpler way of life.

In chapter six, I argued that place-centered service learning experiences, particularly those that focus on sustainable local food systems, can engage students in powerful forms of (re)localization praxis. In both the winter and fall 2010 sections of The End of Oil, students engaged in action projects. A good deal of this engagement was oriented toward local, sustainable food production and consumption. Some projects were only indirectly related to local food. All projects, even those not related to local food, had at least some local community building focus. Several course readings, especially Sharon Astyk’s Depletion and Abundance
Living and Learning Sustainability

Living and Learning Sustainability (2008) and Richard Douthwaite’s “Why Localisation is Essential for Sustainability” (2004) also focused on (re)localization as an individual, family, and community resiliency strategy.

Under the umbrella of (re)localization as a theme, students discussed a wide range of topics including the importance of local food, food security, self-sufficiency, self-reliance, and the correlation between a place-centered economy and sustainability. They also noted the value of community relationships of interdependence and mutuality, along with the importance of strong familial and other interpersonal relationships, to successful living in tough times. The following quotation offers an example of some of these themes as treated in a student essay:

On an individual level households should grow their own food, medicine and maybe raise some chickens, goats and even bees. Collecting rainwater at a house too is a large contribution…. The community level people should start community gardens and trade systems within their community. Trade goods and services amongst one another instead of depending on outside sources that take money out of the community and send it to larger corporations.

The following quotation treats similar themes and offers an example of conceptual integration of the Apple Days project with the overarching course theme of (re)localization:

[Apple Days] is providing a community with local resources before there is no other option. These are the changes that I think we most need to see if we as a society are going to be able to make the transition smoothly. I think perhaps the biggest point that needs to be stressed by anyone that supports the idea of local sustainability, is how we cannot wait for things to fall apart. By that point it will be much more difficult to just try and start. Also, making little steps in that direction over the period of a few generations would allow for people to get it right before it becomes essential for their survival.

A number of students specifically recognized local abundance and community assets as building blocks for community economies. The following quotation offers an example with regard to Apple Days specifically:

It took a little while to settle in, but it was amazing to see so much come from nearby areas [for Apple Days]. Most things I look at have stamps saying it was made in another country, and I have very little idea of all the steps it takes to get to me, but in seeing a gigantic pile of apples which had been gathered the day before brought to Durango and quickly changed into juice and other things I was stunned.
In addition to the broad theme of (re)localization present in student essays, a number of distinct subthemes also emerged. We now turn our attention to these subthemes.

*Localized, diversified energy systems.*

With regard to (re)localization as a resiliency strategy, some students specifically emphasized the importance of energy system diversification and localization. The following quotations offer examples:

Learning about the various forms of clean and renewable sources of energy we have I think we can implement them in areas that they can prosper, so instead of looking at the renewable sources on a national level, we need to focus more on where the different types will be more effective in local regions. For example we can use solar power in high sun areas such as Arizona, Texas, and southern California because for most of the year they have almost unlimited sunshine. In other areas that are very windy we can use wind turbines to generate electricity.

I think it is important that we start using the cheap oil that we have now for production of wind turbines, solar panels, and water cisterns, etc., so that when the time comes that oil and gas are no longer cheap we have a way to receive the things we really need….

*Sustainable leadership as place-centered.*

In chapter six, I argued that sustainable leadership is integrative and ultimately place centered. One student offered reflections on place-centered leadership that derived directly from his experience working at Apple Days. These reflections demonstrate recognition of important differences between place-centered leadership for sustainability and leadership as commonly practiced within the capitalist national economy:

I saw lots of similarities and differences in terms of how the US economy runs during the Apple Days Festival. Everyone who contributed to the festival had a specific duty for a few hours and in the process contributed to something larger than themselves. The US economy runs on a similar outline. There was however a large difference between the Apple Days Festival and the US economy. There was no hierarchy in terms of most important person or job during the festival. Everyone who did contribute had equally important jobs that helped make the festival a success. I liked that system because it made everyone feel appreciated and proud that they contributed to the activity. This way of thinking is not how corporate America works however. Executives think that they’re the
most important members of the company when the workers are the ones doing the hard work to make the corporation a success. Corporations also aren’t local enterprises since a large percentage of their revenues go back to corporate headquarters for profit. When they take money back to corporate headquarters, money is lost from the local economy.

*The value and power of community.*

(Re)localization as a sustainability-oriented strategy was almost equally emphasized in student essays from both sections of The End of Oil examined here, even though the Apple Days project involved much more community interaction than did the individualized/small group projects undertaken by students in the winter section. Students who participated in Apple Days, however, emphasized the specific value of community relationships in the context of depletion more heavily than did students in the winter section of the course. The following quotation emphasizes how one student viewed the community building aspects of the Apple Days project and how he related these aspects to the larger conceptual framework of the course:

The sense of community is great when participating in the [Apple Days] festival, although most of the time unspoken, there is a feeling in the air that we know we’re doing something good and useful. This might even be an intrinsic, biological induced feeling – one that we get from growing food, practicing husbandry, or farming or hunting – practices that are inherently wholesome and good. It’s also important because we are taking advantage of our local food supply. As has been mentioned in the class, not only is shipping food around the world extremely wasteful, it’s not as healthy as eating locally. And when the time comes, local food might be ALL we have to rely on and the sooner we get started organizing and harvesting, the better off our community will be. In the future, all of these aspects will need to be relied on – community, local food and resources, and know-how. Personally, I would love to participate in the festival, or at least attend and drink delicious juice in the future.

Many other students commented directly on the value of community building and community relationships to sustainability and resiliency. The following quotations offer examples:

A major change in my worldview involves the value of individualism. Brought up in a society that values individualism, I have learned to rely on and help myself to get where I want to go in life. Now however, I realize that in order to accomplish my goals (especially with the coming crisis), I need to learn how to rely on and help others as well. Society as a whole will have to become more interdependent as well.
This is one of the most important things that I would like others to know, that local community is extremely important, and the American culture needs to move back towards a society of neighbors rather than people who live next to each other.

In response to the question on what kinds of actions people should take, I say reach out. Find community, seek educators that can teach how to farm, hunt, understand local plants, preserve and can food, have potlucks, begin practicing skills that can be traded for other goods, start playing music, begin producing instead of consuming, start growing your own food (AS MUCH AS POSSIBLE), start learning how to build with recycled and natural resources, and most importantly start slowing down, bring more love into your life, and begin to create a lifestyle that is not so reliant on unsustainable energies.

With regard to the value of community building, the power of community to come together to accomplish large tasks was mentioned many, many times, and this theme was strongest in the section of the course that participated in Apple Days. The student who wrote the following captures this theme quite nicely:

I think what I found most rewarding out of the entire project, was to see how few people it actually took to produce such a huge amount of apple picking. Sure the trees had already been planted and we did have the assistance of a dump truck, but when it came down to it the majority of the work was done by good old fashioned manual labor. It was kind of crazy to think that with only the manpower from two classes we were able to pick a couple thousand pounds\textsuperscript{70} of apples in a single day…. This got me thinking about how little it might actually take to grow your own food especially if every time it was ready to be harvested, a couple dozen people went out and helped you pick or dig up your food.

Themes related to teamwork and cooperation more generally were also slightly more emphasized among the students who participated in Apple Days while the value of personal relationships was emphasized almost equally in each section. With regard to community relationships, the potential of crisis to bring people together or to incite competition was also mentioned.

\textit{Human relationship with the environment.}

In chapter four, I argued for a holistic ontology of place. A number of students specifically addressed human relationship with the environment in their essays. In the following

\textsuperscript{70} The amount was actually about four thousand pounds.
the student connects the idea of working in harmony with the environment to a practice of healthful living characterized by loving relationships:

We need to start working in harmony with the environment instead of against it. However, as I write these thoughts and ideas, I am very aware that I can preach to no one and that I can only educate through my actions. I can start doing these things individually and hope that those practices spread. I can create a life around me that is beautiful, thriving, and sustainable with lots and lots of love, so that whether or not we go through this crisis and changing times I will be living a lifestyle that is healthy and ready for anything.

With regard to human relationships with the environment, generalized concern over environmental damage caused by people was also a fairly strong theme. A small number of students made direct references to modern, industrial society behaving as if it is disconnected or perceiving itself as disconnected from nature, and a small number of students directly expressed a desire for personal and/or societal reconnection with nature. A handful of students discussed humans and nature as inextricably interconnected – as a human/nature complex. One student noted, “What we do to the environment, we in return are only doing to ourselves.” Reciprocity was also mentioned a few times as an important aspect of the human/nature relationship.

**Human health.**

The theme of human health (concerns about negative impacts on human health and concerns about coming changes in approaches to promoting and preserving human health) was moderately strong in student essays, though it was not discussed in detail in class. The main treatment of this topic in the course was in a chapter of Sharon Astyk’s *Depletion and Abundance* (2008), a required text for both sections of the course. Though this theme was not exclusively addressed by students within the context of (re)localization, often it was, and Astyk most certainly drew this connection. Therefore, I have included human health among the subthemes in this section on (re)localization.
Some students cited possible improvements to human health in a low energy world where people would have to be more active and would have to produce and eat more local food. One noted that modern medicine is extremely reliant on fossil fuels and that this reliance would translate into big healthcare challenges for the future in an energy constrained world.

Agency

Similarly to the theme of (re)localization, agency emerged as among the strongest themes present in student essays. These reflections ranged from direct discussion of the importance of taking action to discussion of specific actions planned or already undertaken in response to taking The End of Oil. In many cases, the theme of (re)localization was interwoven with themes of individual and collective agency. Representative generalized statements on the value of agency include the following:

I believe that the most important message that was covered in this class was that it is possible to make a difference. Although this class did not cover happy topics it was presented as a problem that we can work to fix, not a hopeless situation that allows us to give up personal responsibility.

Maybe I’m being naïve but I still feel like we have a chance to make a difference if we stop being selfish and take the steps to do so. A lot of people say that when you’re in college that you feel like you can change the world and that feeling fades, as you get older, because then you see how the world really works. Well maybe what needs to change is how this world works.

I do agree that it is truly remarkable to live in this time of great advances in knowledge and technology, but I have come to the conclusion that there is also quite a heavy responsibility involved in living during this time. I believe that we must all recognize the problems of the end of oil and accept the challenge to become committed to doing our part to effect positive change. Our survival, and the survival of our children, and their children, depends on our actions now!

Not all statements about the efficacy of agency were positive, however. At least one student discussed social change as difficult with regard to giving up certain luxuries:

It will be a hard switch because there are some things that I really like doing that use fossil fuels. Flying is one of those things, it is a passion of mine and it will be hard to give
it up…. I want to be able to travel the world and see its beauty, but if we continue with our habits there will not be much to see.

A few respondents voiced an unwillingness to take responsibility for needed changes, and a couple of people noted that they were unwilling to make sacrifices in their chosen lifestyles in a society filled with others who were busy consuming and otherwise enjoying the temporary benefits of living unsustainably. A few students seemed a bit conflicted about recognizing the need for sustainability-oriented social change while remaining unwilling to make changes in their own lives. This quotation from a student essay provides an example:

I know that there are problems with the world today, and, as I said, I feel that most could be solved with a simple reduction of the human population. Alas, I am merely one of the masses, and I am no martyr. I certainly will not be the one giving up any luxuries for the good of the planet. That is not to say that I don’t turn the light off when I leave the room, or park my car just for the sake of walking. It’s just that I drive my car almost daily, and I deem it basically a necessity to do so in order to live the way I want to live. Until regular people like me stop consuming, I have a distinct feeling that things will get much worse before they get better.

Under the umbrella of agency as a broad theme, a number of distinct subthemes also emerged. We will now explore these subthemes.

Relevance/practicality of the course.

A good number of students commented on the relevance or practicality of the course with regard to their education and their lives, some of these stating that everyone should learn the material covered in the class. One student noted, “I believe that these classes are necessary in our education, as it strengthens our knowledge of the world, not just that of our career choice.” This statement reflects awareness that learning can be applied to many facets of life.

Urgency with regard to social change.

Reflections on agency included a focus on the urgency of needed social changes. This urgency comprised a very strong subtheme running through student essays. Discussions of
urgently needed social change typically focused on the narrow window of time available to
address socio-ecological problems together with the severity and/or scope of the problems faced.
Some students noted that long term, intergenerational affects will derive from our actions, or lack
thereof, in the present. The following quotations offer examples of student reflections on
urgently needed social change:

We have to come together as a worldwide community, and treat this situation like what it
is, a disaster. We should treat this situation like a meteor hitting the earth, because it’s
going to have just as much of an impact.

The longer we wait to make the drastic changes we need to on a global scale to stop the
quick depletion of the planet’s finite resources, the more abrupt and shocking the change
will be.

_Awareness of socio-ecological problems as a precondition for agency._

Awareness as a precondition for agency was a moderately strong theme that emerged
from student essays. This theme is present in the following statements:

Overall this class project and the class in general, has been very beneficial to my
education and to my life. I believe that it is a class that everyone should take, in schools
all over the country. I feel that the most important thing that people can do is get educated
on these topics. The first step in making a difference is knowing what the problem is and
deciding to make changes in our lives that will contribute to a solution.

Knowing the true extent of corruption, or at least the true extent of the potential for
corruption that is prevalent in today’s social systems, is important in order to combat said
corruption.

With regard to energy specifically, several students mentioned having a newly acquired energy
consciousness that had prompted them to take at least small actions to conserve.

_Reflections on specific actions planned or taken._

Discussion of specific actions students were already undertaking or planning to
undertake in their lives also figured prominently in their essays as the following examples
demonstrate:
This course has given me the firm nudge I needed to stop being a passive environmentalist and become an active environmental citizen. I can no longer buy anything without serious consideration as to whether it’s necessary and where the thing I’m purchasing came from as well as the real cost to our planet. I made the decision to use that criteria for my purchasing decisions back in October and a strange thing happened. Since the time I chose to look at purchase through that lens, nothing has met the criteria and aside from food, I have purchased nothing. At the risk of sounding dramatic, everything I see appears to be literally covered in oil and I cannot bear the idea of my purchase being responsible for the manufacture of one more unnecessary plastic object. Oddly enough, I’ve also found that the quality of my life has not suffered; on the contrary it actually seems better. By choosing to open my eyes and be aware of the impact of my choices it’s as if my mind blooms ideas about ways to use and reuse what I have as well as creative ideas for procuring what I don’t have from other sources that don’t require buying newly manufactured goods…. This is what much of Sharon Astyk’s book was about; the ways that average people can make a difference by how they choose to live their day to day lives.

