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The Politics of Transition: Critical Political Ecology, Classical Economics, and Ecological Modernization Theory In China

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INTRODUCTION

This chapter considers societies experiencing a major transition in political and economic regime, and the mutual implications for nature and politics. Re-naturing political geography may allow us to reconsider theories of large-scale social transformation. In theorizing 'socialist' transition, this essay compares historical materialist approaches with others that emphasize the broader impacts of industrialism on resource use and the environment. A particular contrast is drawn with ecological modernization approaches, which have strong European and Scandinavian roots and emphasize the slow gains for the environment resulting from technological innovation in mature economies. The reason for this focus here is the institutional dominance of ecological modernization theory in contemporary development discourse on the environment, and its current application to countries undergoing socialist transition. Case study material is drawn primarily from the author's work in China.

What are the environmental impacts of socialist transition? How might we theorize this transition in ways that help us more clearly understand these environmental changes? How do environmental issues inform our understandings of socialist transition overall, or even challenge its most fundamental assumptions? These are just a few of the questions raised by the transition of former planned socialist societies to market-oriented societies. While this chapter will not attempt to answer all of them because of space and scope concerns, they provide a context for conversation between political geography and political ecology.

THEORIZING THE SHIFT FROM PLAN TO MARKET

As Watts asserts, we can productively locate the socialist transition debate 'against the backdrop of the particularities of socialist legacies and models of transition, the distinctive role of the party state, and the classical agrarian question debates …' (1998: 156). Kautsky posed the agrarian question as 'whether and how is capital seizing hold of agriculture, revolutionizing it, making old forms of production and property untenable and creating the necessity for new ones' (1988 [1899]: 12). But key to Kautsky's approach was his interest not

only in the scale of production, but also rural social structure and most importantly the *politics* of transition. Brought to contemporary socialist transition we might rephrase his questions as follows: How has socialist agriculture in its myriad forms been subjected to privatization, decollectivization and the introduction of new forms of property rights? How has capital seized hold of socialist forms of production and property while creating new ones? In this way the agrarian question is, as Watts notes, 'framed by the particular structures of socialist economy – and the diverse forms of socialist agriculture – that evolved in the post-revolutionary period: agrarian reform from below versus collectivization from above, or state farms versus Maoist collectives' (1998: 154). While socialist transition may not be comparable to the transition from feudalism to capitalism, this historical parallel offers potentially fruitful avenues for our further inquiry into its environmental consequences, particularly in the context of changing patterns of production and resource use (Muldavin, 1992).[1]

A key point of differentiation with the historical parallel is the contemporary role of the party state in engineering socialist transitions to market economies. As Watts and others (Walder, 1994; Oi, 1998; Wang, 2003) have argued, the 'success' of the Chinese case and the 'failure' of the Russian case turn less on the relative merits of gradualism versus 'shock therapy', 'as on the necessity and capacity of the party-state to shape the transition through the decentralization of property rights, the promotion of competition and the construction of "socialist markets"' (Watts, 1998: 156). This is a political challenge to the state and relies on the ongoing legitimacy of state action to achieve societal changes often at odds with the needs of the majority. Thus the ways in which that legitimacy was historically obtained (in China and Vietnam, for example, through extremely popular 'land to the tiller' rural transformations) sets the boundaries for acceptable forms of struggle in the contemporary period. In China's transition experience, the historical role of the party in liberating peasants from landlordism and extreme forms of oppression prior to the revolution, allowed the central government and party state to maintain immense legitimacy despite implementing policies that directly harmed the long-term interests of China's vast rural peasant majority.

In Vietnam, a principally agrarian country, liberalization of the economy happened quickly. The agricultural production crisis drove the reform process, leading to a complete collapse of the cooperative structure, and providing what Watts refers to as the 'Thermidor of the Vietnamese return to capitalism' (Watts, 1998: 151). Contrary to Kornai's claim (Kornai, 1992) that fundamental reform of former socialist economies is not possible without the destruction of the Communist Party, Vietnam (like China) confirms the neoliberal paradox that the transition requires a strong (preferably one-party-dominated) state to negotiate the difficult but necessary process of property rights reform, market liberalization, and insertion into the global economy with its heightened competitive influence on the national economy (Watts, 1998: 151).

