

## **For Nature: Deep Greening World-Systems Analysis for the 21st Century<sup>1</sup>**

by

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[Page 381]  
*Journal of World-Systems Research*

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### **Introduction**

From its conception the world-systems perspective has been preoccupied with the study of long term global transformations (see for ex., Frank 1968, 1979; Wallerstein 1974; Amin 1974; Wolf, 1982; Chase-Dunn 1989; Chase-Dunn and Hall 1992; Kaplan 1978).<sup>2</sup> To this extent, the various structural relationships, trends, and cycles of the world system have been identified to explain the processes of global transformation. The varied attempts to pinpoint and analyze these relations, trends, and cycles have been within the context of connections between humans, classes, status groups, industries, regions, and states in the world economy. From an ecological point of view (ontologically and epistemologically), such a manner of understanding change is quite anthropocentric, as global transformation necessitates a changing relationship with Nature. In an era of increasing global concern and awareness of the finite nature of natural resources and the growing realization of the contemporary losses in plant and animal species and the continued susceptibility of the human species to climatological changes and diseases despite various scientific and technological advances, we need to consider that besides social relations and structures, the basis of human reproduction includes our relationships with the non-human world (ecology). World-systems/world system analyses need to move beyond deciphering the processes of global change *only* through the social (anthropocentric) dimension of the relations underlining these processes. Keeping to just the social relations/structures of the reproduction of the system limits the range of explanations we can provide for global transformation, and also restricts the dimensions whereby the basis for these changes can be explored. This paper is an attempt to introduce the other basic dimension (our relations with Nature) into the overall equation of world-systems/world system analyses for our understanding of global change. Ultimately, it is this Culture/Nature relation along with the dynamics of Nature that in the

long run determines the trajectory of the transformation of the world system. The purpose of this paper is to "green" the world-systems/world system analyses to date, and to suggest (ontologically and epistemologically) an *ecocentric* world system history approach beyond a humanocentric world system history analysis that has been proposed by Frank and Gills (1992(a), 1992(b)).

### **I. Ecological Degradation: Some Theoretical Responses**

Over the course of the late 20th century, a pervasive issue of the planet is global ecological degradation. In the most recent addition to *The Limits to Growth* theme, Meadows et al. (1992), have again sounded the alarm that the consumptive patterns (especially of the advanced industrial countries) have overshoot the limits of the "carrying capacity" of the planet. In another context Grumbine (1992), utilizing the principles of conservation biology, has raised the issue of the deepening biodiversity crisis in North America. These two soundings of the alarm bells are by no means lonely cries in the woods; there have been others as well, such as the report of the World Commission on Environment and Development (Brundtland, 1987) and Agenda 21 that was signed by the nation-state participants at the United Nations Conference on Environment and Development at Rio de Janeiro in 1992. Therefore, the environmental imperatives facing human societies on this planet are societal issues of major concerns to not only the ordinary citizen, but also the State.<sup>3</sup>

[Page 382]

*Journal of World-Systems Research*

---

Nature has throughout human history been viewed on most occasions as a resource to meet the reproductive needs of human civilizations. In recent times, whether under social-economic organizations that have been categorized as "capitalism" or "socialism,"<sup>4</sup> this conception of Nature has remained uniform (McLaughlin, 1993). As a consequence of this, the resulting human self-centered bias generates economic and political arrogance (notwithstanding a myopia to other living beings and natural processes) especially in policy discussion on social change and land/natural resource use. To a large extent it has engendered ecological crisis conditions through human history for at least 5,000 years (Chew, 1992, 1995a, 1995b, 1995c, 1997a; Ponting 1991). Over the last several decades, criticisms of advanced industrial societies for their narcissistic and exorbitant consumptive patterns resulting in social and ecological crises have been rife. In the area of the ecological relationships that exist between humans and other living beings and natural processes, it has also led to the view that Western modernization is no longer progressive and universal, and neither is the "socialist" alternative workable in view of the ecological degradation that the latter model of socio-economic organization has engendered.<sup>5</sup> This thematic is shared by some 'progressive' scholars. Unfortunately, besides deep ecology and ecosocialism, there have been few alternate frameworks offered in light of this debunking, and especially so, with the collapse of the former Soviet Union where the socialist/communist alternative had been used in the past as a reference point

for transition. Eschewing the grand narrative, postmodern discourse has not offered much, other than celebrating the local and the dispossessed, while ecofeminism has restricted itself to its gender specific niche (see for ex., Mies and Shiva, 1993).<sup>6</sup> Ecological Marxism (for ex. O'Connor, 1988, 1991) has been preoccupied with trying to "green" Marx for the late 20th century by introducing a second contradiction. Other than including an additional component (Nature) in the overall analysis, the end result wished for in terms of social relations is an ecologically sensitive socialism within an anthropocentric framework. World-systems analysis is even more silent. Other than the works of Braudel (1972, 1981, 1982, 1984, 1989), and some recent writings of Frank and Gills (1992(a)) and Chase-Dunn and Hall (1996), there have been few attempts to broadly address ecological issues or to include ecology as a dimension. Even the rare references to Nature have been circumscribed within the process of accumulation of capital (see for ex. Amin (1994) and Wallerstein (1996)). On the whole the analyses to date remain within an anthropocentric framework.