The goal of my future in terms of family is to prepare my children to become self-reliant and to make choices that will increase their success in the face of a changing world. Many of these preparations still need to be researched in order to educate my children, but End of Oil class has adequately inferred the importance of these skills for the future.

A good number of specific actions planned or undertaken by students in response to taking the course focused on conservation of energy and other resources and on reducing waste. In fact, discussion of small ways to reduce consumption of energy and materials and to reduce waste were among the strongest themes across student essays. The following quotation serves as an example:

Conserving has been a good policy I have been adopting and trying to wean into a way of life without some of the daily processes that I have been so accustomed to. Conservation can only go so far because we still are going to run out of resources in the future. That’s why I have been trying to not give myself an option to cheat. Walking up to campus instead of driving has been a hard task I’ve been working on but it’s always easier to make an excuse to drive. So I made it a goal to walk to campus next semester at least 3-5 days out of the week. I have also reevaluated the types of foods I eat and am trying to stay away from genetically modified foods. This is hard because organics are so expensive….

With regard to energy use and resource use more generally, students often mentioned the value of individual change as an initial step in social change. They also often pointed to the value
of cumulating, small or large lifestyle changes in realizing widespread social change. Student comments in these areas ranged from general statements about heightened awareness of personal energy use or about the need to conserve or simplify lifestyles to very specific ideas about how to conserve. In these discussions, students emphasized recycling and reuse of various products and/or packaging. One student who expressed feeling overwhelmed and somewhat hopeless with regard to the scale and scope of sustainability challenges saw value in taking small steps to reduce her carbon footprint:

I have always kind of felt helpless when it comes to making a difference. Through the course I have had discouraging thoughts about the future and what lies ahead, it seems that the problems that have come forth, such as pollution, natural resource depletion, overpopulation and over consumption, are too developed and progressed to be reversed. I have however, been inspired to continue to make little changes in my life to reduce my carbon footprint.

The recycling theme was weaker among student essays from the fall 2010 section of the class, but very strong in essays from the winter 2010 section. This difference may derive from the difference in the action project. The individualized and small group projects completed by students in the winter 2010 class often focused on various forms of recycling and reuse of materials and products. One student commented on recycling as a theme in student projects by saying that “recycling was not really mentioned throughout the class but it was a huge part of our projects.” The recycling theme in student essays from winter 2010 might also have been strengthened because students presented their projects to the full class at the end of the term, shortly before student reflective essays were due.

With regard to specific actions taken, some students discussed that they were producing and/or consuming more local food, or that they had plans to do so. The following quotation presents an example:
Another change that I found weird about myself for thinking, was actually wanting to have my own garden. I say weird because never before in my life have I considered this something that I would desire. Nonetheless I have decided that I think it would be important for me to someday grow at least a portion of my own food. Now I realize that this is a little unreasonable at my current point in time but someday when I am shopping for my very own piece of property, this will definitely be something that I will be keeping in mind.

More than one student related her/his local food agency directly to the Apple Days experience:

Personal experiences are always more empowering to me than is a book or teaching on a subject. I find that opportunities like [Apple Days] are very empowering, especially if you are aspiring to become a local food producer. Seeing the community support at the Apple Days Festival was great, it was like a community within a community. I will possibly reach out to those involved in the festival to collaborate, get ideas, or just simply support each others’ endeavors. I am sure many of the faces at the Apple Days festival are also those at the farmers market, green business roundtables, and community gardens.

I will use this experience [Apple Days] in the future and even continue participation. I would like to volunteer next year. It is inspiring to see people really coming together and prove that we can really live locally! It also made me want to learn more about bees and beekeeping, wild and edible plants, and even write songs to share my beliefs and knowledge of issues today and that we can be strong communities and make positive change.

With regard to taking specific actions, some students discussed how the course had influenced their purchasing decisions. The following quotations demonstrate this focus:

When we discussed in class the idea of purchasing new vehicles, I had the idea that one day I would be wealthy, own a nice, expensive muscle type car. Now, I have the vision of buying a car that will get me from A to B with minimal cost, last for more than a couple years, and is gas mileage effective. I have used the same car for the last 5 years, and wish to continue that trend. Not only is it better, as purchasing a “better”, and more gas efficient car sometimes actually is not worth it as in order to build such a car it still requires a manufacturing company to use oil for shipping and creating the product.

It may sound silly, but I quit using straws because they are a complete waste of plastic. They may keep my teeth from getting a little chilly but they are used only once before being dumped in a landfill for millions of years. I can name hundreds of other useless plastics we consume daily that are simply, a luxury. I also quit buying new clothes, 80 percent of what I wear is second hand. Not only am I helping the environment by reusing but it makes my style unique and cheap.
I look at many products both large and small scale, meaning I consider the impact of the creation of the product, as well as things like how long it will last me and what I’ll have to do with it when it has fulfilled its purpose.

Related to the theme of taking action, a few students also discussed the value and/or challenging nature of manual labor in an energy constrained world.

**Career impacts.**

A small number of students noted that the course had in some way influenced or altered their career plans by focusing their attention, not only on making money, but on how to earn a living sustainably. One student stated:

As for my future plans, I am an entrepreneur and really plan on starting a company at some point after graduation. These company ideas have been based on ideas of globalization and even moving to Europe and starting a skate shop. With rapid depletion of resources, mostly oil, these dreams of easy transportation and traveling have come to a speed bump. They have not stopped me but I am shifting my business ideas towards things that are local and can help the community without exploiting resources and people.

With regard to career impacts, the following quotation from a student paper demonstrates a clear recognition of the contradiction between a capitalist economy and a sustainable one and how that conflict translates into issues of personal integrity in business practice:

It is extremely hard to come up with a business plan that is profitable AND energy efficient. I think one of the hardest things I will face in the future, as a business man, will be to meet the need of my customers without sacrificing my integrity.

It remains to be seen whether and how this student might resolve this conflict.

**Collective agency.**

As discussed above, the theme of collective agency in community is very strong in student essays. Students also addressed forms of collective agency that were not specifically related to localized communities, however, and this theme is moderately strong. Examples of student reflections on this theme include the following:
This is something I think that everyone has to understand, the power is in the people, rather than the government, and if we, the citizens decide that we want something changed, then we can organize to have something changed and the government will have to listen.

We have the ability right now to shape our future. We can either continue on the course we are on now and deplete our limited resources as rapidly as possible until we are faced with a likely deadly and abrupt change or we can try to make the transition easier and less drastic. Our future is completely dependent on society’s collective effort.

One person referred to prominent social movements in the history of the U.S. to make the point that collective agency is very challenging but necessary and meaningful as resistance to domination:

The eight hour work day, suffrage, civil rights, etc. had to be fought for, tooth and nail, to make progress. As long as we sit idly by and hope someone else takes care of it, our rights WILL be taken away. Our rights to clean air, water, food, and even expression are being eroded and it seems that nobody cares.

_Educating others._

Educating others with regard to peak oil and sustainability was a very strong theme in student essays from both terms. The strength of this theme may derive in part from the essay prompt which asked students to discuss important ideas from the course that they would like others understand.

Many noted that they had discussed course content with others and had even taken action in collaboration with roommates or family members in response to what they had learned in the course. Some commented that it is difficult to educate others who tend not to believe in the urgent need to address pressing socio-ecological problems. Several students commented on the value of teaching by example, for instance, through engaging in community gardening. Some mentioned recommending the course to others or that it was recommended to them. Other students discussed feeling better informed themselves as a result of taking the course and, therefore, noted that they felt better prepared to educate others. Apple Days was mentioned as a
form of community education, and one student also emphasized that participating in the event made her feel more optimistic about the possibility of educating others. A couple of students who developed and participated in educational public performances for their small group action project expressed a desire to continue to educate others through artistic expression. Several students commented specifically on the need to have an open minded approach to educating others and/or that they had appreciated this kind of approach in the classroom. The following quotation from a student paper emphasizes some of these themes:

I feel that the most important information that can be distributed from End of Oil is the simple fact that hydrocarbon energy sources are finite and as such, they will be used up. I have discussed this fact with several of my neighbors and it seems like the idea was new to them. I don’t feel that it is necessary to preach or warn of the impending difficulties, only to educate and let people make the preparations that they feel are the most important. I hope I can relay this information in a manner that is similar to Tina’s teaching style, inform but don’t infer.

*Praxis.*

A small number of students articulated a clear vision of agency as praxis – as a unity of theory and practice – though they did not use the term praxis in their reflections. The following quotations offer examples:

This class fits into the idea about an EGC, or education of global citizenship class, because it made us aware of what was going on and how we can change the world as we see it, by our action whether consciously or unconsciously.

The single most important recurring thread to me was that the point of this course is that we all must not only recognize the problem, but we all must also take an active role in constructing some positive interventions. This is a personal duty to ourselves, to our community, and to the world – today, tomorrow, and in the future.

Though educational techniques have been, and will continue to be questioned by scholars, many agree that experiential activities aid in the effectiveness of a lesson. These activities allow people to engage in an experience, reflect on it, understand its meaning, and apply it to their own life.
It is clear from their essays that a good many students were already expressing their agency by taking specific action related to what they learned in the course, or that they had plans to do so. It is also clear that many students recognized the value of critically informed action to mitigating the converging crises we face. It is my hope that many students who take the class will continue to act on what they have learned, but of course, I cannot be certain that they will do so.

The Learning Experience

In this section, we explore thematic content from student essays that relates to their experience as learners in The End of Oil. This section is divided into several subsections representing learning-experience-related subthemes.

Integration of the action project with the conceptual content of the course.

Although, as I will discuss in more detail in the conclusions section of this chapter, I have often wondered about how well students integrate their action project experiences with their conceptual learning in the course, a good number of students demonstrated fairly strong integration in their reflections. Examples of how students saw the Apple Days project as integrated with course content include the following:

Conservation was stressed throughout our course as well as in class readings. During Apple Days we learned how not to waste any resource, without us those apples would probably be sitting on the ground rotted. Even the pulp from the pressed apples, which may seem like trash to most people, was dried and used as sugar. Since it was right in town, we were all able to walk/bike there saving fuel. We also used hand presses for the apples instead of electrical, making it even more beneficial to conservation.

It is really nice when you can discuss issues like local food, sustainability, renewable resources, and come together as a class and community and see how we can tackle some of these issues. I feel like learning in the classroom and then putting it all together and being part of a community event like Apple Days is an awesome way to incorporate class material.…
Two students who completed vermiculture projects in winter 2010 offer examples of how some students were able to integrate their individualized or small group projects with course content in multiple ways:

By using this type of composted materials [worm compost] to add to a garden, then there would be less of a need for the companies that sell us food, both produce and animal products, which would in turn lead to a decrease in power for oil companies, which would in turn lead to a decrease in the amount of control that oil, coal and natural gas have in our politics both nationally and globally. This would be a healthy alternative for the world.

I loved the project that I did for this class. Doing a worm bin was one of the best parts of my semester. It is easily relatable to this class because soon everybody is going to be required to use all of what they have. This is an easy thing to do with food scraps that will help you grow more food in the future. In the future I think that we will not be throwing anything away. Resources will be so scarce that we will be able to find a practical purpose for all of these things that we just throw away right now. People in the future will look back at this time in history and just wonder at the excess that we must have been living in to be able to throw so many useful things away. I will definitely use this knowledge that I have gained from this project in the future. I am sure that I will have a worm composter going for the rest of my life. Like I said in my presentation it is kind of like having a bunch of little pets. You start to really look after them and get to know what kinds of food they like and things like that.

One student reflected upon the course theme of reciprocity in human/nature relationships as this theme relates to vermiculture and gardening. This student did not complete a vermiculture project herself. Her reflections were derived from listening to the presentation given by the student quoted above and from completing a container garden project herself.

One [student] stated, ‘The worms turned into little pets and I grew attached to them.’ It is pretty interesting how a person does become attached to something such as a worm or a plant. I actually became attached to my plants. I think we become attached to what we are taking care of because not only does the plant or worm rely on us to take care of it but we rely on it to take care of us as well.

One student who completed a small group project noted that not all aspects of the project were sustainable, but acknowledged that this work represented steps in the right direction:

Areas of our [multi-person bike building] project that are not and were not sustainable did and do exist…. If we had more time, it would have been possible to do the grinding and
cutting using energy-free tools like saws and files, but welding is an integral part of the process and, to my knowledge, is impossible without electricity and expensive gases. Also, as with all bikes, ours is subject to wear, tear, and degradation, mostly in the wheels. Tubes and tires (both petroleum products) will need to be replaced over time. Of course, for the amount of electricity that went into the production of the bike, it seems to be far worth the resource. Our bike, besides the replacement of tires and tubes, should be able to survive for our entire lives as it is very simple and structurally sound…. This project is tied in wonderfully with the course as it was a hands-on experience that made us think about things like sustainability and how we could use our trade skills to influence and participate in our community…. We already have had several people around town express interest in getting similar bikes made for them and are ready and willing to pay/trade us for our services.

The above reflections integrate nicely with the course theme of sustainability. They also point to this student’s abilities to think critically and consider ways to improve upon personal and collective action, a process of reflection that is at the core of praxis.

In sum, many, though not all, students demonstrated that they were able to integrate their project experiences with the conceptual content of the course, and they articulated conceptual integration of their work with a wide variety of course themes.

*Agency with regard to action project choice.*

Another aspect of the projects that I have found challenging has been balancing student choice of project with time efficiency for me as the professor. Students who completed individualized or small group projects seemed, by and large, to be very satisfied with what they had done. The atmosphere in class during the presentations was energizing, and many students expressed verbally and in their reflective essays a good deal of satisfaction with their chosen work. One student commented explicitly on the value of personal choice with regard to the project:

*This project greatly enhanced my learning in this course because having this opportunity to work with the bees has fulfilled a desire that I have had for years. I have learned so much about bees, beekeeping, and the importance of them recently and that experience alone has made me incredibly grateful for this course. I really appreciated that we had the*
choice to work on the project that we wanted to because I was much more engaged in this project probably more so than I would have been any of the other ones.