The concept of 'transition' itself is problematic. Many analysts' share the normative assumption that the process is needed, and that it is linear in form (Lin, 1990; Sachs and Woo, 1993). This assumption obliterates the immense range of historical contexts, as well as the nonlinear, highly political character of the lived experiences of change. That is, there are numerous meanings and contradictions of transition. As one example, primitive accumulation is not supposed to happen but often does on a vast scale. The resulting political economies rarely fit into the expected categories but rather each reflects their specific national and regional histories. Who the transition is for, who will have the power in its implementation, what will be the means by which transition is carried out, and towards what ultimate goals, are all highly contentious and political questions that point to important struggles, both ideational and material. As Wang (2003) convincingly argues, China's transition is a myth promoted by the party state and other actors (economic, academic, political) to serve specific ends including state legitimacy, rapid private accumulation, and a highly unequal set of social outcomes. But rather than engage a debate over whether a transition is even happening, and the assumption that it embodies a move towards a preferred situation (at least for those driving it along), I will continue to use the term here while attempting to keep a nonlinear vision of the changes taking place integrated into this essay.

There is much variation in socialist transition experience across the world. In the former Soviet Union and Eastern Europe, the legacy of widespread severe industrial pollution, produced under top-down state-led modernization strategies of the previous decades, has loomed large in the complex re-emergence of environmental politics and regulation. Beyond the classic trade-off between economic development and environmental protection, substantial challenges face the nascent environmental NGO movements (Turncock, 2001). Furthermore, the immense variation of history, geography, culture, and economy make overgeneralization immediately suspect. Still, as Staddon and Turncock (2001: 233) state, 'post-communist entrepreneurs and their western partners have been quick to realize that there are large profits to be had, not just from the pillage of the region's natural resource endowment, but also from the translocation of pollution costs to a region desperate for foreign exchange and

lacking strong environmental controls'. Examples include the shift of pollution-intensive industries to Eastern Europe, toxic waste dumping, and so forth. Hilary French (1999) refers to this environmental exploitation as a form of 'ecological colonialism'. Furthermore, rapid marketization and privatization, often imposed and led by the dominant development institutions of the West (IMF, World Bank) through 'shock therapy', have created distinct environmental challenges and ongoing problems (Pickles and Pavlinek, 2000).[2]

Vietnam and China adopted decollectivization strategies with the following attributes: a relatively egalitarian distribution of land and some form of private property rights, a hybrid form of state and market regulation, substantial local state intervention in the reform process, and a shift in responsibility from the state to individual peasant families to support rural surplus labor (Watts, 1998: 180). But in Vietnam, as land and markets were fully privatized, the cooperative structure also dissolved. Unlike China's two-tier property system of private plots existing simultaneously with village and township collectives continuing to function, albeit often in new forms (Oi and Walder, 1999; Gilley, 2001), in Vietnam full privatization eliminated the positive potential that continued collective organizational forms provided China in its rapid rural industrialization process following reform. As Watts points out, the fact that the transitions in Vietnam and China are happening in different ways and with different consequences 'alerts us to the complex and differentiated ways in which politics and economics – rather than some undifferentiated capitalism – are being decomposed, reconstituted and refigured in the post-socialist order' (1998: 182).[3]