## **II. THE DIMENSION OF NATURE IN WORLD-SYSTEMS/WORLD SYSTEM ANALYSES: READING BRAUDEL *et al.***

Broadly speaking, when we review the major literature in world-systems/world system analyses, Nature as a dimension has not been of much concern. Nature has been neglected both as a primary dimension that impacts the social relations and institutions underlying the process of the accumulation of capital on a world scale, and even as an ecological victim of this same process. Undoubtedly, the primary focus of the majority of practitioners of the world-systems/world system perspective has been on the social relations and institutions surrounding the accumulation of capital on the world scale.

[Page 383]

*Journal of World-Systems Research*

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Perhaps, the only major exception has been the works of Fernand Braudel (1972, 1981, 1982, 1984, 1989) where natural surroundings, physical landscape, and climatological rhythms have been treated as elements that condition social relations and social institutions of the world-economy. In *The Mediterranean* Braudel (1972:20), in the first part of his two-volume work, sketched "man in his relationship to the environment." For Braudel, this was a level with a historical duration distinguished from and related to another level, that of social history, which comprises of economic systems, states, societies, and civilizations. For him these two levels relate to the third one of traditional history, which is about people and events - "*l'histoire evenementielle*". In Braudel's view the ecological variables circumscribe the processes of the social life of the Mediterranean region in both the highlands and the plains. The harsher environment of the mountains hinders the penetration of the state and the urbanizing process, and the natural resource rich lowlands further the formation of towns and cities. Climatological changes, besides having a set of rhythms, also impact on grain and grape harvests, which in turn condition prices. Human interventions such as deforestation might also affect climate changes in

certain places (Braudel 1972:268). Braudel (1981) continues with his awareness of ecological variables and their relationships with social history in his three-volume work on *Civilization and Capitalism*, though not to such an extent as it was undertaken in *The Mediterranean*. He did not lose sight of it however, for he (1981:49-51) continues to refer to climatic rhythms as impacting on material life as these variations affecting "trees, rivers, glaciers, the level of the seas, and the growth of rice and corn, olive trees and vines, men and animals." Whereas *The Mediterranean's* focus was more regional in scope, *Civilization and Capitalism* underscored the world systemic nature of ecological changes and their interconnectivity and simultaneity of occurrences. Listen to what Braudel (1981:49) has to say:

"The possibility of physical coherence of the world and the generalization of a certain biological history common to all mankind suggests one way in which the globe could be said to be unified, long before the voyages of discovery, the industrial revolution or the interpenetration of economies."

This adherence to ecological variables (or as Braudel terms it, history and environment) continued until the end of his life in the two-volume work *The Identity of France*. In this final work Braudel persisted in analyzing social and institutional relations within the context of the environment, pinpointing the dynamic/mutual relationships of economic life and the nature of towns and cities with the physical and climatological landscapes.

Immanuel Wallerstein's three-volume *The Modern World-System* revolves wholly on the level of what Braudel has called social history (economic systems, states, and civilizations). Despite the fact that Wallerstein (1978, 1980, 1984) has called for a non-sectorializing approach to the study of social change and development, the ecological dimension that was part of the Braudelian framework has been dropped. Instead, the overall effort has been confined to the understanding of the dynamics of the capitalist world-system since the 16th century to anthropocentrically focused relationships via classes, status groups, commodity chains, households, states, economic cycles and trends. Lately, Wallerstein (1996) has referred to ecological devastation as a consequence of the process of capital accumulation of the world-system. However, the identification of ecological devastation is viewed mostly as outcomes of system dynamics (via the process of capital accumulation) rather than viewing the ecological relationships between humans and other living beings and natural processes as a *basic* dimension defining the trends and dynamics of the world-system.

[Page 384]

*Journal of World-Systems Research*

---

Samir Amin's (1974) and Eric Wolf's (1982) contributions parallel Wallerstein's at the level of a social history that identifies the processes, trends, and dynamics of production and (unequal) exchange of goods and labor within the context of a world system. The dimension of Nature remains external to their analyses. Nature appears as a backdrop that

supplies the ingredients for the production processes and has little conditioning effect on the dynamics of the process of accumulation.

Gunder Frank's (1978) early work on world accumulation shares this neglect of Nature as a dimension of analysis and targets only the politico-economic social history of the world system. However, in more recent writings Frank and Gills (1990, 1995) have called for the inclusion of an ecological dimension in our overall understanding of the dynamics of the world system. They suggest that the economic imperative of the world system is based on a relationship with the environment, and the nature of the relationship is contingent on where the social organization is located spatially in the system. Therefore, some of the early social organizations in the alluvial plains of Egypt, Mesopotamia, and Indus, could produce an agricultural surplus because of water supply and fertile soil. But they had to seek their other natural resource needs outside their geographic landscapes, which were deficient of these resources (such as timber, certain metals, etc.). Therefore, the ecological and the economic were necessarily intertwined. But, at the end Frank and Gills continue to call for a humanocentric approach towards the understanding of world historical processes.<sup>7</sup>

In an earlier work Chase-Dunn (1989) also follows the genre of Wallerstein *et al* and uses a structuralist model of the world-system to focus the spotlight on the social history level. However, in *Rise and Demise: Comparing World-Systems*, Chase-Dunn and Hall have shifted somewhat to the position that understanding transformations of world systems requires ecological and demographic dimensions. Population now appears to be of primary consideration. They propose a theory of transformation that will enable us to study continuity or qualitative transformations of world systems. The intention is to clarify the similarities and differences among different world-systems as well as within a single system. Systemic logic is used to distinguish a typology of social organizations and production systems, and Nature is viewed as an element conditioning the dynamics of the evolution of the world-system in question.