Organizing student participation in Apple Days each fall takes up less class time than does organizing and presenting individualized or small group projects. Though students participating in Apple Days generally do not seem to feel as personally empowered at the conclusion of the project work as do those who undertake individualized or small group projects, as noted above, these same students often refer to Apple Days as an exhilarating and empowering experience with regard to the power of community.

Critical thinking.

As discussed in chapter six, critical thinking is a foundational activity for teaching and learning that is transformational in nature (Brookfield, 1987, 2000, 2005; Freire, 1970/2000; Mezirow, 2000). Some students directly referenced their course experiences with critical thinking while also suggesting the value of critical thinking as a practice in daily life. The process of questioning was the central activity mentioned in students’ discussions of critical thinking – questioning authority, powerful entities, news and other information, and one’s personal assumptions. One student noted that successful deception by powerful interests reduces critical thinking among the public. One student commented thusly regarding the power and importance of critical thinking to social change:

On an individual scale, the strongest actions I could suggest at this point would be to learn open-minded thinking, and to learn as much as possible about the truth of the world. The news spits things at us, and a lot of people just take it for granted that it’s the truth. Individuals need to take responsibility for the things they know because otherwise things will remain the same. As for larger entities, they need to be made to serve the people again instead of using them.
**Worldview change.**

Change in worldview was a fairly strong theme in student essays. The strength of this theme is likely due, in part, to my specifically asking students to discuss whether or not they felt their worldview had changed as a result of taking the course and why or why not.

A good number of students noted that their worldviews had not so much changed, but rather had deepened or had been reinforced in some way through their learning in the course. One student asserted the following:

This class did not do a whole lot to change my worldview, I’ll admit, what it did do though, was to inform it. I now feel like I have a good understanding about what is going on in my own world, and I feel like the feelings that I have about oil, conservation, the importance of community and family, along with a drive to preserve the environment as we know it, are all now valid and legitimate.

Worldview changes noted by students that could be described as distinct departures from their previous ways of seeing the world ranged from changed views regarding a fairly narrow area of belief or perception to changes that I would call deeply transformative. This quotation from one student’s essay offers an example of a changed worldview within a fairly narrow but important area:

My view of the world has also changed throughout this class, mostly because I am a business major. In all of my business classes we were taught how to make the most profit and be the most efficient. Although I was aware of the evils of corporations, I did not have much knowledge on those evils until this class. Therefore my view of the world has changed because the corporations in America are not looking quite as glorious as they once looked.

With regard to transformative changes in one’s worldview, I refer to transformation as defined by Mezirow (2000). As discussed in chapter six, according to Mezirow, transformation occurs as a result of a student’s encounter with a deeply disorienting dilemma that calls foundations of his/her belief system into question. The encounter is, not only intellectual, but emotional, and the student can experience one or more negative emotions as a result, including
feelings of betrayal, guilt, shame, anger, or disappointment. Transformation occurs when the student significantly reshapes her/his system of beliefs to incorporate the new information that had comprised the disorienting dilemma.

A handful of students in each section discussed worldview changes on this order. Some of these students referred to the class as an “eye opener.” Many students reported feeling strong emotions in connection with taking the course, both positive and uplifting and negative/depressive, though negative emotions were mentioned much more often than positive ones. I believe these negative emotions (and often the positive ones as well) are in some cases associated with students encountering disorienting dilemmas, but I cannot assume that all of these encounters resulted in transformation. The following quotations taken from student essays demonstrate various phases and instances possible transformation:

I left class after watching some of the films we viewed very depressed, but in a way I think it was a good thing.

After this semester, I feel I have gone from having a very naïve view on things to feeling incredibly disappointed at the way this world is run. Disappointment is almost an understatement as there has definitely been a shock from what I’ve learned. The world truly operates on a cash flow and bottom line, and individuals do not matter except when they further growth. I’m concerned that I’m a cog in this giant money press and I’m none the wiser. It is a very heavy thought and will take time to fully comprehend. That said, the rose-shaded glasses are definitely fractured.

Sure, a lot of what we cover in class seems to be somewhat depressing as it divulges an unclear forecast for our future as individuals, communities, and nations, but at the same time, knowing these things and preparing for the changes to come is the best way to live great lives in the future.

First off I will say I was really excited for this class going into it. Now I feel excitement to be motivated to make changes to my life and help change community life to fit a sustainable practice. I feel this motivation comes from a very strong disheartening feel I got from a lot of material presented in the course. Disheartened due to the severity and reality of the issues presented in the class.

We are at the forefront of a major, drastic, life changing occurrence and everybody has different views on how to deal with it and what the cause is. Anxiety, excitement,
curiosity, pressure, confusion, determination; these are just a few of the thoughts and emotions that accompany the change mentioned above. This class has been very enlightening and helpful in finding my own view. It is still in pieces but beginning to fall into place and education is the only thing to assist in this process.

Over the course of this semester I have been tested, quizzed, been angry, sad, happy, disappointed, depressed, and complacent, but of all the courses I have taken this class came to mind most often at home or when spending time with friends and family. There are times when I disagreed with the course teachings, wondering if they were truth, or whether just as much of a fabrication as the other side of the argument, however, in doing that, I was able to learn more about what personal opinions I have in relation to the themes of the course, and why I have those opinions. This course opened my eyes further to the dire need for a change in our world. That without change we, as a human race, are heading towards a future that cannot be sustained, and that we may not be able to survive through.

All in all, I think this class has really challenged my view on how I as an individual fit in this world. What my role should be as a person as well as what everyone else’s role should be in relation to each other. We need to start relying on each other more on a smaller scale. Right now our consumer-driven society is causing us to try and push further and further away from each other and it all has to do with not having to rely on your neighbors for anything. Why would I ever want to rely on my neighbor for anything when it is so much easier to go to the store and buy something I need for myself? We are headed in a scary direction and I only hope that we can get shaken from our current path before we run out of time.

One student linked personal transformation with the course’s emphasis on action:

Of all the EGC courses that I have taken here at Fort Lewis, I think it’s safe to say that this is the only one that has actually made me reconsider the way I want to live my life. We covered a lot of material over the course of the semester and it really opened my eyes to some things going on around me that never even get discussed with any real thought. If that were all however, this course would not be different from any of the others that I have taken. I think what sets this class apart is because instead of just learning about how terrible things are in the world and how everyone is contributing to global problems, this class actually took it a step further and addressed potential solutions.

One student discussed fairly extensively what seemed to be personal transformation resulting from taking The End of Oil, but he contradicted these statements later in his essay, leaving the impression that he remained conflicted with regard to the course experience. The student offered these thoughts at the beginning of his essay:
Basically our way of living has made the future of our world a question mark. This has been the theme of the course End of Oil from day one. It has been a scary and interesting ride with everybody pointing fingers at every issue. I have learned more than I ever dreamed about learning throughout this semester about the world we live in and our oil dilemma. This knowledge has been bitter sweet to swallow due to the frightening facts. This class has made me think on my own and question everything from people’s opinions to the facts themselves. There is no doubt in my mind that this class has changed me as a person and has made me think of ways I can be a better human on earth.

This same person stated the following near the end of the essay:

What do I do with these facts, and how do I use them in the future? It is scary to think that the world as we know it could end tomorrow. I am not going to change the way I am living my life now to perhaps prolong this inevitable event. I guess if everybody is contributing to the consumption I will too because I am not going to inconvenience my lifestyle by riding a bike instead of driving a car or spend my hard earned money on expensive technologies that would be sustainable when I could use those funds to go on vacation or make a large purchase. Sure people could call me dumb for doing what the corporation wants me to do, and not caring about our children’s earth. I am not going to live in constant worry about what can happen when no one else will stop consuming. No one else is putting in any effort to stop the end of oil. This sounds horrible for me to say, but this class has been great for me even though it has not changed the way I live. It has however affected my thinking. It has showed me the bubble that we are living in and that all bubbles pop at some point. A great example is the housing bubble and crash we witnessed where a few, educated people knew it was going to happen. With the End of Oil course I now know that the depletion of this resource is imminent. I know the facts. When the time comes I will be stocked up and ready.

These last quotations remind me that choosing, as a critical pedagogue, to participate in rocking people’s worldviews is a heavy responsibility with an unpredictable outcome, and that the full outcome with regard to particular students may take a great deal of time to emerge. As I have argued throughout this dissertation, however, it would be a heavy responsibility not to rock people’s worlds when one has very good reasons to believe that the way people are living constitutes personal, societal, and ecological suicide. Still, as educators, we must exercise care as best we can in working with students involved in learning deeply disturbing material while realizing that knowing how much criticality is too much for any one student at any particular time is not entirely possible.
We now turn from exploring the learning experiences of students in The End of Oil to an exploration of how those experiences and the conceptual content learned in the course manifest in student ideas about hope.

**Clear-eyed Hope**

Few students expressed feelings of total hopelessness or helplessness in their final essays, and none of the students in the two sections discussed here did so, though as noted above, a small number of students expressed a reluctance, if not unwillingness, to take responsibility for social problems related to sustainability and resource depletion. Many students did not address the theme of hope directly, though by including discussion of actions they were taking or that they planned to take, they implied that these actions were worthwhile and that, therefore, there must be some glimmer of hope for themselves, their communities, and the world. A good number of those who discussed hope directly expressed what I call “clear-eyed hope” – a determination (following an acknowledgement of the extensive and deep problems we face) that there is still value in doing the right thing. This form of hope, so eloquently expressed by Václav Havel (1990, p. 180),[^71] is not necessarily a belief that everything will turn out alright, even if everyone participates in facilitating a positive outcome. This incarnation of hope is discussed in The End of Oil;[^72] therefore, students are familiar with it, but they are not required in any way to address this theme in their final essays. Some students expressed clear-eyed hope quite eloquently in their own terms, and it is my hope that this idea will stick with them in the long term as the sustainability crisis continues to unfold.

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[^71]: Havel states:

> Hope … is not the same as joy that things are going well, or willingness to invest in enterprises that are obviously headed for early success, but, rather, an ability to work for something because it is good, not just because it stands a chance to succeed. The more unpropitious the situation in which we demonstrate hope, the deeper that hope is. Hope is definitely not the same thing as optimism. It is not the conviction that something will turn out well, but the certainty that something makes sense, regardless of how it turns out.

[^72]: I reference Havel’s notion of hope in class discussion. In the fall 2010 section of the class Orr’s *Down to the Wire* (2009) was used as a course text. Orr repeatedly discusses a version of hope akin to that described by Havel.
One student discussed how guest speaker Riki Ott\textsuperscript{73} had led her toward a sense of clear-eyed hope when she was feeling rather powerless after learning a good deal about corporate power and influence. This statement shows that exposure to the idea of agency and to examples of agency in others can contribute to students developing a sense of clear-eyed hope:

Unfortunately my worldviews have changed for the worse. I feel like I lost a bit of faith in humanity because of the way governments are run and how the power of corporations has such an impact on life. After indulging in the reading for this class, it was slightly frightening to find out the motives behind these major corporations that people have no control of modifying. For instance, major oil companies invest in government interests, which many people do not even know about. Although I became aware of the lack of control citizens have, the talk with Riki Ott helped open my eyes to the amount of people who really do want a change in the way our society is functioning.

At least one student directly expressed a sense of clear-eyed hope as an outcome of his agency as experienced through the course action project:

[Apple Days] was the contrast to all the negative things that were brought to light. Given the material, if all that had been presented were the bad, in my current place of understanding I would have simply shut down or even dropped out from it being too intense to process. Essentially, Apple Days provided me with the positive ideals I needed to absorb the information.

The following quotations from student essays express a sense of clear-eyed hope as an outcome of the full course experience:

I like the way that [Heinberg, author of The Party’s Over] approached the subject [of peak oil], because it wasn’t about how humanity is in huge trouble and there is nothing we can do about it, rather it was about how we need to accept the position that we are in and figure out a way to make things better for ourselves now and in the future. This is also one of the core messages in my favorite book from the course, that being Depletion and Abundance [by Sharon Astyk]. Sharon Astyk is one of the single best writers that I have encountered that can convince me that there is hope in this world. She gives her readers hope rather than leaving them feeling helpless. I can’t tell you how valuable I felt that book was, because she is living a real world example of how to combat peak oil. It’s from her book that I have taken examples of how to change my day to day life.

\textsuperscript{73} Riki Ott is a grassroots environmental and political activist who works on issues of oil pollution and its impacts on human and environmental health. She is also participating in an effort to rescind corporate personhood in the U.S. and on other related issues. Her work figures prominently in the film Black Wave about the impacts of the Exxon Valdez oil spill on both people and the environment. I showed this film in both the winter and fall 2010 sections of the class.
I thought by the end of this class I would feel depressed, and of course I came out of class some days ready to curl up into a ball and cry. But now that the class has ended, I am left with more inspiration and hope than anything else. I see the energy crisis as a challenge, and I know it will not be easy. Now that I have more knowledge on the energy crisis, thanks to this class, I feel like the transition to a new lifestyle will be easier, and I am willing to embrace this new lifestyle when the time is right.

If there is one thing I most cherish in taking away from this course, it is the hope that sustainability on a personal level is plausible, and that the chances of finding a community/rural neighborhood that feels the same is as well. As Orr mentions [in Down to the Wire], optimism is thinking positively while hope is reached after critically examining information. This class has given me hope on this scope.

We have now concluded our exploration of student reflections on aspects of their learning experience in the course. We will now consider the themes related to the course as a form of praxis.

**The End of Oil Course as Community Praxis**

A conception of the course as a form of community praxis akin to the concept as developed in this dissertation was not a strong theme, but some specific reflections related to praxis were quite powerful and demonstrated that the course is having some impact beyond the classroom.

One student discussed how he had been very impressed with the actions of his friends who had taken the course in a previous term. He stated that, when he returned to Durango in the fall, he saw that these friends had been very busy over the summer gardening and growing their own food. He was impressed that, when they were cooking, instead of going to the supermarket, they went into their garden to get some of the food they had grown.