In China the state-led transition focused first on rural decollectivization (with much later urban reforms), and without complete privatization of natural resources and the commons, resulting in a substantially different experience than other cases of socialist transition, though environmentally problematic as detailed below. Very rapid and relatively unregulated growth led to intensification of old environmental problems of the former socialist state (Muldavin, 1992, 1998b), and the creation of new forms of resource destruction, pollution, and environmental degradation structurally enshrined in the newly evolved institutions of China's 'market socialist economy'. China's contemporary paradox – growth built on decay – is the focus of my inquiry into the 'transition' process. Building a detailed historical analysis across multiple scales of the environmental and social consequences of the reform era in rural China, I argue that a historical critical political ecology approach provides a unique optic to understand the impact of policy changes on rural livelihoods, and the important and underrated role that rural hinterland areas play in simultaneously challenging globalization, national development objectives, and regional transformation, while being used as fundamental resources for these very processes. Though it is not the focus of my discussion here, I argue that contemporary China's transition is best explored through an analysis of China's integration into the global economy and the impact of this both in China and in the world (Muldavin, 2000a, 2005b, 2006). The recent rise in social unrest associated with the much-discussed environmental crisis in China is forcing the state to re-evaluate its current development path as it struggles to maintain legitimacy with the country's majority (Muldavin, 2005b, 2006).

THREE BROAD APPROACHES: KEY ARGUMENTS AND ASSUMPTIONS

In this chapter I shall lay out three generalized approaches of inquiry on transitional economies and the question of environmental disruption, which I term classical, ecological modernization, and Marxian. This is not to say that other approaches are unimportant, but more to provide clear definitions of dominant strands of engagement that have strong local and national followings within the communities and regions where they are applied and contested, as well as in the Northern countries from which they have primarily drawn inspiration and institutional backing. While certainly not exhaustive, the following typology of key positions on transitional economies and environmental outcomes is a starting point for further detailed discussion.

The Classical Approach

The first broad approach to environmental impacts of socialist transition is classical. Within the classical literature, two variants demand space. The dominant Smithian variant associated closely with the rise and subsequent hegemony of neoliberalism looks first and foremost to a *laissez-faire* model in which efficient markets resolve all environmental problems. In orthodox neoliberal theory, the proper pathway in the transition from socialism to capitalism rests on a set of key assumptions to best achieve human well-being: that private ownership, free prices, and free trade are necessary preconditions for increasing productivity. Thus, the four key processes to focus on are property rights reform, privatization, price and fiscal reform, and setting an appropriate pace of 'liberalization', that is, 'big bang' or gradualist (Watts, 1998: 155; Harvey, 2005: 2). Therefore, in terms of the environment, the goal is not to hinder industrialization, but to improve market efficiency so

that it will guide resource use in ultimately the most environmentally sound manner. Promoters of this neoliberal model assert that proper pricing through well-functioning markets will bring rational use of resources as opposed to the inefficiencies of the previous planning model. Efficiency gains will be broadly shared through trickle-down and ripple effects, assuming proper utilization rates of resources. Externalities, such as environmental degradation, may require the creation of new markets or some limited state regulation, but it is the primacy of private property rights in a competitive capitalist economy that unleashes entrepreneurial freedom and skills that will best ensure proper long-term resource use. Freedom and democracy will flow from free markets and free trade and create appropriate civil society institutions and market-driven mechanisms to help fill any voids left by state withdrawal from regulation of resource use.

The Ricardian variant takes a further step by asserting that the ability to produce with negative environmental consequences provides a comparative advantage during 'transition' in terms of global competition. To hinder this comparative advantage with unnecessary regulation limits the proper functioning of markets in allocating and utilizing resources at maximum efficiency on a global basis between nation-states. Thus, for example, China or Russia may choose to undertake environmentally unsound production practices as a comparative advantage, and the costs and benefits of this will be appropriately distributed through subsequent economic growth.

Somewhat paradoxically, the classical approach uses formalist economics to assert an apolitical, even anti-historical, approach, while depending upon state economic policy and power to enforce its method and practice in achieving transition despite the political contradictions that develop. As Wang clearly argues, the attainment of hegemonic status for classical neoliberalism in China was part and parcel of the state's use of 'economic liberalization to overcome its crisis of legitimacy' (Wang, 2003: 44). Furthermore, its discursive and ideological dominance in China allows the state and other actors to use 'transition' and 'development' to 'patch up internal contradictions' (ibid.). In terms of problematizing the environment, this has legitimized the market as the primary answer, and the framing of all negative environmental outcomes as the result of continued adherence to other failed alternatives.