Notwithstanding Frank/Gills' and Chase-Dunn/Hall's recent urgings to include Nature in the overall understanding of the dynamics of the world-systems/world system, though not to the depth and mode of analysis of Braudel, other world system practitioners continue to neglect Nature. This neglect is also reflected in Martin's (1994) recent assessment of world-systems research to date.

[Page 385]

*Journal of World-Systems Research*

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### **III. The Missing Link in World Systems Analysis: Human-Nature Nexus**

For the world-systems perspective, the motor force of the world-system is the process of the ceaseless accumulation of capital (Wallerstein 1974, 1979, 1992; Hopkins and Wallerstein, 1977). To date, the research efforts have been to decipher and map out the

social-structural relations that have emerged over time and space to foster the accumulation process. From unequal exchange between zones of the system to the depiction of a global division of labor and commodity chains circumscribing linked production processes, studies have been undertaken to analyze the nature of these features of the system (see for ex. Chase-Dunn 1989; Frobel, Heinrichs, and Kreye 1980; Gereffi and Korzeniewicz 1994; Chew 1992; McMichael 1984). No doubt, these studies have provided revealing accounts of the dynamics of the world system in reproducing inequality and exploitation between zones and social classes. Paralleling this are investigations of the economic linkages within the parameters of state-centered activities and rivalries showing aspects of the rise and fall of states, and of great powers within the world-system (see for ex. Bergesen, 1982; Friedman 1982).

Global transformation has been explained according to two main thematics along this line of thinking: a) the dynamics of the accumulation process circumscribed by the global division of labor and punctuated by cycles of expansion and contraction, and b) the competitive rivalry between core states for global market share and hegemony. For the first thematic, Marxian type explanations of the economic logic of capital accumulation (with its inherent contradictions) --commodification, mechanization, and proletarianization as secular trends-- are utilized to explain possible crisis points in terms of production and circulation, coupled with Kondratieff long cycle explanations to explain the periodicity of booms and busts (Research Working Group 1979; Hopkins and Wallerstein 1977; Wallerstein 1979). System crises of the short, medium, and long terms are interpreted from the standpoints of crises in production and exchange/realization (from the standpoint of supply and demand conditioned by differential wage levels across the zones of the world-economy) without any reference to the limits of natural resources or to climatological changes that might affect harvest and migratory patterns (Research Working Group 1979:495-6). For the second thematic, hegemonic rivalry (rise and fall of core powers) and competition between core states are part and parcel of the systemic crisis, which also generate anti-systemic movements as agents of change (Amin et al, 1990). If we scrutinized the aforementioned world-systems explanations to account for long-term transformations, invariably all the factors/conditions to explain change revolve around the social (political-economic) relations of classes, regions, and core states in the world-system. But are these supposedly materialist social factors/conditions sufficient to account for changes in the *longue duree*? In my opinion it would be incomplete because it does not address the ultimate ecological basis of human/societal organization and reproduction.

To be minimally materialist the basis of human reproduction (in a broader context) must be viewed also through our relations with Nature (ecology). A major question is how the social and ecological worlds interrelate. World-systems analysis has focused only on the macro-level relations within the human social organization instead of also analyzing the relations between social and the natural worlds. Yet this relation is the very basis of the reproduction of human societies. It is underscored in the early civilizations of Egypt, Mesopotamia, Indus, and the Hwang Ho, whose social reproductions were contingent on economic (production of surplus) and ecological relations. These societies' reproductive and expansionary capacities were conditioned by their specific ecological surroundings

coupled with the needed search/exchange in other ecological landscapes for the natural resources (timber, metals and certain stone) they lacked and/or had already exhausted by unsustainable exploitation - and "accumulation." Thus, **the ecological relation is as primary as the economic relation in the self-expansionary process of these societies.**

[Page 386]

*Journal of World-Systems Research*

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These two relations therefore intertwine to condition the growth of human communities, and to a large extent they determine the rise and fall of centers of accumulation in world history. Viewed in this manner, the social and ecological (natural) worlds interact in a dialectical fashion whereby Nature's rhythms also impact on the dynamics of social-economic life. For example, changes in climatological trends such as natural rhythmic temperature changes will impact on crop harvests, which in turn will determine grain prices or the migration of people (see for ex., Ladorie 1971). Therefore, the relation between climate and social history needs also to be understood.<sup>8</sup>

In addition to these rhythmic climatological changes which we have witnessed in world history and their concomitant effects on human communities, kingdoms, civilizations and states, we can also document the loss of the beauty and naturalness due to the excesses (exuberance) of human civilizations in their productive and consumptive lifestyles. Notwithstanding the aesthetic loss, these excessive social-economic practices also generate degradative effects on Nature (destruction of species, global warming, etc.) which in turn, loop back to impact on the dynamics of social-economic life of the world system (such as crop failures, port siltation, temperature changes affecting harvest yield, etc.)