Another student discussed the impact of the course on her roommate who had taken it in a previous term. She also discussed how the course was continuing to influence both her and her roommate in their thinking and actions:
I remember my roommate taking this course last year. She used to come home and tell me how crazy it is going to be when we run out of oil. That was the semester I learned plastic bags were actually made out of oil, and that those bags were polluting our oceans. Since I love the ocean and all it is, we switched to re-usable bags permanently. This class had a significant impact on my roommate, and because it seemed so radical I decided to check it out…. Over this semester, I have concluded that this course is radical indeed. Through the lens of peak oil, the way I perceive my entire life has changed. I have been forced to ask myself, “What does happen when oil runs out?” Life as we have come to know it in America will change forever. Our cars won’t run, there will be no plastic, ultimately we won’t be able to operate at the intense capacity that we do now. Capitalism will change, and our communities will have to look to themselves in order to survive. The entire American ideal of super-independence will be ultimately destroyed. As a people we will have to learn how to communicate with each other and care for our environment…. In a very interesting way, I find the problem of peak oil a good thing. Personally, it has caused me to step back and ask myself, “What is truly important in life?” After some serious consideration, and the help of Sharon Astyk [author of *Depletion and Abundance*, a class text], I feel it is people. Life is all about the people around you and the relationships you build. We only have a limited amount of time on this earth, but in America we miss it because we get so lost in money and power.

This student and her friend are clearly carrying forward with at least some action beyond the course experience. The student quoted here is also voicing a fairly deep and comprehensive analysis of the global implications of oil depletion and considering priorities for individual and collective action. Although she is not saying here exactly where her insights may lead her, she seems to be building a foundation for praxis.

This same student commented on the impact Apple Days had had on her thinking prior to taking the course:

I remember the first year we had the event [Apple Days] in Buckley Park. A friend and I happened to stumble upon the huge pile of apples that people were collecting. We actually had no idea what was going on, so we grabbed an apple and started to play hacky-sac with it. Pretty soon we saw people pedaling in towing large amounts of apples behind them. It is a scene I will never forget. Never before had I seen so many people come together to celebrate something as simple as apples. At that moment, I fell in love with the idea of simplicity.
It is my hope that Apple Days has similarly helped other people in the community to recognize the value of local food, to see the joy that celebrating it can bring to a community, and to realize the possibility for community building that engagement with local food represents.

As discussed above with regard to agency and community building, a good number of students recognized the value of the action projects, not only to themselves, but to the wider community. This recognition points to the idea of the course as a vehicle for community praxis.

We have now concluded our exploration of the themes that emerged from student reflections on The End of Oil course. In the following chapter, I will offer my conclusions about how this exploration has informed my pedagogy and about how my findings, interpretations, and conclusions might contribute to the critical pedagogy of sustainability as practiced by others in other contexts.
Chapter Eight:  
Conclusions on Living and Learning Sustainability in the End of Oil Course

After carefully examining students’ final reflective essays from two sections of my End of Oil class, I have concluded that much of what I have proposed throughout this dissertation, with regard to both the conceptual framework and the processes of the critical pedagogy of sustainability, is to some extent possible in a single college course. At the same time, I have concluded that this pedagogical praxis is quite challenging for the professor in terms of her/his time commitment and can be challenging in terms of professional and budgetary support as well. I have also concluded that the outcomes for students are incomplete and tenuous. Reflecting on my own learning over the years and throughout writing this dissertation, the incomplete nature of student outcomes is not at all surprising. After all, I consider my own learning, even as it relates to issues covered in some depth in this dissertation, to be quite incomplete. I do believe I have offered students a strong foothold in developing counterhegemonically-oriented thinking and praxis and that some students will continue to develop their worldviews and their actions in this direction. Whether, how, and when any individual student will continue to develop a counterhegemonic worldview and praxis, however, is impossible for me to determine.

Carefully examining student reflective essays has also led me to conclusions about some specific aspects of The End of Oil. I argued in chapter six that critical pedagogues must be concerned, not only with what we teach, but with how we teach. I argued that courses must call upon students to name the world and that professors must leave room for students to engage in their own meaning making in response to encounters with disorienting dilemmas. Striking difficult balances between more comprehensive coverage of complex issues and problems, on the one hand, and taking the time necessary for students to voice their perspectives and engage in projects of their own design, on the other, is challenging. This balance is of the utmost
importance, however, because sustainability-oriented educators should work against reinforcing patterns of passivity in the face of socio-ecological problems. My theory of pedagogical praxis as a unity of counterhegemonically-oriented theory and agency combined with the importance many students ascribed to action projects with regard to their learning and inspiration for future action encourage me to continue offering service learning experiences in The End of Oil. I believe, as some students confirmed in their essays, that these experiences also serve as vehicles for moving toward clear-eyed hope in the face of the critical theoretical content of The End of Oil that is mostly quite heavy and dark.

My examination of student essays also calmed an ongoing concern I have had about the conceptual integration of the action project with the overarching course content. Since I have 30-35 students in each class, since I cover so much material (three to four books plus additional articles, book chapters, films, and websites), and since I require students to write approximately six papers per term, the action project can receive only so much of my and my students’ attention. Unless I cut back on course content in a significant way, class time devoted to project work, to discussing the project(s) in class, and to relating this work to course content will remain somewhat limited. Although integration was described as difficult in a couple of instances by students in both sections of the course, a good number of students were able to articulate in some detail and with some enthusiasm how the project(s) were related to other course content. Although achieving a balance between course comprehensiveness and agency-oriented projects will continue to be challenging for me as a professor, the ability of students to integrate action projects into a larger conceptual framework encourages me to continue including service learning as an important aspect of the course.
With regard to large-group, community-oriented projects such as Apple Days versus individualized or small group projects, I don’t know that one or the other kind of project is best; they are simply different in their outcomes with regard to the student learning experience. Both sorts of projects offer ample opportunities for students to integrate their actions with the conceptual content of the course, and I will likely continue to offer either one or the other kind of project experience depending on my own time constraints and on community needs.

In chapter six, I emphasized systemically-oriented critiques of global political economy as key aspects of the critical pedagogy of sustainability. Given the amount of class time devoted to illuminating the inner workings of neoliberal globalization, I would have hoped for greater emphasis in student reflections on specific aspects of global political economy. Given the complexity of the issues covered (and the fact that many of these issues were covered early in the term), however, my findings are not entirely surprising. Judging from the content of student reflections, it seems likely that, even though a great deal of detailed material was presented and discussed in the area of global political economy, most students drew very general conclusions about the enforced dependency and corruption that permeate the system. It seems students may have learned just enough about global political economy to see the system as generally some sort of bad and risky deal. Given the emphasis students placed on agency and community resiliency, such conclusions seem to have driven students to conceptualize alternatives to globalized political economy.

With regard to the concept of enforced dependency specifically, although students did not flesh out full blown conceptualizations of this phenomenon as a basis for their analyses, many students did evidence systemic thinking with regard to social power and complex interrelationships within the world-system. If I want future students to more fully conceptualize
enforced dependency as an important aspect of globalized political economy, I will need to require readings that focus more explicitly on enforced dependency as a distinct concept. As noted above, some students have recognized dependency as a potential source of vulnerability for individuals, communities, and nations. Helping students to also recognize the enforcement aspects of enforced dependency would help them to deepen their counterhegemonic thinking with regard to global political economy. It is still my hope, as my pedagogy continues to develop, to help students to unite enforced dependency-based critique and (re)inhibitory praxis in the form of service learning projects.

With regard to political economy more generally, if I want future students to come away with a more detailed and more complete understanding of what I conceptualize as global political economy, I may need to be more explicit about conceptualizing various forms of political economy (using labels such as subsistence economy versus surplus production or pre-capitalist, capitalist, and post capitalist political economy) so that students will have an analytical heuristic that can be used to integrate and articulate their understanding of political economy. What I have done is to contrast localized political economy versus globalization, and it seems that students have been able to use these conceptualizations reasonably effectively as analytical lenses on their community and the world. They have also been able to use these conceptualizations as a foundation for planning and, at times, engaging in counterhegemonic action.

The emotional aspects of taking the course have also proven to be an impetus for actions undertaken or planned by some students. A good number of students referred to negative emotions they experienced as a result of taking the course as uncomfortable but important to their learning. They also often linked their discussion of these emotions with discussion of

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74 Since the concept of enforced dependency is a newly named concept within political economy that I extensively developed in this dissertation, my future publications on this concept will likely become course readings.
personal actions they were taking or planning to take. Some students expressed a distinct sense of empowerment and/or satisfaction that emerged from their action project, and a few directly mentioned being inspired to engage in further action.

Even though there are a broad range of emotional reactions to the course expressed by students, The End of Oil remains very popular each term it is offered. It usually fills within two days of the start of early registration. Even when a second section is offered, the course still fills very early, and it is clear from the content of the essays examined here that many students are generally aware of the course content before enrolling. I conclude that many students are interested in the counterhegemonic content of the course, even if they are unaware at the start of the term that much of this content will be difficult to grapple with, both intellectually and emotionally. I do not plan extensive changes to the course with regard to its intellectual and emotional content.

In an overarching sense, as student reflective essays demonstrate, The End of Oil is a challenging course for students. The course material is a lot for students to put together. Furthermore, the length of time devoted within the institutional structure to courses like The End of Oil does not approach the length of time necessary to developing the in-depth relationships among people and with places that are foundational to sustaining deep processes of sustainability-oriented social change. It is not surprising, therefore, that systems-level views expressed by students in their reflective essays are not as broad or deep as I would hope. It is also true that I am hoping for a lot given where students start from. The critical pedagogy of sustainability theorized in this dissertation cannot be fully addressed in a single course, or even an entire academic program. Although courses and programs can help students learn to engage in critically informed praxis, the critical pedagogy of sustainability is really a lifelong orientation
and process of learning that can begin inside the walls of the academy but, ultimately, must also live outside of classrooms and educational institutions in the lives of individuals and communities. At least that is how I experience it in my own life.

I want to be clear once again that I hold no illusions about the ability of my course to easily transform large numbers of students into lifelong advocates of sustainability. There are very real limits to one course in teaching systemically-oriented critical thinking and action. I also realize that the essays I have examined in this dissertation were written at the culmination of an intense course experience and that, for many students, the course may turn out to be, at least in the short term, only an isolated episode in their lives, the immediacy of which will fade over time – perhaps along with newly made commitments to living more sustainably. Still, I think the course at least creates an opening for some students to transform their worldviews and their lives in sustainability-oriented ways. That is at least my hope, and I believe it is about the best that I can do given the setting in which I work.

In closing my reflections on student essays, I would like to focus on clear-eyed hope as an important theme that emerged in students’ writing. This form of hope, I believe, is akin to love. When we love others, we have to be honest about their shortcomings with regard to our own expectations, love them anyway, and create relationships that help ourselves and those we love to grow. The same goes for our intimate relationships with place that should also be clear-eyed and reciprocally nurturing. We should not expect our places to conform to our preconceived visions or to yield material wealth beyond their ability to renew themselves. When we approach the world with clear-eyed hope – with love – we must first do our best to see the world clearly, then seek to integrate ourselves within the world and, at the same time, to change the world in ways that enhance the health and vitality of ourselves, others, and nature. Ultimately, then, the
critical pedagogy of sustainability is about love for others and the world expressed in a deeply open and creative sense.
Afterword

The critical pedagogy of sustainability I have developed in this dissertation is my response to the sustainability crises of our day. It is my attempt to rise to the challenge of making teaching and learning relevant, responsible, and practical in a time when ecologies and economies are perched on the brink of collapse. My pedagogy hinges upon the critical social theory of sustainability developed in chapter two and the theory of enforced dependency developed in chapter three. It rejects the unsustainable growth imperative of modern industrial capitalism. It is also counterhegemonic in orientation because hegemonic systems of social power are at the center of the great storm of socio-ecological breakdown in which we find ourselves in the late capitalist world-system. The critical pedagogy of sustainability promotes social justice as integral to sustainability. It is rooted in a holistic ontology of place in that it aims to (re)integrate human communities with nature in healthy, reciprocating interrelationship. It is also particularly concerned with developing resilient socio-ecologies by (re)localizing provision of basic human needs. It is inspired and informed by diverse critical theoretical traditions and by cultural traditions of healthy, place-centered living. The critical pedagogy of sustainability engages with the deep social contradictions of the late-capitalist world with the hope of transforming human to human and human to nature relationships and systems of power. It is a deeply challenging praxis of clear-eyed hope that sees sustainability sitting on a far off horizon that we may never reach – but it is moving anyway, with its eye on that horizon.

The critical pedagogy of sustainability is indebted to many who have engaged in a Freirean naming of the world (Freire, 1970/2000, p. 88) with the hope of changing it – and it is my naming of the world. It is my hope that this work will serve as a springboard for other educators working in formal and informal settings and in communities who will further theorize
and engage in forms of sustainability-oriented agency that are finely tuned to their own socio-ecological and historical contexts. It is also my hope that their stories of sustainability praxis will be communicated broadly and that these stories will ignite hope and agency in growing numbers of people and communities worldwide. This dissertation is my story of a shared experience of meaning making and action in the world. We need more such stories, rooted in diverse epistemologies and experiences of the world, in order to inspire and motivate sustainability-oriented social change.

Lastly, I acknowledge that we are in desperate times, and it is not at all clear that we will make it to a new horizon of living sustainably. It is, however, never too late to act with integrity and do the best we can. I hope that others can learn something from my example that will be useful in their own educational and community contexts.
References


FEASTA (The Foundation for the Economics of Sustainability). (2004, June). Curing global crises: Let’s treat the disease not the symptoms [Electronic version]. Dublin, Ireland:


Pittman, J. (2007, August). *Whole systems design and living sustainability.* Presentation given at the orientation to the Prescott College PhD Program in Sustainability Education, Prescott, AZ.