The Ecological Moderization Approach

Within the second broad approach to environmental impacts of socialist transition, ecological modernization, there are two strong variants or currents that I will briefly discuss here: Keynesian and Cornucopian. In the Keynesian variant it is asserted that a strong regulatory and interventionist state can limit the negative environmental externalities of the transition to a capitalist economy. This position is put forward at various times by a wide range of actors, including among others the World Bank (2002), the Chinese state, and policy-makers around the globe. The state, they argue, can promote industrial modernization with positive environmental outcomes through investment in cooperative research, tax policies promoting environmental technologies, and strict regulation of corporate malfeasance and misbehavior – for example, the development of powerful national environmental protection agencies.

Within the Cornucopian variant of ecological modernization, the primary assertion is that the technological advances that accompany the transition to an advanced industrialized country will resolve the environmental impacts of rapid industrialization. This increasingly popular analysis depends on technology to solve all environmental problems, hence the use of the term Cornucopian.[4] More specifically, the new environmental problems created by industrialization will push the emergent civil society and an increasingly institutionalized environmental protection hierarchy to enable (through tax policies, for example) or force (through legal and regulatory means) industry to create new technologies to resolve the environmental problems it creates. Thus, positive development and environmental outcomes can result from rapid industrialization in a win-win scenario in which the application of advanced environmental technology and introduction of cleaner technologies helps ameliorate the environmental impacts of rapid development. The rise of independent civil society and NGOs accompanying the transition to a market economy will provide key pressure in this process, as well as providing actors who demand accountability of both the state and private sector.

Promoters of this ecological modernization model within social democracies in northern Europe argue that it is applicable throughout the world. They argue that its success in northern Europe (particularly in Scandinavia) provides a guide to its implementation in Southern nations, with great potential in China and other countries in transition from socialism to capitalism (Mol and Spaargaren, 2000). For example, in a recent collection in Ho (200:37) and Mol (2006: 37), ecological modernization theorists argue for the application of the theory in China. In their scenario, China's rapid modernization with technological advancement will create environmental problems but will also create the technological advances, innovations, and needed capital investment to resolve them, along with the institutional ability to regulate the environment. The reversal and clean-up of any environmental damage and the subsequent

decrease in harmful environmental trends will be achieved through rapid adoption of energy-efficient technologies, investment in advanced pollution control equipment, and so forth. The win-win will also be achieved through the rapid expansion of the environmental technology market, which provides new markets for First World environmental technology exports, while simultaneously helping build up new environmental technology manufacturing capacity in transitional economies, such as China. Everyone benefits from the combination of modernization, technological advancement, and resolution of environmental problems. A key assumption concerning China is the simultaneous development of a well-informed public and democratic expression, that is, an active civil society to work in tandem with a free press in enforcing accountability of the state and private sector, thus ensuring the positive outcome of rapid development in a relatively benign environmental manner, overseen by a technocratic elite.[5]

It is not just a matter of chance that the ecological modernization vision has taken hold in the dominant development institutions during the era of neoliberal hegemony. Built on a belief in markets and growth as means to rationally appraise development success or failure, there is little conflict with classical neoliberal assumptions in this regard. The faith in science and technology, properly applied by a technocratic elite of environmental managers, to overcome the natural limits to growth through the creation of new resources, also carries a strong suspicion of broader democratic participation in decision-making around environmental issues. This parallels the neoliberal economic discourse that paternalistically speaks of the need for objective and efficient management that can carry through the painful structural adjustment process of communities that might resist this necessary medicine if given the choice through participation and democratic decision-making. As discussed above, this is part of the neoliberal paradox in which strong states are a prerequisite for successful implementation of economic liberalization.