In a world-historical context, our understanding of the dynamics of the system should be directed to the analysis of the relationships underlying these two relations (social and ecological), and the vulnerability and instability circumscribing these relations as world history has revealed. Over world history, the relations underlying the economic dimension has been termed as macroparasitic, i.e., exploitative relations among groups and classes of human beings (McNeill 1992: 73). McNeill's depiction must also be extended to cover the ecological dimension - that is to the exploitative relationship between human communities and Nature. Therefore, besides the macroparasitic growth underlying the social relations of the world system which has the intrinsic tendency to generate socio-economic crises, the ecological (Culture/Nature) relations also condition the expansionary dynamics of the world system and the competitive relations between core states, kingdoms, and empires, as well as their rise and fall in world history.

#### **A)The Process of Accumulation and Cycles**

Given this intertwined relationship of social and ecological relations, the thematics that world-systems/world system analyses have pursued need to be revised. Furthermore, in

recent years alternate approaches embracing world-systems concepts such as core-periphery relations, hegemonic rivalry, and the process of accumulation on the world scale have been applied to world system/s prior to the 16th century (see for ex. Chase-Dunn and Hall 1991, 1996; Frank 1992a, 1992b, 1993, 1995; Modelski and Thompson 1996; Algaze 1993; Rowlands 1987; Kristiansen, 1993, Wilkinson, 1994). **9 In these recent works, notwithstanding the introduction of an alternate explanation for global development beyond the commonly accepted Eurocentric version 10,** it is suggestive from this recent research that there has been a ceaseless accumulation of capital over world history for at least 5,000 years (for ex. Gills and Frank (1992)). What Frank and Gills have not asserted is that this process of accumulation over five thousand years of world history seems ultimately self-defeating in that Nature as the underlying basis of the accumulation equation provides, conditions, and inhibits this process - and thus establishes its limits (Chew, 1997a). It is a dynamic relationship whereby excessive macroparasitism of Nature's resources determines the limits of the expansionary dynamics of the world system, and the strength and reproduction of core states/civilizations. In the long run it is Nature that establishes the limits to the reproduction of world-systems/world system and its transition. The perennial socio-economic crises that have erupted in, and even on occasions, transformed kingdoms, civilizations, and states, might not just be only reactions to social exploitation and crisis of accumulation, but also responses to the limits of Nature (in terms of resource depletion), climatological changes and tectonic shifts.

[Page 387]

*Journal of World-Systems Research*

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Associated with the ceaseless accumulation process over 5,000 years of world history are the long cycles of economic growth and expansion of the world system with duration of 200-300 years in length that Frank (1993) has traced. These economic pulsations of a periodic nature lead us to suggest that there might be ecological degradative cycles linked with these phases of expansion and contraction of the world system. The existence and periodicity of ecological cycles are linked with the economic cycles of expansion and stagnation because as world history has shown, the materialistic reproduction of capital engenders ecological degradation. Due to the long-term duration and exponential characteristics of these ecological degradative effects, it would be more appropriate to term these environmental degradative "cycles" as "long swings" having a varying periodicity with exponential increases (higher amplitudes) over the long-term.

## **B) Core-Periphery Relations and Hegemonic Rivalry**

In world-systems analyses core-periphery relations have been established as a thematic for understanding global uneven development. This core-periphery concept when placed within our revised framework does suggest other tendencies of which we need to take note. It is clear that core-periphery relations further contribute to the assault on Nature especially after a long cycle of intensive and extensive accumulation of capital (Chew

1996, 1997). Incorporation of peripheral areas into the world-system further heightens and accelerates the ecological degradation of the periphery. The core-periphery dynamic as exemplified through core-sponsored developmental strategies (such as export-oriented manufacturing) further exacerbates ecological degradation in peripheral areas. Whether this core-periphery relation is within a specific territorial boundary or between territorial boundaries this core-periphery dynamic with its impact on Nature, over the long term establishes limits to the reproduction of accumulation processes or the reproduction of life for that matter. With core exploitation of the periphery or even the periphery exploiting its own environment for economic growth, it has led to depletion of natural resources that has engendered not only conditions unable to sustain human communities or for that matter other living beings, but in some cases outmigration (inter and intra) of peoples, economic crises and health related issues.

The continued ecological depletive effects in core and peripheral areas as a consequence of the process of accumulation and core-periphery dynamic also force the relocation of production depending on the exigencies of the accumulation processes. Especially for the periphery, this has led to further socio-economic and ecological crises for those places where production has been shifted. The other related outcome has been that in cases in which capital resources have been invested in the periphery to further the accumulation process and economic opportunities have been maximized, it has been possible for these areas to jump temporarily ahead of the others in the development game (for example, the Asian tigers), though the outcome for Nature remains the same in terms of ecological degradation.