Appendix A: End of Oil Course Texts and Films, Past and Present

Course Texts:


**Films Used in Class:**


Klein, J. (Director). *Taken for a ride* [Motion Picture]. Hohokus, NJ: New Day Films.
## Appendix B: Post-War Table of the Development of Enforced Dependency in the World-System

<table>
<thead>
<tr>
<th>Dates</th>
<th>Oil Reserves, Production, Prices and Control</th>
<th>The Economy and International Debt, Finance and Trade</th>
<th>Agriculture</th>
<th>International Relations and Global Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colonial Period</td>
<td>Colonial period in the Middle East ends after WWI when the defeated Ottoman Empire is carved up to create the modern nations of this region and the European powers depart. Middle Eastern oil had been a desirable target for control during the war.</td>
<td>Colonies of Western Europe serve as resource extraction sites for drawing wealth to the global centers of empire. Uneven development is strategic, and the legacies of unevenness and lack of diversity in development persist through the present.</td>
<td>Subsistence agriculture common globally; agricultural production by colonies for colonizing nations also common.</td>
<td>Western European nations that become First World nations establish global dominance.</td>
</tr>
</tbody>
</table>
| 1930s | **Late 1930s**: U.S. peak in oil discovery.  
**1938**: Mexico nationalizes its oil. | **1929**: U.S. economic crash creates global depression.  
Keynesian strategies of “priming the pump” through government spending used in the U.S. to kickstart the economy are successful since little money infused through such spending leaks into the global economy at this point in history. | Subsistence and small scale agriculture common globally.  
Agricultural subsidies begin in the U.S.  
Agricultural policies in the U.S. increasingly promote large scale production of cheap, surplus food that supports industrialization and capital accumulation within the agricultural sector and within the larger political economy. | Domestic oil cheap in the U.S.; U.S. uses cheap oil and surplus agricultural production as foundations for its continued industrialization and growing international strength and influence. |
<p>| <strong>1940s</strong> | <strong>1944:</strong> Bretton Woods Conference held in New Hampshire with 45 Allied nations represented; results in the Bretton Woods system of international monetary and trade policy and new international banks; resulting monetary policy relies on a foundation of U.S. dollars (a gold standard currency) and fixed currency exchange rates; this system is called the gold exchange standard. Plans laid for creation of the World Bank and the International Monetary Fund (IMF); discussions begin that lead to the first General Agreement on Tariffs and Trade (GATT) treaty. |
| | <strong>1945:</strong> IMF and World Bank begin operation. |
| | <strong>1947:</strong> first GATT treaty in force. |
| | Post-war suburban housing boom in the U.S. facilitated by availability of cheap oil and by FHA and VA loan policies (loans are available for single-family, detached homes only). |
| | Post-war and through the early 1970s, U.S. agricultural subsidies and U.S. food aid result in an increasing internationalization of the American diet and contribute to growing U.S. hegemony. |
| | <strong>1944:</strong> WWII depletes some oil fields in U.S. Supplies tighten after WWII as the post-war economic boom takes off and demand increases, raising prices. Demand is offset by new supplies; prices lower once more. |
| | <strong>1945:</strong> Cold War begins between the U.S. and the Soviet Union. |
| | <strong>1945:</strong> U.S. President FDR and King Ibin Saud of Saudi Arabia form mutual security alliance; U.S. to protect Saudi Royal family. Since this time, Saudi Arabia has generally influenced oil supplies and prices to the benefit of the U.S. interests and has often supported U.S. security interests in the region. |
| | Green Revolution begins; characterized by the mechanization of agriculture and use of fossil fuel derived inputs: pesticides and herbicides manufactured from petroleum and synthetic fertilizers manufactured from natural gas using the Haber-Bosch process of ammonia synthesis. Over a period of decades, vast monocultures replace more diverse subsistence farming; locally adapted varieties of seeds and plants diminish; diverse farming knowledge begins to decline. Agricultural subsidies continue in the U.S.; U.S. policy framework increasingly supports large-scale agribusiness. From this decade through the early 1970s, a commodity, market system in agriculture is encouraged within nations and internationally at the same time that small producers are increasingly dependent on U.S. food aid increases among Third World nations. |</p>
<table>
<thead>
<tr>
<th><strong>1950s</strong></th>
<th>Oil nationalizations begin in the Middle East.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1953:</strong> Operation Ajax, a coup sponsored by the U.S. and British governments, deposes democratically elected Iranian Prime Minister Mosaddeq, who had taken steps to nationalize the Iranian oil industry; the Shah, supported by the U.S. and Britain, takes power.</td>
<td></td>
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<tr>
<td><strong>1956:</strong> Geologist M. King Hubbert publicly announces his theory of peak oil predicting that oil production will peak in the U.S. in the early 1970s.</td>
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<td><strong>1956:</strong> U.S. interstate highway system construction initiated by the Eisenhower administration.</td>
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<tr>
<td>Baby boom in the U.S.</td>
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<tr>
<td>U.S. economy booms as a result of post-war suburban development, baby boom and continued industrial development.</td>
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<tr>
<td>Massive deruralization driven by national and international policies continues globally, including in the U.S. and Canada.</td>
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<tr>
<td>Third World nations are encouraged to pursue the American dream by using agricultural production as a foundation for industrialization.</td>
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</tr>
<tr>
<td>Over several decades, as a result of various interrelated policies and technological developments, many of which result in increasing debt burdens among farmers, small scale producers increasingly leave the land. Most dramatically in the Third World but also in the First World, many rural people migrate to cities. In Third World countries, rural migrants settle into emerging megacity slums as they search for employment.</td>
<td></td>
</tr>
<tr>
<td>Cold War continues; proxy battles between the two superpowers begin.</td>
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<tr>
<td><strong>1960s</strong></td>
<td>Oil nationalizations continue in the Middle East.</td>
</tr>
<tr>
<td><strong>1960:</strong> The Organization of Petroleum Exporting Countries (OPEC) is formed by Iran, Iraq, Kuwait and Saudi Arabia, in part as a response to foreign oil companies reaping what these countries perceive as unfair levels of profits in comparison to oil concessions retained by producing countries.</td>
<td></td>
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<tr>
<td>International development banks (World Bank, regional development banks) and large corporate banks lend increasing amounts of money to Third World nations, much of this for infrastructure development aimed at promoting economic growth.</td>
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<tr>
<td>As people are severed from subsistence lifestyles, they move from relative self sufficiency and independence to a state of</td>
<td></td>
</tr>
<tr>
<td>Farming continues to assume larger and larger scale, and it is concentrated in fewer and fewer hands. Rural to urban migration continues as does concentration of wealth, power and control into the hands of agribusiness.</td>
<td></td>
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<tr>
<td>Agricultural subsidies continue in the U.S.</td>
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</tr>
<tr>
<td>Import substitution industrialization efforts in Latin America.</td>
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<tr>
<td>Western consulting and construction firms benefit from large scale infrastructure development in Third World nations, the result of a rash of international lending by Western banking interests.</td>
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<tr>
<td>Year</td>
<td>Event</td>
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<td>----------------------------------------------------------------------</td>
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<tr>
<td>1963</td>
<td>Global peak in oil discoveries.</td>
</tr>
<tr>
<td>1967</td>
<td>Six Day War; Israel captures territory from its Arab neighbors; some territories still occupied today.</td>
</tr>
<tr>
<td>1970s</td>
<td>Oil nationalizations continue in the Middle East.</td>
</tr>
<tr>
<td>1970</td>
<td>Oil production peaks in the U.S.</td>
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<tr>
<td>1973</td>
<td>Arab-Israeli War; U.S. supports Israel; USSR supports Egypt leading to a potential superpower conflagration.</td>
</tr>
<tr>
<td>1973</td>
<td>Arab oil embargo of the U.S. in response to U.S. support for Israel; global prices for oil increase dramatically.</td>
</tr>
<tr>
<td>Mid 1970s</td>
<td>Oil production declines for the first time in history in response to demand destruction brought on by high prices.</td>
</tr>
<tr>
<td><strong>Mid 1970s – mid 1980s:</strong> U.S. imports compact cars and trucks from Japan. U.S. car manufacturers, slow to manufacture compacts, suffer.</td>
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<tr>
<td><strong>1979:</strong> Iranian Revolution deposes brutal dictator and U.S. ally the Shah of Iran and installs a fundamentalist Islamic government unfriendly to the U.S.; hostilities between the two nations continue to the present.</td>
<td></td>
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<tr>
<td><strong>1979:</strong> Israel and Egypt sign peace treaty in which control of Sinai peninsula is returned to Egypt.</td>
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<tr>
<td><strong>1971:</strong> Saudi Arabia ensures that OPEC oil will continue to be traded for U.S. dollars only no matter who is the purchaser → U.S. dollars are in effect backed by oil; Saudi Arabia continues to enforce the petrodollar standard to the present.</td>
<td></td>
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<tr>
<td><strong>1971:</strong> Petrodollar system of trading for OPEC oil exclusively in dollars results in demand for U.S. dollar as a world reserve currency, thereby increasing its value and allowing the U.S. debt to grow.</td>
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<tr>
<td><strong>1971 – early 1980s:</strong> high price of oil floods oil exporting nations with profits; OPEC nations (with little absorption capacity for this newfound wealth due to low populations and low levels of industrial development) invest much of their earnings through Western banks and in foreign securities, particularly U.S. securities. Third World nations without large domestic oil supplies face a highly negative balance of trade and are forced to borrow in order to earn the foreign exchange needed for oil purchases. Similar pressures to participate in the global economy continue through the present.</td>
<td></td>
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<tr>
<td>Following the peak in U.S. domestic production of oil, support grows rapidly among U.S. leaders for neoliberal free trade policies and globalization, which make resources available to the highest bidder.</td>
<td></td>
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<tr>
<td>As globalization and free trade regimes intensify, the U.S. loses much of its manufacturing sector as these jobs are relocated by corporations seeking competitive price advantage in the global marketplace.</td>
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<tr>
<td>The U.S. balance of trade continues to worsen, eventually resulting in the extremely negative balance of trade payments seen today. A factor heavily contributing to this growing negative balance is increasing imports of oil (both on a percentage and a raw quantity basis). The U.S. economy is, in effect, subsidized by the rest of the world.</td>
<td></td>
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</tbody>
</table>
heavily, often from the IMF, in order to stabilize their currencies; the World Bank, regional development banks and international corporate banks lend out the flood of petrodollars generated by high oil prices; much of the money is lent to Third World nations attempting to industrialize.

1979: Iranian Revolution sends the second oil shock of the decade through the global economy.

Late 1970s: Latin American debt crisis ensues for some nations. High, predicted levels of economic growth not realized as a result of infrastructure projects undertaken in the 1960s and 1970s along with the high price of oil combine to create a tipping point in the stability of national economies in Latin America.

Rural to urban migration in Third World nations produces vast numbers of desperate, unemployed people ready to work under exploitive conditions for very little pay. This phenomenon accelerates the race to the bottom, in terms of the costs of production, by multinational corporations.

1973-mid 1980s: Recycling of
<table>
<thead>
<tr>
<th>1980s</th>
<th><strong>1980</strong>: Saudi Arabia gains full ownership of its national oil company Saudi ARAMCO.</th>
</tr>
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<tbody>
<tr>
<td></td>
<td><strong>Early – late 1980s</strong>: Following reductions in demand for oil that resulted from the 1970s oil shocks and the resulting downturn in the global economy, Saudi Arabia absorbs larger and larger hits to its production quota in an effort to keep oil prices stable. Eventually, Saudi Arabia opens its oil spigot and floods the market with cheap oil, thereby recapturing its market share by driving small independents out of business and punishing its OPEC partners with losses (Roberts, 2004). Oil price glut ensues due to declining demand in the wake of the 1970s oil shocks, increased non-OPEC production spurred by the high prices of the 1970s and the Saudi effort to recapture its market share.</td>
</tr>
<tr>
<td></td>
<td><strong>1980-1988</strong>: Iran/Iraq War; U.S.</td>
</tr>
<tr>
<td></td>
<td><strong>Early 1980s</strong>: Latin American debt crisis continues and involves additional countries. Neoliberal trade policies produce falling trade barriers and falling prices in agriculture contributing to further massive deruralization globally.</td>
</tr>
<tr>
<td></td>
<td><strong>1980</strong>: U.S. Supreme Court decision in the Chakrabarty case allows patenting of living organisms and paves the way for further concentration of power and control in the agribusiness sector through corporate emphasis on biotechnology. Concentration of wealth, power and control into the hands of large agribusiness interests continues. Suicide rates among farmers in the U.S. increase dramatically. Agricultural subsidies continue in the U.S. despite the Reagan administration’s</td>
</tr>
<tr>
<td></td>
<td><strong>1980</strong>: “Carter Doctrine” professed by U.S. President Jimmy Carter who states that oil in the Middle East is of strategic importance to the U.S. and that the U.S. will use military force if necessary in order to secure access to Middle Eastern oil. <strong>1981</strong>: Election of Ronald Reagan to the U.S. presidency signals the end of many energy conservation and curtailment policies and practices in the U.S. Third World nations struggling to pay debts to international lenders; loans are to be repaid in world reserve currencies (often dollars) → increased pressure for these nations to participate in export-led development in order to earn foreign exchange. Structural adjustment programs implemented in many Third World debtor nations in return for renegotiation of international debt;</td>
</tr>
</tbody>
</table>
supports Iraq led by Saddam Hussein; oil production in both countries is severely hampered by the war, a convenient fact for other oil producers, including U.S. based oil companies, since the war coincides with the 1980s global oil price glut.

The USSR attempts to fund its Cold War arms race with the U.S. in large measure through oil exports as it approaches its 1987 peak production, but the price glut of the 1980s greatly reduces its profits.

OPEC initiates new production quota rules based on national reserves figures triggering staggering increases in stated reserves among OPEC nations; these reserves are believed by most to be political rather than physical.

**1985**: UK North Sea oil price allowed to float on the open market by British Prime Minister Margaret Thatcher ending a prior agreement to sell North Sea oil at the agreed OPEC price and increasing the downward pressure on prices.