As Blaikie (1999: 136) points out, ecological modernization is now the dominant narrative for analysis of environmental issues at the global level and by international institutions. He cites Spaargaren and Mol's 'rather optimistic view' of a technology-dependent ecological revolution (1992). Blaikie's careful assessment of ecological modernization theory concludes with a negative critique for the following reasons. First, he argues that it has 'little to say about power relations which permeate the socioeconomic process which help to shape environmental processes and outcomes, as well as their representations and framings' (2000: 138). Second, he argues that it ignores the South, talking exclusively in 'terms of existing and feasible technologies of the industrial North'. He points to a series of publications that challenge its transferability to the South, but nonetheless concludes that it remains 'the dominant environmental discourse in spite of all the criticisms from postmodern, poststructural and populist perspectives'. Given this domination, he points to its continuity with what he terms ecological modernization's 'colonial style', despite its participation in critiques of this very approach.

Redclift (1997) argues that the focus on internalizing externalities ignores their distributive causes and consequences and fails to acknowledge the essential confirmation of existing power relationships via the pathway of continued industrialization as the answer to environmental crisis. Redclift also argues that neoliberal economic policies have increased externalities, highlighting the basic contradictions between economic growth and conservation that ecological modernization fails to acknowledge. He draws attention to a fundamental paradox missing in ecological modernization's economic valuation of the environment: distribution and equity, both inter- and intragenerational (1997: 338–9).

The Maximum Approach

The third broad approach to environmental impacts of socialist transition is principally, though not exclusively, Marxian. It has a number of different strands, epistemological and ideological as well as 'disciplinary', including critical political ecology, radical sociology (Buttel, 2000; Szelenyi, 1998), and poststructuralism (Escobar, 1995). I will focus on one variant: critical political ecology.

What distinguishes critical political ecology approaches to the environment? First, critical political ecology is a multiscalar analysis, methodologically integrating local, regional, and global actors, institutions, and structures. Second, it is a historical analysis concerned with processes of change over time, and particularly during systemic and often dramatic shifts in political economy such as from precolonial to colonial, or colonial to postcolonial. Third, it emphasizes political economy analysis, such as in Blaikie's early definition of political ecology as ecology plus political economy (1985). The evolving roles of the state and the market in influencing environmental outcomes are central. Fourth, most political ecology is ethnographic, but unlike cultural anthropology and cultural geography that earlier provided local ethnographies and village studies, political ecologists do ethnography at multiple scales, from local to international, and inclusive of actors and institutions far beyond peasant households. Thus, Blaikie's insistence 'that policy makers, government officials and scientists be scrutinized as closely as Third World peasants' opened the door to questions of

power, knowledge, and ideology and their relation to claims about environmental degradation, 'foreshadowing the incorporation of feminist, postcolonialist and postmodernist challenges to European Enlightenment notions of rationality and universal truths' in contemporary environmental debates (Neumann, 2005: 31).

Fifth, critical political ecology productively grapples with poststructuralism and discourse analysis, and hence the material analyses that dominated earlier work have been replaced to a large extent by analyses that critically interrogate the relationship between power and knowledge constructions, particularly in science. Many critical political ecologists questioned the construction of dominant scientific knowledge long before the poststructural turn in social theory (Carr 1977, Watts, 1983; Blaikie, 1985), but the recent analyses have both expanded and clarified this particular analytic (Peet and Watts, 1996; Forsyth, 2003; Blaikie and Muldavin, 2004b). The essentially political and ideological struggles over objectivity and rationality, carefully deconstructed earlier by Harvey (1974), have now been recast integrating the 'contingent and dynamic nature of environmental change … bound up with social and cultural processes' (Scoones, 1999: 493). These insights of critical social theory have paralleled and reinforced the reassessment of equilibrium models in ecology. Thus, the replacement of long-held static views of nature as a system in balance with nonequilibrium approaches has been mirrored by a rejection of static notions of knowledge construction struggles over environmental narratives, and thus the growing emphasis upon discourse analysis (Stott and Sullivan 2000; Forsyth, 2003). A persistent critique of political ecology is its limited integration of sound ecological science. This is partially answered by the current productive exchange between ecologists and political ecologists (Neumann, 2005).