[Page 388]

*Journal of World-Systems Research*

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Hegemonic rivalry in world history has often been expressed via wars and economic trade competitions. Such economic and political rivalries have severe consequences on Nature in core and peripheral areas. The most devastating being wars where whole-scale destruction of Nature have been inflicted to the geographic areas where the conflicts were located, and as well, the need for intensive utilization of Nature's resources to produce weapons of war to mount the military campaigns. For the former, the Persian Gulf War provides an example of ecological degradation to fragile environments. For the latter, the Peloponnesian War is a case in point which required large quantities of wood for shipbuilding resulting in severe deforestation of the mainland of Greece and Asia Minor.

Hegemonic rivalries via economic and trade competition have also resulted in ecological degradation where the search for cheap natural resources as well as low labor costs has led to penetration of fragile ecological environments to enhance and facilitate the accumulation process. Such competitive rivalry might or might not lead to the rise of potential economic powers.

### **C) Accumulation, Ecological Crises, and World-Views**

If accumulation crises have occurred over world history, the concomitant effect would be outbreaks of ecological crises over the long-term if we assume a materialist reproduction of history. The history of ceaseless accumulation has witnessed the move all over the globe to reproduce the process of accumulation. This accumulation on the world scale has engendered ecological degradation at the local, regional, and world-systemic level vis-a-vis the phase of technological development and utilization. Depending on the scale of the human community in question, ecological degradation and crisis are often commensurate with the level of transformation of the particular community. Population, urbanization, and technological levels of a community are some of the basic indicators that determine how communities relate to Nature and thus the ecological outcomes. Therefore, the more transformed (meaning higher) the levels of population, urbanization and technologisation, the higher the ecological degradation and crisis. The endless spiralling upwards of these basic indicators have impacted on Nature for at least the last 5,000 years of human history. Ecological degradation and crises such as accumulation crises have recurred throughout world history regardless of socio-cultural variables and geographic locations (Chew, 1997a). This is because even for those communities that do not have a more transformed level in terms of technology or urbanization, they are impacted ultimately via world systemic core-peripheral relations through the penetration and domination of their socio-economic spheres by the core that has already been transformed in terms the world-views of (that are exploitative of Nature), urbanization, and technologisation. As a result of all this, there has been very little opportunity for Nature to rest or to restore itself.

Concomitant with ecological devastation and crisis is the emergence in world history of ecological groups/ecomovements (Chew 1995b, 1997b; Grove, 1995). In fact, ecological degradation has also brought forth the call for ecological preservation throughout world history. Such is the dialectic of the social enterprise. On this basis world systemic/natural limits coupled with human agency/world-views are the dimensions that we need to understand in order to interpret the trajectory of the world system.

[Page 389]

*Journal of World-Systems Research*

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At a time of global monumental destruction of Nature and our growing understanding of the limits of Nature, we need to change the basis of our perception of Nature. This call is hardly new; there have been such calls throughout world history. Contemporary views of Nature have extended from seeing it as a benign substrate for human use to one of a precious limited resource that we should learn to husband (see for example, Eckersley (1992:8-48), McLaughlin (1993:17-82)). The range of views cannot lead ultimately to ecological integrity for they are just gradations of an anthropocentric *weltanschauung* whereby Nature is seen as having no intrinsic value. Where Nature has no intrinsic value, ecological integrity cannot be attained because on most occasions, the preservation/protection of Nature is measured/rationalized against social costs with the latter ultimately winning out. The aim therefore is to move away from this

anthropocentric rationalization which always place the human as the center and valuing human activities, especially economic ones, as paramount. We can adopt the position that does not award primacy to the human individual (unlike even some progressive environmental approaches which continue to adhere to this valuing) and view every living being as having the right to unfold (Naess 1989, Devall 1988, 1991, 1993). Such a perspective I will term as ecocentrism. For us, if its basic dictum is adopted, the system will have to change qualitatively. In other words if every living being has the right to unfold, then the current excessive exploitation of Nature means that we have not awarded intrinsic values nor rights to Nature. But if the system or rationalization is to follow the dictum of awarding intrinsic value to Nature, then surplus generation would be extremely difficult because it would be contradictory to exploit Nature if one awards intrinsic value to it.

In light of this, the next section proposes a realignment for the world system history approach via the incorporation of ecocentrism so that a future praxis that is geared toward ecological integrity can be pursued. [11](#) **This coupling is important for ecocentrism as well, for the practioners of the ecocentric approach such as deep ecologists have to date focused most of their efforts on the philosophical and psychological aspects of deep ecology (see for ex. Drengrson, 1989; Fox, 1990).** [12](#)

[Page 390]

*Journal of World-Systems Research*

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#### **IV. TOWARD A NEW GRAND "NARRATIVE": ECOCENTRIC WORLD SYSTEM HISTORY ANALYSIS**

"What we propose is not a shift of caring away from humans and towards non-humans, but rather an extension and deepening of overall caring."