**1987**: The USSR, a major global oil producer, hits its peak production.

| **1990s** | **1990-1991**: Persian Gulf War; Iraqi forces invade Kuwait and line up on | **1991**: Soviet Union collapses. | **1990-1991**: Persian Gulf War; U.S. builds permanent bases in Saudi | neoliberal rhetoric against such trade barriers elsewhere in the world. | SAPs call for reductions in social support and improvement spending in areas such as education and health care and further open national governments and economies to privatization of formerly public resources, goods and services. **1979-1989**: Soviet war with Afghanistan. **Late 1980s-1991**: Soviet economy undermined due to global oil price glut and war with Afghanistan.
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-2003</td>
<td>UN sanctions against Iraq following its invasion of Kuwait keep much of Iraqi oil production off the market, thereby supporting oil prices.</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>Major oil exploration and development begins in the Caspian Sea region of central Asia.</td>
<td></td>
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<tr>
<td>1998</td>
<td>Asian demand for oil drops due to the Asian economic crisis causing declines in global oil prices.</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>NAFTA free trade treaty among U.S., Mexico and Canada in force.</td>
<td>Concentration of wealth, power and control into the hands of agribusiness.</td>
</tr>
<tr>
<td>1995</td>
<td>World Trade Organization operational; purpose of WTO is to expand the reach and depth of neoliberal free trade regimes; actively encourages private ownership and control in areas such as intellectual property and provision public services, including essential services such as water; the successor to GATT, WTO is a standing administrative body for enforcement of international trade treaties; its decisions represent a new area of international “law” in that these decisions often trump local and national regulations in the name of free trade.</td>
<td>Farmer suicides common in India.</td>
</tr>
<tr>
<td>1999</td>
<td>Euro launched as an accounting currency.</td>
<td>Farmers and citizens in other parts of the world, particularly in the Third World, protest U.S. farm subsidies which place downward pressure on prices and force small producers out of business.</td>
</tr>
<tr>
<td>1998</td>
<td>Asian economic crisis.</td>
<td>Accelerating reach of global competition in agriculture increases downward pressure on prices and the concentration of wealth and power in the multinational agribusiness sector.</td>
</tr>
<tr>
<td>1999</td>
<td>Euro launched as an accounting currency.</td>
<td>Farmer suicides common in Mexico following enactment of NAFTA.</td>
</tr>
<tr>
<td>1991</td>
<td>Cold War ends following Soviet Union collapse; collapse triggered by low oil prices and the Soviet war with Afghanistan.</td>
<td>Generally low oil prices and tax exemptions for shipping support international free trade regimes and globalization of the world’s commodity supply chains (including food) since costs of transportation are negligible.</td>
</tr>
<tr>
<td>1991</td>
<td>Cold War ends following Soviet Union collapse; collapse triggered by low oil prices and the Soviet war with Afghanistan.</td>
<td>Monocultures in agriculture are mirrored by a monoculture in human culture; locally adapted ways of life and resource use, as well as indigenous subsistence lifeways emphasizing reciprocity between humans and nature, disappear with increasing rapidity.</td>
</tr>
<tr>
<td>1991</td>
<td>Cold War ends following Soviet Union collapse; collapse triggered by low oil prices and the Soviet war with Afghanistan.</td>
<td>U.S. military base building spree in central Asia in the newly independent republics of the former Saudi Arabia from which to wage the war; bases prove to be a continual thorn in the side of fundamentalist Saudis who deplore what they see as the corruption of both the Saudi royal family and the West.</td>
</tr>
<tr>
<td>Year</td>
<td>Event</td>
<td></td>
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<tr>
<td>------</td>
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</tr>
<tr>
<td>1994</td>
<td>Zapatista uprising begins in Chiapas, Mexico, in protest of Mexico’s participation in NAFTA.</td>
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<tr>
<td>1995-early 2000s</td>
<td>U.S. pressures Afghanistan to allow the building, by oil interests friendly to the U.S., of an oil pipeline through that country to ports in Pakistan.</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>WTO talks break down in Seattle as a result of massive anti-globalization protests.</td>
<td></td>
</tr>
</tbody>
</table>

**2000s**

- The U.S. faces competition for oil from the demand side as China’s economy expands and China replaces Japan as the world’s second largest consumer of oil. 
- Iraq thought to possess large oil reserves, second only to those of Saudi Arabia.

**2002**

- Euro becomes a coin and banknote currency. 
- Loss of spare production capacity in global oil market brings increased volatility to global oil prices; commodities futures speculation in the oil market increases price volatility and masks connections between prices and supplies. 
- Small farmer suicides continue. 
- Agricultural subsidies continue in the U.S. 
- Consumer and community interest in local and organic foods growing rapidly in the United States.

**2001**

- U.S. World Trade Center and Pentagon attacks prompt the Bush administration’s “war on terror.”

**2001-2003**

- U.S. government and mainstream media redirect the U.S. public’s focus on revenge for 911 away from Osama bin Laden and toward Saddam Hussein.
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>U.S. forces invade Afghanistan in search of Osama Bin Laden; proposed oil pipeline through Afghanistan still thought to be a profitable venture (later, oil reserves estimates from Caspian Sea will reduce interest in pipeline).</td>
</tr>
<tr>
<td>2003</td>
<td>Iraq invaded by coalition forces led by and overwhelmingly comprised of the U.S. military forces.</td>
</tr>
<tr>
<td>2003</td>
<td>Massive anti-globalization protests at the WTO meeting in Cancun, Mexico.</td>
</tr>
<tr>
<td>2004-2005</td>
<td>Monsanto sues farmers in the U.S. and Canada for patent infringement when their crops become contaminated with Roundup Ready seed. Some farmers forced to destroy their heritage seeds.</td>
</tr>
<tr>
<td>2004</td>
<td>Bush administration hostilities rise toward Iran; US/Iranian relations remain tense to the present.</td>
</tr>
<tr>
<td>2008-</td>
<td>U.S. intensifies its focus on fighting rebel groups and the Taliban in Afghanistan.</td>
</tr>
<tr>
<td>2010</td>
<td>U.S. withdraws combat troops from Iraq but leaves troops engaged in training and related activities.</td>
</tr>
<tr>
<td>2007</td>
<td>Value of the U.S. dollar drops below that of the Canadian dollar.</td>
</tr>
<tr>
<td>2008</td>
<td>Global recession triggered by real estate credit bubble bursting in the U.S.; some U.S. banks and some banks from other nations fail or are bailed out by their governments; bailouts often mean governments taking a controlling ownership interest in these banks.</td>
</tr>
<tr>
<td>2008-</td>
<td>Unemployment rises in China as a result of the worldwide recession.</td>
</tr>
<tr>
<td>2009-</td>
<td>U.S. publicly and actively encourages China to continue investing its excess dollars in the U.S. by purchasing U.S. Treasury Bills. This relationship, in which China purchases the ever growing U.S. debt, is important to U.S. and global economic stability.</td>
</tr>
<tr>
<td>2010</td>
<td>Euro region countries face economic crises (Ireland, Portugal, Greece, Italy, Spain).</td>
</tr>
<tr>
<td>2003</td>
<td>Iraq trades oil for Euros.</td>
</tr>
<tr>
<td>2005-</td>
<td>Iran plans to open an oil trading “bourse” where oil would be traded for currencies other than the U.S. dollar, primarily the Euro.</td>
</tr>
<tr>
<td>2008</td>
<td>Global oil prices exceed $100 per barrel for the first time in history.</td>
</tr>
<tr>
<td>2003</td>
<td>Spare production capacity for oil is virtually nonexistent prior to the global recession. With production occurring flat out, Saudi Arabia can no longer function in its historical role of regulating global oil prices by opening and closing its oil production spigot.</td>
</tr>
<tr>
<td>2008</td>
<td>Interest in self-sufficiency and direct marketing and distribution to consumers grows among small producers globally.</td>
</tr>
</tbody>
</table>

In the last part of the decade, the U.S. dollar regains its value relative to the Euro.
Appendix C: Example Essay Prompts from The End of Oil

Written response question for Heinberg, The Party’s Over, Chapter 4: Heinberg examines a wide variety of energy sources in an effort to determine to which degree any non-petroleum source, or combination of these, could enable industrial civilization to survive the end of oil. Consider Heinberg’s exploration and the evidence he presents. Use this information/argument as a basis to formulate an initial set of strategies to respond to declines in oil production. Which kinds of efforts and energy sources would you recommend to be emphasized for use/development in the near future? Which combinations of energy sources/strategies make the most sense to you, and why? Be sure to consider the time needed for scaling up of individual energy sources, technologies and strategies.

Written response questions for the film The Corporation:

1. How is this film related to the idea of "collective violence" that we discussed in class earlier in the term? Please provide examples from the film to back up your claims.
2. List two major legal and/or structural foundations of modern, corporate, international capitalism. Underneath each item,
   a. Describe the impacts (positive, negative or both) of these legal/structural aspects of capitalism.
   b. Then provide your personal evaluation of these impacts on people, governments and/or the environment.
   c. Provide examples from the film to back up your analysis.
3. Which information/idea from the film made the biggest impact on you? Be sure to clearly identify at least one place in the film that this information/idea was presented. Explain why it impacted you the way it did.

Written response question on Astyk’s Depletion and Abundance: In light of Astyk's view of the future, and in light of other course material and discussions to date, consider how your household and community would look and behave twenty years from now if they were doing really well. How would your family and community satisfy basic needs? How would your family and community relate to the local environment and to the wider world? What kind of work would you be doing? What kinds of entertainment and cultural/educational enrichment would be available? You do not have to agree entirely with Astyk’s or any other author's view of the future, but if you depart significantly from the future scenarios presented in course texts, you need to explain why you see the future differently.

Written response question on Clark’s Petrodollar Warfare and the film The Oil Factor: Identify two major themes or points made in The Oil Factor that are also addressed in Clark’s Petrodollar Warfare. Analyze and discuss how these texts reinforce or differ from each other on the points you choose. Then provide your own take on each point along with supporting evidence.
Appendix D: Action Project Assignment Sheets

Winter Term:

Action Project
End of Oil (EGC 317), Winter 2010

Rationale

This course challenges you to consciously consider and further develop the ethical framework for your life and to apply that framework to critical reading, discussion, writing ... and action! One of the four college-wide learning goals at Fort Lewis is "action as responsible application of academic knowledge," and this project relates directly to furthering that goal.

What is a college education for? Some widely agreed upon outcomes of becoming college educated in a democratic society include being able to get a good job, gaining a deepened and broadened understanding of the world and one's place in it and developing the critical capacities and skills to productively engage in democratic society. Some see teaching/learning to analyze and critique as the sole pinnacle of education. While these abilities are absolutely foundational to engaging with others and one's environment in mindful, meaningful ways, it is the application of these capacities to real world problems that brings change and growth to individuals and society and that embodies the potential to engage respectfully with the natural world.

Action takes many forms. Be sure that your chosen project provides you with an opportunity for critical reflection and learning tied to the content of this course. You will be called upon to make connections between course content and your action project.

Some Potential Projects

1) Learn about beekeeping and assist with campus beehives (1-2 students):
   - Learn about beekeeping by reading a guide prepared by student beekeepers last year.
   - Revise the guide into a more readable and consistent format without typos and with additional information useful to new beekeepers.
   - Assist with restarting one hive by working with a local beekeeper to install the bees in the hive.
   - Monitor the hive in its early days of activity.

2) Build a solar honey extractor for use with campus beehives (2-4 students):
   - Research plans for an extractor.
   - Build the extractor.
   - Write instructions for using it.
The Environmental Studies Program can assist with costs for materials if the extractor is donated to the program upon completion. Costs in all cases, should be minimized by seeking out recycled, scavenged, and free materials. Free pallets can be a free source of wood.

3) **Build a solar oven, and use it for cooking** (individual project or 2-4 people for a more complicated oven):

- Research plans for solar ovens.
- Build one or more ovens.
- Locate solar cooking recipes, and compile them into a cookbook.
- Cook at least three meals using the oven.

The Environmental Studies Program can assist with costs for materials if the oven is donated to the program upon completion. If you want to make and keep your own ovens, that's fine, too, but you must cover costs. Costs in all cases, should be minimized by seeking out recycled, scavenged, and free materials.

4) **Create an art installation** that teaches something relevant to our course (could be an individual or group project). Work with your professor and/or others to find an appropriate venue for displaying your work. Advertise the "opening" for your project, and host the event. Prepare educational materials people can take away with them? There may be an opportunity for you to display your work at the Environmental Studies program fundraiser.

5) **Build an horno** (adobe or cob bread oven), and use it to bake bread (4-6 people).

- Research plans for the horno.
- Build the horno.
- Locate an horno bread recipe.
- Use the horno to bake bread.

The Environmental Studies Program can assist with costs for materials if the oven is constructed on campus and donated to the program upon completion. If one of you wants to build the oven at your house, that's fine as well, but you must cover costs. Costs in all cases, should be minimized by seeking out recycled, scavenged, and free materials. Broken concrete slab material can be used to construct the foundation for the horno.

6) **Research food preservation for foods that are available locally, and practice canning, drying, pickling, etc.,** so that you'll be ready to do this with local foods in the fall (1-4 students).

- Research food preservation techniques. For canning, be sure you have the materials necessary for processing your cans, and be sure you know the appropriate processing times.
- Compile a list of recipes and directions into a local food preservation guide.
- Get hold of foods for practicing, even if some of these can't be obtained from local sources at this time of year.
- Preserve a significant amount of food as an example of what one can learn to do to preserve local foods.

Participants should be willing to cover the costs for canning jars and other food preservation supplies and should keep the food they preserve and share some with the class if desired.

7) **Start a container garden or gardens indoors for herbs, food and/or medicinal plants** (1 or more students; group size will influence how much you do):

- Research container gardens, and come up with a plan for yours, including the kind of soil to use, what to grow, etc. Document sources of information you used in coming up with your plan.
- Obtain containers for your garden. Is there a way you can scavenge good containers?
- Plant your garden in time to have it growing by the time the course is finishing up.
- Compile information on your plants to present. What are they good for? And what do you need to know to grow them?

Participants should be willing to cover the costs for garden supplies and can expect to keep the food and herbs they grow.

8) **Build a solar food dehydrator** (2-6 students):

- Research plans for solar dehydrators. Can you make one from scavenged materials? If it's a very easy model you choose, perhaps everyone in the group can make one. Or, perhaps you could make several easy models and compare them.
- Research how to best maintain the nutritional elements of dried foods. Remember that we live in a very dry place, so a great deal of heat that destroys nutrients may not be needed to get foods to dry. Use this information to decide on an appropriate dehydrator to construct.
- Compile some directions for drying various foods into a solar food dehydrator cookbook.
- Try out your dehydrator(s) on multiple types of foods.
- Hint: old screens from used windows can be used in some dehydrators, and free pallets can be a good source of free wood.

The Environmental Studies Program can assist with costs for materials if the dehydrator is donated to the program upon completion. If you want to make and keep your own dehydrators, that's fine, too, but you must cover costs. Costs in all cases, should be minimized by seeking out recycled, scavenged, and free materials.

9) **Create a short film related to the content of the course** that would serve a public education purpose. This project could be undertaken by multiple people or could be an individual project. Research venues for submitting your film to be viewed by an audience or audiences outside this class. Submit the film in appropriate venues. You should plan to get hold of and cover the costs of the equipment and materials you need. There may be an opportunity to show your film at the Environmental Studies program fundraiser.
10) **Write essays or poems related to course content, and submit them for publication to appropriate venues** (most likely an individual project). *Green Freedom* (a publication of the Environmental Center) or *Images* (an FLC publication) might be possibilities. There may be an opportunity to do a reading at the Environmental Studies program fundraiser.