Critical political ecology is a form of radical critical realism. Its research agenda focuses on uncovering the links between broad changes in the political economy and environmental degradation. Its activist agenda focuses on social change to counter perceived environmental degradation and social injustice. Still marginal in institutional terms, being limited primarily to university settings, it argues that a fundamental change must occur in social relations of production, as well as control over the world's resources at multiple scales, in order to resolve environmental problems. Its promoters assert that a multi-scaled structural analysis is needed to understand completely the environmental outcomes of various 'transitions'. Critical political ecologists generally assert that the process of market penetration and capital penetration of the Third World leads to privatization of previous collective goods with subsequent overexploitation and negative environmental impacts through rapid resource degradation. That is, the penetration of global market forces to the local level, accompanied by the commodification of natural resources, leads to intensified resource destruction and environmental degradation.

In the case of former state socialist transitional economies, environmental impacts reveal structural problems of the transition. These will not disappear with transition to a capitalist economy, as often asserted by classical and ecological modernization theorists, but will be further amplified (Muldavin, 1992, 1997; Bryant and Bailey, 1997). The withdrawal of the state and regulatory structures during transition, combined with the destruction of collective and community institutions of resource management, leads to a free-for-all of environmental destruction in the subsequent institutional vacuum. The result of these structural environmental problems is declining sustainability, rising risk and vulnerability of the majority, and their increasing resistance to state policies and practices. The benefits of this process are garnered by a new elite while the problems are spread upon the vast impoverished majority, particularly the most vulnerable among them with the least access to market opportunities, either because of limited household labor or other intangibles such as requisite social networks.

As a critical and generally negative assessment of capitalist modernization, critical political ecology is highly suspect of purely technological or managerial solutions to what are fundamentally viewed as complex social processes – including historically unequal access to resources based on class, caste, age, gender, and race (Rocheleau et al., 1996). Thus a critical political ecology view of transitional economies' environments focuses our attention on the driving structural forces of global integration, transferring price signals and capital demands from distant unaccountable places in First World capitals to local environments, and utilizing a geographic fix to escape old, heavily regulated (environmentally, socially, and occupationally) economies, workers, and communities in the First World (Western Europe, Japan, and the US). These same economies have benefited (as ecological modernization theorists theorize and hope is transferable to the Third World) from environmental technology and strong institutional and regulatory frameworks. Yet, in the current context of globalized production complexes that span regions and reduce the importance of the nation-state and its regulatory potential, the result is globalized production processes driving a new race to the bottom worldwide (Gibson-Graham, 2006).

These complex interconnections challenge earlier visions of First and Third Worlds, and require a more sophisticated understanding of

regional political and economic formations that are transnational in practice, if not in national politics. It is here that political geography has much to offer political ecologists as they struggle to integrate these complexities in their analyses of environmental change. Political ecologists have principally focused on the questions of market penetration into formerly peasant societies, and the political economic structures and agents affecting nature and resource use, and have under-theorized socialist transition in general. But a number of scholars (Muldavin, 1992, 1997, 2000a; Watts ,1995, 1998; Bryant and Bailey, 1997) have attempted to better understand the ways in which political ecology might be applied in this transitional context. Political geographers' focus on the political institutions and actors at play, rather than nature per se, can reinvigorate the discussion of politics in critical political ecology.

A key challenge for many political ecologists is whether theoretically and methodologically they can persuasively answer the following dominant assertion of the classical and ecological modernization approaches: the environment is best served when societies are guided in their resource use practices by market mechanisms. It is not only in the ecological realm that critical political ecologists find some of their strongest counter-arguments, but particularly in the political realm where resistance and outright rebellion to state modernization strategies encourages a careful re-evaluation of the role of politics, formal and informal, local and national, as well as the rapidly changing geopolitical context in which globalization strategies are both challenged and reconstituted on a daily basis by a wide range of actors. Here too political geography may contribute to political ecologists' attempts to integrate these political moments, actions, and structures into an overall analysis of environmental change (see Peet and Watts, 1996).