Arne Naess, *Deep Ecology for the Twenty-Second Century* (1993)

At this *conjoncture* in world system history, we need to reset our orientations toward ecological integrity for all (including other living things and natural processes). In the context of the human relationship with other living beings and natural processes, where in the past the ecological degradation has been regional in scope, less intensive in nature, and perhaps sometimes simultaneous in geo-spatial terms, the current exploitation is global in scope and intensive in nature (Chew 1997a). The possibility of global ecological collapse is more likely now than in the past. What it also means is that at this point in time, the potential demise of the world system as we have known it for five thousand years *could more likely be a consequence of global ecological crisis* leading to severe stress on the reproducibility of the hierarchical social-economic aspects of the world system than from the "falling rate of profit" or for that matter, working class struggles.

In this regard world-systems analysis, whose *raison d'être* includes a practical moment, needs therefore to offer a critical stance to this long history of human excessiveness (at least 5,000 years) in production and consumption at the expense of other living beings and natural processes. We need to start from different premises so that we can address the ecological imperatives and injustices that are facing us now and into the 21st century. In this regard without eschewing the grand narrative which is so popular these days, we need to return to it because postmodern subjectivism without any anchoring to emancipatory objectives (in our case, the awarding of intrinsic values to all living and non-living entities (humans included)) as Habermas (1987) has warned us can lead to totalitarian outcomes. What is proposed is that we transcend our anthropocentric theoretical constructs and sketch out a ecocentric world system history framework that pursues the telos of a new human project towards *ecological integrity*. If the telos of the human project is to ensure ecological integrity **so that the reproducibility of living beings and natural processes continue to evolve unabated**, and assuming that the excessiveness of social systems of organizations/civilizations is ratcheted down to the level of use-value (borrowing from Marx), the following thematics<sup>13</sup> can be the orienting *grundrissee* or "ground rules":

#### **A) ECOLOGICAL INTEGRITY, THE PROCESS OF ACCUMULATION, AND CYCLES**

1) **Diversity of species** (humans and other living things) should be the key *leitmotiv* in our overall organization and perception of life on this planet, and it is from this that we form the architecture of ecological integrity. From this notion of diversity of species, we therefore assume that **all life (humans included) live in an interconnected unity in diversity relationship within specific arrangements that are (often) hierarchically ordered, and in the case of humans and animals, dependent on sex, physical size, class, empires, civilizations, and nation-states** (Chew 1997).

[Page 391]

*Journal of World-Systems Research*

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2) A corollary to this is that the interconnected diversity of relationships among humans has been organized around a world system for at least **5,000 years powered by the process of accumulation** (Frank and Gills 1992, 1995; Chew 1995a, 1997; Bergesen 1996; Chew and Denmark 1996). **This process of accumulation has been unceasing and exploitative for five thousand years to both Nature and the majority of humans.**

3) For the human to human context, the interconnected relationships of diversity organized around the ceaseless accumulation of capital for at least 5,000 years have been punctuated by **economic cycles of boom and bust. These "long swings" or logistics having periodicity of around 300 years are also repeated in "long swings" of environmental degradative occurrences** such as floodings, that are to a large extent,

outcomes of the exploitative relations between humans and their surroundings (Chew 1995a, 1997).

4) The process of accumulation has certain consequences for the relations between humans and other living things and natural processes. The end results have often been ecological crises and disasters which often impact on human-human relations. Two outcomes result:

i) For Nature, besides the loss of beauty and naturalness, one can witness biodiversity crisis, loss of species diversity, polluted oceans, streams, and rivers, siltation, and climatological changes.

ii) In the case of humans, within this hierarchical ordering over world history for at least 5,000 years, some states, empires, civilizations, classes, etc have had dominating and exploitative relationships over other states, empires, civilizations, etc. The outcome of this in the human-human context has often resulted in hegemonic rivalry, trade competition, class struggle, wars, and in some cases, genocide. These relations can be termed as macroparasitic, i.e. exploitative relations among groups and classes of human beings (McNeill 1992:73). The term "macroparasitism" can also be extended to cover the human relations with animals, plants, and natural processes.

5) A corollary to this is that as the exploitative core-peripheral relationship deepens, the outcomes **inevitably result in severe impacts on the socio-economic processes of the nations, civilizations, and empires, as well as on other living things and natural processes** (Chew 1995b, 1997a, 1997b). The end results include, for example, the need to relocate production processes, population losses as a consequence of flooding, population migration from rural to urban and from peripheral to core zones, and associated health issues. The most extreme scenario being the collapse of civilizations such as the Harrapan, the Mayan, and the Mesopotamian as a consequence of extreme ecological degradation (Perlin 1989; Ponting 1991; Chew 1995a, 1997a, 1997b). **Such relationships lead us to suggest that the limits of Nature become also the limits of the world system, and the interplay between the limits of Nature and the trends and dynamics of the world system defines ultimately the historical tendencies of the world system** (Chew 1997a, 1997b).