11) **Pursue a political action project on a topic of your choice** that is related to this class and that includes:

- Contacting officials in writing, via phone and/or in person to educate/persuade them to take particular actions,
- Holding a public event or events,
- Other means of communicating to officials and/or the public about the action(s) you promote,
- Writing a series of articles for the *Independent* and/or
- Creating a series of TV or radio stories and securing airtime for them.

If you plan an event, talk with Tina about possibilities for holding the event on campus and for FLC subsidizing some costs. There may be an opportunity to participate in the Environmental Studies program fundraiser as one means to realize your political action project.

12) **Compile/write a 12-month local foods cookbook that aims for a chosen percentage of local foods in one's diet** (1-2 students). Map out across the months of the year appropriate preservation activities in which you will need to engage in order to consume local foods at other times of year.

13) **Design or find patterns for clothing, carrying bags, rugs, blankets, and/or other useful fabric items that you can make using scavenged or recycled materials.** Make some of these items to show to the class. This could be an individual project, or students could work in a group to do an increased number of demonstration projects.

14) If you have a stable residence in the city or in the county and the desire to own chickens, you could **start your own chicken coup** (no roosters allowed in the city due to noise):

- Research chicken coup design and appropriate chickens for your needs (eggs and possibly meat).
- Build the coup.
- Stock the coup with chickens.
- Gather some eggs if possible.
- Can you use scavenged or recycled materials?

Dean Mullen is offering a class on backyard chickens April 13 and 14 for $49. You might consider taking it. Remember, chicken manure makes great garden fertilizer, and chickens are great at garden pest removal. You might consider building a "chicken tractor" as well (or instead of a coup if you already have a coup), a small pen that is moveable, allowing you to move chickens to different parts of your yard. The owner of the coup should plan to cover materials costs, if any.
A similar project would be starting your own rabbit hutch.

15) **Start your own worm bin for creating compost for your or a neighbor's garden** (1-2 people; if two people do this, create two bins).

- Research worm bin construction, what kind of worms to get and where to get them.
- Create your worm bin.
- Stock the bin with worms.
- Use it for your compostable waste.
- Bring some of the worm compost to show people for your presentation.
- Compile information on how to use the worm compost, and be ready to explain it to others.

Hint: worm composting is called "vermiculture." Those who construct bins for their own use should be willing to cover costs, if any, for materials. Jennifer Craig is offering a vermiculture course through Continuing Education on March 13 and 20 and April 10 for $45. You might consider taking the course.

16) **Refurbish one or more old bikes by learning how to do bike repair.** Do your best to find used parts. Set your bikes up for commuting and carrying things like small loads of groceries. You should be willing to cover costs for parts and materials since you will own the bike(s) when they are ready to ride.

17) **Assist with the transplanting of fruit trees at La Boca Center for Sustainability.** This would probably entail a full weekend of work at the Center. You would learn about planting and transplanting fruit trees as well as general information on growing fruit trees and food sustainably. Many people could participate in this project since around 200 trees need to be moved. Tina will have further details in late February.

18) **Write and perform some music related to the content of this course.** You might also create a recording of your music that could be shared online and/or played on the radio. Try to find an outlet for your music that will serve as an effective communication vehicle for ideas you want to convey. There may be an opportunity to perform this music at the Environmental Studies program fundraiser.

19) **Come up with a project of your own!**

    For all of these projects, be sure to keep track of your sources of information (including interviews and e-mail exchanges)! You will need to cite these in your final presentation!

**Process**

The following steps comprise an outline of the process in which you'll engage.

**Step 1:** project introduction in class, *Wednesday, February 24.*
Step 2: Choose your project in class on Friday, February 26. For those who will be working in groups, develop a schedule of times/days when your group members are available to meet, and exchange contact information.

Step 3: Friday, March 19, submit a written proposal that details what you have been and will be doing for your project.

Step 4: Monday, March 29, turn in your progress report.

Step 5: Wednesday, March 31, sign up in class for your presentation time during the last week of class.

Step 6: Give your oral presentation in class and your poster presentation at the Community Based Learning and Research (CBLR) Showcase (Wednesday, April 21, Union Ballroom) during the last week of class.

General Notes

If you encounter difficulties with your project, please discuss them with me! I am available to facilitate your working more effectively within your group. I'm also available as a sounding board for ideas related to your project in terms of deciding what's feasible to accomplish and helping you think of creative ways to accomplish some specifics of your work. Please don't hesitate to meet with me, call me, or e-mail me with questions or ideas!

EGC 317 - Winter 2010
The End of Oil
Action Project Progress Report

Overview

The purpose of your progress report will be for you and your professor to take a look at your progress to date on your action project. As this project is a major, long term requirement for the course, it's extremely important that you put appropriate energy into it along the way so that you will really have done something significant by the end of the term! Your progress report also represents an opportunity for your professor and classmates to give you suggestions and other feedback on your work to date. You will submit the report in written (printed out) format in class on Monday, March 29. On that day, all class members will also engage in a discussion regarding their action project work to date.
What to Include

I. Introduction: Your introduction should state in a concise paragraph the goal(s) you are pursuing for your project and why your project is important. Since you detailed this information for your proposal, feel free restate it only very briefly in your introduction. This information will serve to remind your professor exactly what you're doing. On the other hand, if your project goal has changed somewhat or recently come into focus, please explain your new ideas/work in more detail.

II. A Bulleted List of the Steps You Have Taken So Far Toward Getting Your Project Off the Ground

III. A Bulleted List of the Steps You Have Yet to Take to Complete Your Project

IV. A Concluding Statement: This section should be in narrative (paragraph) form. Include discussion of the following:

- Observations on the value and usefulness of what you've done so far,
- Observations on what you think has been or will be the most challenging portion of your project,
- A discussion of what you have learned so far from your work and
- Any other observations you'd like to make.

V. A List of Information Sources You've Used in Your Work: Even discussions with individuals can be cited as "interviews", so be sure to list the people you've used as resources as well as any printed or Internet sources that have proven useful to you. Be sure to follow a consistent, formal bibliographic style in composing your citations. Please consider using RefWorks to create your bibliography (see the online guide to citations available through our Reed Library). See also the Online Writing Lab at Purdue for citation examples and help. Librarians at the reference desk are also very happy to help you with citations.

There is no specified page length recommendation for this assignment as class members have a wide diversity of projects they are pursuing. The length of your report will vary according to the complexity of the project you've chosen. However, as this class is at the upper division level, you will be expected to demonstrate depth of thought and follow-through appropriate to an important project at this level.
End of Oil -- Winter 2010
Final Presentations

You will do two presentations of your action project work: a poster presentation at the Community Based Learning and Research Showcase on Tuesday, April 21, 4:30-6:00 in the Union Ballroom and an oral presentation during the last week of class. You'll sign up for an oral presentation time during class. Following is some advice on how to prepare your presentations.

CBLR Showcase Poster Preparation:

Some of you may want to compose your poster using PowerPoint. Poster-sized slides can be prepared and printed using the plotter printers in Berndt Hall, Reed Library and EBH. Tina will be happy to show those of you who are interested how to format a poster-sized slide using PowerPoint.

Others of you may prefer to prepare a more traditional, hand-constructed poster presentation. If you choose to do this, it is recommended that you create a two to three panel presentation that will stand on its own on a table top. Tina will bring some examples to class.

Information to Include in Your Poster Presentation:

1. Your name(s).
2. Name of your project.
3. Information on how your project relates to your coursework in End of Oil.
4. Brief reflections concerning what you learned and the significance of this learning to yourself and/or the community (can be bulleted).
5. Examples of work you did (anything that will help attendees visualize quickly what your work entailed/produced). If you have a product you can easily bring to display, do so.
6. Photographs of your work or relevant to your work.
7. A complete list of citations to sources consulted in the process of completing your work (if any). This list should be formatted in a formal bibliographic citation style. Please don't be sloppy with citations! Strive for scholarly professionalism in this respect. This list can be in smaller print than the rest of your poster since it's not likely to be the central point of interest for showcase attendees. Nevertheless, you need to cite sources you used and do it well.

Other Poster Tips:

- Remember when constructing your posters that your purpose is to convey a holistic understanding/impression of your project more or less at a glance.
- Don't count on people having the time to read large portions of text. Therefore, don't try to say too much. Try to make sure a person could understand a lot about what you did and why within two or three minutes.
Use fairly large fonts (usually at least 16 pt. even for minor features of your poster, perhaps larger). You'll want to stand back a few feet from your poster from time to time while you're constructing it so you can judge how readable/accessible your material is.

- Use color/pictures to emphasize important aspects of your presentation, but don't make your presentation jumbled by using too many colors. Try using colors thematically so that like things are highlighted in the same way. You can colorize text, use background framing to colorize important aspects of your presentation, use wordart, etc. A multicolor packet of construction paper can be helpful to have on hand.

- Be as neat and clear as you can in composing your poster. The overall impression you provide will reflect on your entire project.

**Attendance at the CBLR Showcase:**

All of you must attend the showcase. Be ready to stand near your poster and answer any questions people have when viewing your presentation. You will also display the poster during your in class oral presentation.

**In Class Oral Presentations**

You or you and your project partner(s) will have approximately **15 minutes** to present your project, including the time you need for answering questions. Please do not count on running over! We will not have time to accommodate overly long presentations, and Tina will be keeping time. Your poster can be your visual aid for the presentation, and you may project photographs or a PowerPoint presentation as well if you like. All members of your group must take part in the presentation.
Fall Term:

Note: the fall 2010 section of The End of Oil participated with two other classes in the action project. Student participants numbered approximately 100.

Apple Days Festival Community Based Project
End of Oil, Introduction to Environmental Studies, and Reading and Writing in College Fall 2010

Purposes of the Festival:

This is the third annual Apple Days fest (formerly known as the Homegrown Harvest Festival) in Durango. City councilors Michael Rendon and Christina Thompson, the Food for Thought program of the FLC Environmental Center (coordinated by Tina Evans), the Bootleggers group of local brewers, Turtle Lake Refuge, the Growing Partners local food producers, the CSU Extension Service staff, FLC students, and others organize and run this local food festival in order to raise awareness about the amount of fruit grown in our local community and to create opportunities to put that fruit to good use.

The festival is envisioned as a benefit to the community in a number of ways. Many times, those who own fruit trees, for various reasons, don’t use much or any of the fruit, and it becomes an attractor for bears, thereby increasing human/bear conflicts and leading to the killing of wildlife. The Apple Days festival will remove some of this fruit from the reach of bears by putting it in the hands of people who will use it.

The festival organizers are also interested in food security. With the impacts of climate change and global peak oil production beginning to be felt, people are beginning to see an end in sight to our wasteful globalized system of fossil fuel intensive food production and shipping. Therefore, encouraging use of local food that is already being grown as well as encouraging the planting of more sources of food in yards and on farms in our local area means increasing the resilience of our community to potential food shortages and/or to reduced choice in foods available. Fruit trees and other food and medicine producing plants will be sold at the festival, and workshops will be offered to attendees so they can learn to properly plant and care for fruit trees.

An additional benefit of the festival will be to support locally owned businesses. Large corporate retail centers systematically remove money from the community and send it to distant corporate headquarters. Local businesses tend to spend a larger share of what they earn within the community. The longer a dollar circulates in the local community before leaving, the more it will contribute to local community prosperity. This effect of locally circulating money is known as the multiplier effect. This effect may seem inconsequential, but understanding how it works can tell you a great deal about why small town retail centers all across the U.S. have fallen victim to big box stores.

In support of our local brewers (Carver’s, Ska, and Durango Brewing Company) who contribute a great deal to our community in terms of multiplier effects and sponsorship of community events, we will be pressing apples on Saturday and Sunday in or near Buckley Park. Participation
of the brewers provides them with an opportunity for continuing to build healthy business relations in our community.

The pressed juice will be used by local brewers as the major ingredient in an apple beer that will be sold to the public later this year. Another reason we’re using the juice to make beer is that the brewing process will kill any potential pathogens that make it into the apple juice. The apple pressing will also allow the public to see how apple pressing works and to try it themselves if they like. The proceeds from previous years’ apple beer, known as “Insider Ale,” have been donated back to the festival, and the brewers plan to do the same with this year’s proceeds. Turtle Lake Refuge will also be providing samples of freshly pressed juice to community members who attend the event.

Children’s activities will also play a prominent role in the festival. Having these events encourages families to attend and to learn something about local food. We have a lot going for our community in terms of local food! And we want to celebrate that fact and encourage even more growing, along with the local economic benefits that growing brings.

Your involvement is also a goal of this festival. We want you to learn about local food, perhaps even how to plant and maintain your own fruit trees in the near future. We also hope you’ll learn something about how local food can serve as a nexus for increasing the proportion of locally generated economic activity and about why such an increase benefits the community. We also hope you and others who participate in and attend the festival will experience the power of community to get big things done as a group and to have fun while doing it! Thank you for your participation!

Activity Dates and Times:

- Saturday, Oct 16, 2010, apple picking in two shifts: 8:30-12:00 and 12:30-4:00.
- Sunday, Oct. 17, 2010, 10:30-5:00, or some portion of that time.

Places:

- Apple picking on Saturday will take place in an around town. Groups should arrange to ride on bikes or carpool to picking sites. Picking crews will meet in Buckley Park (12th St. and Main).
- The festival will also be held in Buckley Park on Sunday 11:00-4:00.

What to Bring for Apple Picking:

- Two liters of water for yourself.
- A sack lunch for those working on either shift who want to have a picnic as a group in Buckley Park.
- Work gloves.
- Sunscreen.
- A hat to shield you from the sun.
- Sun glasses.
Canvas bags, boxes and/or plastic shopping bags for picking. Everyone should bring at least four containers.
Appendix E: Assignment Sheets for The End of Oil Course Final Reflective Essays

EGC 317 - Winter 2010
The End of Oil

Final Reflection Paper

This assignment calls for you to reflect upon your experience in this course with particular emphasis on how the course applies to your life as an individual and to our collective lives as local/global citizens.

Part I: Please use the following questions as vehicles for reflection, but do not feel your discussion has to be limited to answering only these.

- How has or hasn't the course influenced you regarding your current and future actions?
- Has your worldview changed in any way? Why or why not?
- What are the most important pieces of information related to energy technology, policy and economics that you would like others to know? Why are these so important?
- What kinds of actions would you recommend as most important for individuals, communities, nations and/or other entities to take regarding the future of energy supplies, energy use, economics and/or government policy? Why are these actions important?