A CRITICAL POLITICAL ECOLOGY OF CHINA

China's four thousand years of resource use has led in many places to severe environmental degradation and complete environmental transformation. Each subsequent form of political and economic organization inherited this legacy. The socialist planned economy following 1949 inherited environments in many regions that were often already highly degraded, challenging planners with basic questions of how to enable sustained production in such contexts. Mass campaigns had the potential to both improve and destroy the environment. Shapiro (2001) strongly argues that the cult of Mao led to severe environmental destruction in the 1950s and 1960s in China. But simultaneous to this were many land improvement strategies that drew upon centuries of knowledge and specific understandings of local environments (Muldavin, 1997, 2000a; Ho, 2001). While Shapiro's rather lopsided account of the environment under Mao has many strong components, it fails to acknowledge the positive potential of mass mobilization for environmental preservation, soil erosion control, tree planting, water conservation, and so forth. Certainly many of these activities failed to reach their goals, but others did achieve measurable environmental improvement and thus cannot be completely disavowed. Thus, the methodological question of how to separate out what are long-term historical aspects of environmental degradation, from those associated with the more recent histories of socialist planning models, and the current transition to market-oriented economies, is key and not as simple to answer as one would hope.

In China, recent state and World Bank interest in 'third wave' environmental regulation, named because it follows earlier attempts at first, command and control, and second, market-based approaches, combines ecological modernization theory's optimistic expectations of market solutions to environmental problems via technological innovation, with the rise of civil society as the low-cost alternative to a formal regulatory process (Wang et al., 2002). A key problem identified by ecological modernization theorists is the limited role of civil society in China, and thus, predictably, the answer is its expansion (Mol, 2006).[6] The three waves of environmental regulation in China represent in essence the former state socialist approach, the classical neoliberal approach championed over the last two and a half decades, and the new ecological modernization approach that asserts a new solution to the lived environmental destruction of contemporary China. This provides a useful backdrop for the alternative analysis I will present here of the environmental outcomes of China's socialist transition.

Driving 'Mechanisms' of Transition

Beginning in 1978, the driving mechanisms of China's socialist transition experience included decollectivization, the introduction of the household responsibility and contracting system (HRS), privatization and enclosure of the commons, state withdrawal from the rural economy and entitlement provision, and ultimately global integration of China.[7] Market penetration occurred in a highly uneven and unusual fashion following the introduction of reforms. Initially limited to rural areas, the state focus in the first five years was to increase grain production by 'unleashing' individual incentives, though still heavily tied to state-controlled

pricing systems. The state significantly increased grain procurement prices and improved provision of fertilizer, allowing peasants to more than double their use during this time. The resulting rapid rise in grain production further legitimated Deng's call for complete decollectivization and transformation of rural as well as other parts of society, including urban areas and state industries. While these changes were slow to take hold, not gaining real traction until the early 1990s, the successful increase in rural production was key to the ultimate introduction of the contracting system, as well as privatization and deregulation, in the urban industrial core (Muldavin, 1983, 1986, 1998a; Selden, 1998).

By the early 1980s the state had introduced free farmers' markets in the rural areas as a way for peasants to dispose of excess production beyond state quotas. This two-tier system provided peasants with new avenues to increase household income, and there was rapid diversification of the household economy into sideline production of animals and vegetable and fruit crops, as well as small industries for those lucky enough to gain access to the former collective assets. While production increased, the result was rapid economic and social stratification in a rural landscape that had remained relatively egalitarian for the previous thirty years. Even small machines, such as a grain grinder, provided a huge advantage to a family, allowing them to join the ranks of the 10,000-yuan newly rich households, widely celebrated in the Chinese official press. In one of Deng's most memorable aphorisms, 'to get rich is glorious!', this process of societal stratification was given the state's vigorous stamp of approval (Blecher, 1997).