[Page 392]

*Journal of World-Systems Research*

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## **B) CLIMATE**

1) **The rhythms of natural processes (climate) also interact with the social and ecological processes in a dialectical fashion resulting in changes that impact on all life.** Weather can be a catalyst in engendering change. For example, changes in climatological trends such as seasonal rhythmic temperature changes impact on crop harvests, which in turn, determines grain prices or the migration of people (see for ex.,

Ladurie 1971). It also causes changes to the natural landscape and the population of animals and plants. What this means is that climate can trigger breakdowns of societies and civilizations. At the same time, humans, civilizations, kingdoms, and empires have caused changes in the cyclic character of climate by their intrusions resulting in certain fluctuations. In other words, there is a relationship between climate and social history.

### **C) ECOLOGICAL BEING, SOCIAL ORGANIZATION, AND SOCIAL PRACTICE**

1) Like Marx in his early works, such as *The German Ideology* and the *Paris Manuscripts*, which address the concept of species living in an unalienated fashion, we need as well to focus on the distantiation that has occurred between us as Humans with other living beings and natural processes. **Human agency has a part to play in this overall world historical process, therefore we must retrieve our *ecological selves (being)* so that the Circle can be reconnected again.** Consciousness raising, deep explorations, identification, and realization with other ecological selves need to take place so that a "sense of place" and a "sense of wonder" can return (Naess 1986, 1989, 1995; Devall 1988). What it means is identification and solidarity with all life. In short, value changes that are more sensitive to the 'common circle' should be encouraged. It will mean a shift away from cultural values and practices that are anthropocentric in orientation and deemed universal (*pace* Parsons) organizing principles. We need to overcome this distantiation between human beings and other living things and natural processes to what Bergesen (1995) has defined as eco-alienation. Listen to what Bergesen (1995:113-114) has warned us:

To this seemingly final extension of social associationalism at the world-systemic level has come the challenge of deep ecology, which points a dagger at the heart of sociology. Simply put, if humans are not the only sentient beings, not only feeling, thinking, and perhaps moral beings, then to halt the boundaries of moral community and structural relations of hierarchy/domination at the edge of one species (humans) is to miss, and worse to mask, social relations between species, and between all living things. Sociology, as the science of association, is at present too narrow. It is the science of a sub-class of living things which does not acknowledge the structure and logic of the larger eco-associational order in which it is embedded. Deep ecology is a foot in both the factual and moral door of sociology, arguing a social order limited to the structural relations within but one species (humans) is not scientifically wide enough, and as such its transformation cannot pose as an ultimate moral cause, for any limited order that leaves other living sentient actors out, and further exploits and dominates them, cannot have a primal moral claim. Progressive social theory, without including relations with all living things, cannot

be considered progressive at all."

[Page 393]

*Journal of World-Systems Research*

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2) The above therefore means that the maxim of "live and let live" is translated to all life and not just to humans. In this case **we should not only insist on social justice, we should also demand ecological justice, for all life has intrinsic values. We do not award value solely if it serves a human purpose or need.** [14](#) All humans, animals and plants have the right to unfold.

For at least the last five thousand years in the course of world history there have been social movements of protest and groups with a different view of Nature fostering alternate lifestyles sensitive to ecology (Chew 1995b, 1997b). The politics of life therefore has been eco-politics as well. Today, eco-politics must necessarily combine both the local and global to try to tone down the excessive role of states, corporations, groups, etc. which to date are anthropocentric in their orientation. At the same time, social justice should be sought to eliminate hierarchical differences in terms of classes, castes, regions, etc. (Naess 1989:138, 1995:452). We need to fight against domination but it does not mean the elimination of that domination (Naess, 1995: 466). For we should celebrate creativity and wildness as they have a necessary place in our lives.[15](#) In other words, greatness and not excessiveness is what we need to strive for as a goal. Therefore, the political path is neither left(red) nor right(blue) but "in-front."

3) In an era of the demise of state socialism (i.e., of an existing social-economic organization) and the increasing prevalence of the TINA syndrome (There is No Alternative to Capitalism), there is a growing need to discuss other forms of social-political organization and governance that are not exploitative of the ecology (humans and other living things included). The latter social political organization ("capitalism") has always been exploitative of other living things, humans, and landscapes. Assuming that there is no nuclear winter or global ecological catastrophe in the long term, **complex economies will still continue, for it is impossible to return back to simple basic forms of subsistence living, especially in view of the level of global population, and the level of human learning and historical experiences that have been attained**. However, the principle of complexity need not be one based on current capitalist forms where specialization is favored, where urban life is fostered at the expense of rural communities, and where industrialization is pushed against agricultural production. Instead of a fragmentation of labor, we need an integrated variety of means of living whereby there is a "combination of agricultural and industrial activities, of specialized and non-specialized work and a mix of urban and rural communities" (Naess, 1973:97). Decentralization is called for as a means to increased local autonomy, with the hope that this will unleash the rich potentialities of the human being that is in rhythm with the ongoing processes of the Earth. The pursuit of local autonomy offers an opportunity to meet the ecological equilibrium, as most often local interests are dropped in a centralized decision-making

arrangement. In some communities, however, there will be a need for institutions that are part of a larger unity that can serve the functions of the larger whole (Naess 1995:450).