Part II:

Consider the action project in which you engaged. Consider how this project related or did not relate to class readings and discussions. You do not have to be in love with this project!

- Please offer your thoughts on how you integrated or were not able/inspired to integrate this work with what you were learning in other parts of the course.
- How and why did or didn't this project enhance your learning in this course?
- How will you use this experience in the future? If you are certain you won't use it, why not?
- Did the project influence your state of mind with regard to energy transition? Why or why not? If it did influence your state of mind, in what way did it do so?
- Be sure to say specifically what you did as a participant in these action projects.

Compose your reflection as a paper written in paragraphs. Please word process this assignment and hand it in in printed form. You may choose to incorporate quotations from course texts to strengthen your discussion, but these are not required. There is no specified page length recommendation for this assignment. However, as this class is at the upper division level, you will be expected to demonstrate depth of thought appropriate to a closing reflection on an upper division college course.
This assignment calls for you to **reflect upon your experience in this course with particular emphasis on how the course applies to your life as an individual and to our collective lives as local/global citizens.**

**Part I:** Please use the following questions as vehicles for reflection, but do not feel your discussion has to be limited to answering only these.

- How has or hasn't the course influenced you regarding your current and future actions?
- Has your worldview changed in any way? Why or why not?
- What are the most important pieces of information related to energy technology, policy, and economics that you would like others to know? Why are these so important?
- What kinds of actions would you recommend as most important for individuals, communities, nations, and/or other entities to take regarding the future of energy supplies, energy use, economics, and/or government policy? Why are these actions important?

**Part II:**

Consider the Apple Days action project in which you engaged. Consider how this project related or did not relate to class readings and discussions. *You do not have to be in love with this project!*

- Please offer your thoughts on how you integrated or were not able/inspired to integrate this work with what you were learning in other parts of the course.
- How and why did or didn't this project enhance your learning in this course?
- How will you use this experience in the future? If you are certain you won't use it, why not?
- Did the project influence your state of mind with regard to energy transition? Why or why not? If it did influence your state of mind, in what way did it do so?
- **Be sure to say specifically what you did as a participant in this action project.**

Compose your reflection as a **paper written in paragraphs**. Please word process this assignment and **hand it in in printed form**. You may choose to incorporate quotations from course texts to strengthen your discussion, but these are not required. There is no specified page length recommendation for this assignment. However, as this class is at the upper division level, you will be expected to demonstrate depth of thought appropriate to a closing reflection on an upper division college course.
Appendix F: Fort Lewis College Institutional Review Board Materials

Application:

Fort Lewis College
Institutional Review Board

Application to Use Human Subjects in Research

[Submit this application by email attachment to IRB@fortlewis.edu]

I believe this research qualifies for a
☐ Full Review    X Expedited Review

Category: I originally submitted an application to be exempt from IRB review for this project. Although it was determined in conversation with an IRB member that the category for exemption applied, there were deemed to be problems regarding intellectual property rights (copyright) regarding quotations I proposed to draw from student reflective essays. Students are copyright holders to their written communications, including reflective essays written for classes. If I were to quote from their papers without referencing the sources by name, I could be seen to be, in a sense, plagiarizing their work by not attributing it to them. If I were to reference students by name, risks to research subjects could be substantially increased. Therefore, I am submitting this expedited review form specifically in order to address this issue of intellectual property rights of students involved in my research project. For students who explicitly give me permission to quote from their reflective essays under the conditions specified here and in the informed consent form (attached), I will be granted the right to use their written work for the stated purposes.

Research Project Title: Dissertation in Sustainability Education (title not yet finalized)

Principal Investigator (must be a faculty member): Tina Evans

Department: Environmental Studies
Telephone: 247-7684
E-mail: evans_t@fortlewis.edu

Brief description of PI’s background relevant to research (particularly with regard to specialized procedures):

I am a PhD student in sustainability education and an Associate Professor at FLC with a long history of assigning reflective essays at the conclusion of my courses.

Co-Principal Investigator (student researcher): NA

Date project activity to begin:
Site of Research: FLC campus

Other Institutions/Non-Institutional Investigators (describe collaboration or use of records):

Will this project be supported by funds? ☐ Yes ☑ No

Funding Agency:

As the investigator submitting this proposed research and signing below, I agree to conduct the research involving human subjects as presented in the protocol or modifications to it and as approved by the Department and the Institutional Review Board; to obtain and document informed consent and provide a copy of the consent form to each subject unless this is waived by the IRB; to present any proposed modifications in the research to the IRB for review and approval prior to implementation; to retain records for the mandated lengths of time; and to report to the IRB any problems or injuries to subjects.

PI Signature: _________________________________________ Date: ____________

Please type your answers to the questions directly below the questions. Please enter your answers in bold, a different font or color in order to make reading your application easier

1. Succinctly (in approximately fifty words or less) describe the purpose and methods of the research. Include a brief description of all procedures to be conducted. Attach a full proposal, and any instruments (surveys, etc) that will be used. No full review will be considered without the complete proposal.

I am completing a theoretical dissertation as a student in the Prescott College PhD program in Sustainability Education. I am developing a critical social theory of sustainability and a theory for a critical pedagogy of sustainability with special focus on local food systems. In my work, I argue that local food systems can serve as political, economic and cultural expressions of forms of counterhegemony that promote community resiliency in times of environmental degradation and economic instability. Since I employ this pedagogy in my End of Oil class, I propose to summarize and quote from some student reflective essays written as final papers for my course. Direct quotations will be used only in cases where I have obtained clear informed consent from the student (see attached informed consent form to be used for this purpose; for papers from winter 2009, see also number 3 below). I will use these summaries and quotations as indicators of some typical responses to my pedagogy and as concrete examples of what may be possible through the application of my theories. Students will not be identified by name, dates and times they took the course or other personal information that would allow them to be personally identified by readers of my dissertation.

I may also draw quotations from student evaluations of my course. Since there is not a reasonable expectation of privacy for these statements, I need not obtain informed consent for this purpose. Nonetheless, I will not include information drawn from student evaluations that could allow an individual student to be identified.

I propose to revise and publish portions of my dissertation as a book or a series of journal articles, and I have indicated this on the attached informed consent form.
2. Describe the risks and benefits this research has for research subjects (include physical, psychological, social, legal and economic risks). If there appears to be no risks, write “no known risks.” Describe any measures taken to minimize risks. Explain how the risks are reasonable relative to the benefits. See the IRB website for further explanation of what the IRB is seeking with this question.

No known risks.

I will obtain informed consent from students in my winter 2010 and fall 2010 End of Oil classes. I have obtained consent to quote from some student papers from winter 2009 as noted in number 3 below. For papers submitted in other terms, I will quote only from papers of students from whom I receive informed consent. Since students will not be personally identified and since all quotations will be drawn only from papers of students who have explicitly provided be with permission to do so, I will not be infringing on the intellectual property rights of students.

3. Describe if and how confidentiality will be maintained. (Be specific: Will names be attached to the data in any form? How will the data with names be stored?) See the IRB website for a full explanation of how the IRB considers the role of confidentiality in reviewing your research.

I will not identify students by name with regard to quoting from their papers. I will not use quotations that would provide enough personal identifiers to allow a student who is quoted to be identified. I may reference students by occasionally using “he” or “she” references to gender, but these identifiers will not be used in combination with other specific, personal information that would allow an individual student to be identified. I will most often use references such as “one student” when introducing quotations. I will not use gender, ethnicity or other personal identifiers as data categories to be analyzed for any purpose in my research. For quotations drawn from papers from winter 2009, I will rely on statements solicited from students as part of their final paper assignment to determine from whom I am free to quote. Following is the question students were prompted to answer:

Your professor may want to use quotations from your paper in a research project related to the Food for Thought Program: Do you permit Tina Evans to quote from your paper for this purpose? Yes or No. Any quotations used will be anonymous and will not reference you personally.

The Food for Thought Program is part of the pedagogy I am developing and implementing. Students replied yes or no to this question. For those students who neglected to answer this question, their response will be assumed to be a no, and no quotations will be used. I will not quote from papers I received without informed consent, though I will consider summarizing some material from across these sections of the course.

4. What are the characteristics of the subjects you are choosing? Offer some justification for selecting subjects with these characteristics.

They are participants in my End of Oil course where I put into practice the pedagogical theories I am developing in my dissertation.

5. A selection of subjects is equitable if it does not systematically exclude or include people of a certain gender, race, age, religion, economic class or educational level, etc. See the IRB website for a full discussion of equitable selection of subjects. Although the selection of subjects will
never be perfectly equitable given the parameters of experimental design, explain what steps you
will take to increase the diversity of the subjects and to minimize inequities. Describe your
recruitment procedures (use of flyers, newspaper advertisements, etc.) and explain how these
procedures will help to increase diversity.

Written material has been and will be gathered from all participants in the End of Oil course sections
for which papers will be examined for this research. I have used no method to include or exclude
individuals with any particular characteristics.

6. Do research subjects include any of following: minors, incarcerated persons), in vitro
Fertilization, fetuses/fetal tissue, economically/educational disadvantaged, pregnant women,
persons unable to give valid informed consent due to physical or mental condition, or does it
target specific ethnic/cultural groups? If any of the vulnerable categories listed above are
involved, address rationale, any additional safeguards for their protection, and explain why the
research is minimal risk for those subjects.

I have had pregnant women and economically/educationally disadvantaged persons in my classes.
These personal characteristics of students from whom I will quote will not be identified in my
dissertation.

7. Will subjects be compensated? How?

No.

8. Will a written informed consent form be used and signed by participants?

Yes. Please see attached.

   a. If yes, attach the informed consent form (see below)
   b. If no, explain how the research meets each of the following criteria such that the research
      qualifies for a waiver of informed consent:
      i. Research involves no more than minimal risk to subjects;
      ii. Waiver will not adversely affect the rights and welfare of subjects;
      iii. Research could not be conducted practicably without the waiver or alteration;
      and
      iv. Subjects will be provided with pertinent information in some other format.

Informed Consent Letter:

FORT LEWIS COLLEGE
INFORMED CONSENT TO PARTICIPATE IN A RESEARCH PROJECT

TITLE OF PROJECT: Dissertation in Sustainability Education (title not yet finalized)
NAME OF PRINCIPLE INVESTIGATOR: Tina Evans

CONTACT NAME AND PHONE NUMBER FOR QUESTIONS/PROBLEMS ABOUT RESEARCH: Tina Evans;
evans_t@fortlewis.edu; 247-7684

PURPOSE OF THE RESEARCH AND PROCEDURES/METHODS TO BE USED:
Tina Evans is completing a theoretical dissertation as a student in the Prescott College PhD program in Sustainability Education. She is developing a critical social theory of sustainability and a theory for a critical pedagogy of sustainability with special focus on local food systems. Since she employs this pedagogy in her End of Oil class, she proposes to summarize and quote from some student reflective essays written as final papers for her course. Direct quotations will be used only in cases where she has obtained clear informed consent from the student. She will use these summaries and quotations as indicators of some typical responses to her pedagogy and as concrete examples of what may be possible through the application of her theories. Students will not be identified by name, dates and times they took the course or other personal information that would allow them to be personally identified by readers of her dissertation.

It is the intent of Tina Evans to revise and publish portions of her dissertation as a book or a series of journal articles. Identical research methods and informed consent will be applied in the case of the dissertation and other publications derived from it. Your consent here applies to both the dissertation and derivative works of the dissertation.

RISKS INHERENT IN THE PROCEDURES:

No known risks.

Note: It is not possible to identify all potential risks in an experimental procedure, but the researcher has taken reasonable safeguards to minimize any known and potential, but unknown risks.

BENEFITS:

Practitioners of sustainability education can benefit from this dissertation and future book.

CONFIDENTIALITY:

While one cannot ever guarantee complete confidentiality, steps will be taken to prevent anyone from associating participants’ names with the data gathered. The individual names of research participants will not appear on any of the papers on which the data are recorded, nor will they appear in the final research document. The only place the names of participants will appear is on this signed informed consent form. The consent forms will be stored separately from the data. In addition to the researchers, the federal research regulatory bodies and the Fort Lewis College Institutional Review Board may have access to the research records.

Participant’s Initials: _____________ Date: _______________
LIABILITY:

The Colorado Governmental Immunity Act determines and may limit Fort Lewis College’s legal responsibility if an injury happens because of this study. Claims against the College must be filed within 180 days of the injury.

PARTICIPATION:

Your participation in the research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled. If at some point during the research, there are new findings that may affect your willingness to participate in the study, you will be informed of those findings.

Your signature acknowledges that you have read or have had read to you the information stated and willingly sign this consent form. Your signature also acknowledges that you have received, on the date signed, a copy of this document containing 2 pages.

________________________________________
Participant’s Name (printed)

________________________________________
Participant’s Signature

__________________________
Date

________________________________________
Investigator or co-investigator

__________________________
Date
Letter of Approval from the FLC IRB:

To: Tina Evans
From: Mary Ann Erickson, PhD, Chair
Institutional Review Board
Fort Lewis College

Subject: Dissertation in Sustainability Education

In accordance with the College’s regulation implementing the Common Rule for the Protection of Research Subjects, 45 CFR 46, the Institutional Review Board (IRB) of Fort Lewis College has reviewed the research project titled ‘Dissertation in Sustainability Education’ and has approved the project in its entirety.

This approval is for research which takes place within one calendar year of this letter. If your project extends beyond this date and no significant changes are made, you must seek approval from the IRB for continuing the research by filling out the CHANGE OF STATUS / ANNUAL REVIEW / FINAL REPORT form, available on the IRB web page. If your project extends beyond one year and significant changes are made, you must submit a new application form to seek approval for the research.

Please note that the Common Rule also requires that research investigators promptly report to the IRB any proposed changes in the research activity, and that no changes affecting the rights or welfare of research subjects may be initiated without prior IRB review and approval except when necessary to eliminate apparent immediate hazards to the subjects. Forms are available on the IRB website to report these instances.

Also note that you should report to the IRB any unanticipated problems involving risks to subjects or others, or any serious or continuing noncompliance with the Common Rule for the protection of research subjects (45 CFR 46).

If you have questions or concerns about the research project, the IRB’s Review, or the protection of human subjects, please do not hesitate to contact me at 970-247-7694.