[Page 394]

*Journal of World-Systems Research*

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4) A corollary to the above principle of complexity is the ecosophical slogan "simple in means rich in ends" referring to the conduct of life. This is not to be confused as an appeal to austere, Spartan and self-denying lifestyles. Rather, it is to "live richly in an age of limits" (Devall, 1993). It is to reorient our lives along the "middle way" in order to strive for ecological integrity, noting the diversity of lifestyles and cultures. This is both a social and personal act.

The above thematics outline the parameters by which we can re-orient world-systems/world system analyses to further understand, and perhaps to shape, the dynamics of transformations of all life on this planet. It is important at this conjuncture of world history that we deliberate further on this as an alternative to the aged market oriented democratic social political form we have today, and the anthropocentric bias of social/political/economic constructs that we have developed to understand these social/political/economic organizational forms. To continue on the current path will mean continued exploitation of the ecology (humans included). Radical democracy is not an alternative if it means one with an anthropocentric bias.

At this conjuncture, fresh thinking is required to address the ecological imperatives we face, notwithstanding the fact that social movements have emerged to challenge the ecological degradation without much reliance on a specific theoretical orientation [16](#) **We need to collectively look for alternative arrangements. What has been proffered above is to initiate this collective dialog.**

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[Page 395]

*Journal of World-Systems Research*

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[Page 396]

*Journal of World-Systems Research*

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[Page 397]

*Journal of World-Systems Research*

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[Page 398]

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[Page 399]

*Journal of World-Systems Research*

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[Page 400]

*Journal of World-Systems Research*

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2. To date, several alternative world system/s approaches have been proposed besides the world-systems analysis of Immanuel Wallerstein to understand social change over the long term. For these various alternate approaches see Frank and Gills (1992a), Bergesen (1996), Chew and Denemark (1996), Chase-Dunn and Hall (1992, 1996), Modelski and Thompson (1996), and Wilkinson (1994).

[Page 401]

*Journal of World-Systems Research*

---

3. Ecological imperatives in the form of global environmental change have been viewed by some environmental sociologists, such as Buttel and Taylor (1994), as the latest evolution of the ideology of environmentalism whose emergence has been a consequence more of new social movements and certain scientific knowledge than from any change in the state of the earth. Besides generating an academic discourse, from an ecocentric position, this type of argument is a form of denial that also exists in society at large.

4. These modes of social, economic, and political arrangements could be seen as just ideological constructs (see Frank, 1991).

5. In this context, I am referring to actual practiced socialism and not to theoretical constructs, such as the one proposed by Bookchin (1980,1982,1989,1990).
6. Shiva (1995) has recently moved beyond taking an ecofeminist perspective.
7. In his forthcoming book, GLOBAL DEVELOPMENT: The Silver Age in Asia 1400-1800, Frank (nd) in his preface, has also suggested that we need to move beyond human-centricity in our analyses to ecocentricity. I agree.
8. It has been reported that climate variability started as early as 5,000 years ago or even earlier and that these climatic changes forced cultural adaptation (New York Times, October 1, 1996:B7). Those cultures that developed solutions adapted better than those that did not. This shift in climate as early as five thousand years ago is associated with the beginnings of El Nino (Sandweiss et al, 1996). The latter continues to impact on some regions of the world today.
- 9.... See also the debate between Frank (1991, 1994, 1995) and Wallerstein (1991, 1992) on the 'historicality' (nature and duration) of the world system or world-systems.
10. See for example, the recent works of Frank and Gills (1992a, 1992b) and Frank (1991) where they offer a non-Eurocentric view of global development. For a more comprehensive review and critique of Eurocentric perspectives on global development see Andre Gunder Frank's(nd) Global Development: The Silver Age in Asia 1400-1800.
11. I am referring in this context to the study of global transformation over the long term for at least 5,000 years of human history (See for ex. Frank and Gills (1995), Frank (1993), and Chew (1995b, 1997a, 1997b). This approach is different from the world-systems analysis of Immanuel Wallerstein and Samir Amin.
12. The exception being perhaps the works of Eckersley (1992) and McLaughlin (1993).
13. These thematics are explored empirically in my forthcoming book: World Ecological Degradation: The World System from 2500BC to AD1990. A short summary will appear as "Accumulation, Deforestation, and World Ecological Degradation 2500BC to AD1990" in Lee Freese (ed.) Advances in Human Ecology Vol.6 1997 (JAI Press).
14. For a discussion of intrinsic values see Naess (1987).
15. Naess (1995:467) has this to say about dominance and wildness: "Rich people who work in the world of business, who are supporters of the Deep Ecology movement, ask in all seriousness whether Green utopian societies *must* look so dreary. Why portray a society which seemingly needs no big entrepreneurs, only organic farmers, modest artists, and mild naturalists? A capitalist society is, in a certain sense, a rather *wild* society! We need some degree of wildness, but not exactly the capitalist sort. The usual utopian Green societies seems so sober and tame. We shall need enthusiasts of the extravagant, the luxurious, and the big. But they must not dominate." I agree.

[16](#). The exception perhaps is Earth First! which draws from deep ecology (Manes, 1990)

[Page 402]

*Journal of World-Systems Research*