The HRS played out in diverse ways depending on the history of the particular commune, its leadership, and available resources and assets to contract out to households. The large collective fields were divided into narrow strips of various qualities, with every family receiving a plot of each kind of land, visually transforming the countryside overnight from a mechanized large-scale farm economy to small noodle strips of land worked by hand. Where once there had been large continuous fields of corn, now there was a patchwork of crops. Where before you would have seen specialized teams of peasants plowing fields with large tractors, now each household returned to draft animals, owned or hired, to plow their tiny plots. Where before crops were rotated across the landscape through state-led 'scientific' management, now peasant households individually decided how best to manage the land to achieve the quota production demanded by the state, and produce surpluses to sell to the state or in the local free markets (Muldavin, 1992).

The technological devolution in agricultural production practices was mirrored by a devolution in gender relations (Jacka, 1997). As collective institutions declined, patriarchy was re-strengthened, and peasant households chose to send boys to school, while sending girls to the fields to take up the new intensified labor demands. The result was a rapid devaluation of women and women's labor, and rising intra-household conflict as young women saw their own situation worsen relative to that of their mothers. As sideline and village industries expanded, it was principally young girls that were sent to work in these new small factories, often facing horrendous occupational hazards and working conditions (Muldavin, 1992, 2000a).

The state also shifted control over other resources from the collective to the individual. Collective commons, such as grasslands and forests, were enclosed, often fenced, and contracted out to peasant households. Collective regulation of these former commons was further weakened, simultaneously with a generalized increase in risk, as social institutions connected with the collective, focused on long-term production and security, ceased to function now that the resources formerly used to support them had all been contracted out to households. Peasants responded by intensifying grazing, logging, and other extractive practices in a risky deregulated context where success was judged only on increased output and fulfilling contractual obligations. Time horizons in production shortened significantly throughout this period, leading to rapid degradation as discussed below (Cannon and Jenkins, 1990; Muldavin, 1992, 1997).

Impacts on Environment and Nature

The impact of socialist transition on the environment and nature in China can be assessed through any number of examples. I have argued extensively that, with decollectivization in the first decade following the reforms, the mining of communal capital was a key component of rapid environmental degradation and undermining of rural sustainability (Muldavin, 1986, 1992, 1997). I define communal capital as the resources preserved, built up, and collectively managed during the commune period with the expectation of long-term benefits accruing to all commune members. As the state shifted decision-making and control from the collective to the household and individual, and social welfare and entitlements disappeared, peasants operating in this riskier environment moved to rapidly utilize the former assets of the commune, including natural assets such as forests, grasslands, and agricultural lands as described above. This enabled a rapid rise in production that paradoxically further legitimated the reform process, though at a great cost.

Hence the term 'mining communal capital' invokes the unsustainability of the process, as well as the source of the mined 'assets'. In addition, the state mandated distribution of many village enterprises to a few lucky households in this first phase of reform. With little environmental or occupational regulation to hinder production practices, these industrial enterprises became subcontractors for the most toxic components of local, national, and even international industries. Damaging the health of workers and delivering large quantities of untreated pollutants onto the land, into the water and air of the rural villages, they simultaneously became the much touted engine of growth in China's rural economy, while destroying the people and resource base upon which they depend.

In China's vast grasslands, decollectivization led to rapid increases in animal numbers and intensification of grazing, with severe negative results including rapid desertification and sodic alkalinization of huge areas of formerly productive land (Muldavin, 1986, 1992, 1997). Forests contracted out to households were quickly felled, leading to severe soil erosion, impacting nearby arable lands and waterways, and destroying diverse habitats that had formerly supplied many important products to local villages. Cropland practices were altered and intensified, eliminating green manuring, rotation, and fallow periods, and quadrupling the use of fertilizer as well as other chemicals. After an initial rapid rise in yields, the resulting decline in soil fertility and structure as organic matter declined led to stagnating yields, as well as diminishing returns as the costs of formerly subsidized inputs rose. In the risky context of household production, these declining returns only pushed peasant farmers to intensify further as they struggled to increase crop outputs, often shifting to double cropping systems and the adoption of other unsustainable practices (Muldavin, 1997).

As this array of environmentally destructive practices intensified, the infrastructure built up during the collective period began to fall apart. The weakened collectives could no longer enforce collective labor quotas in the emergent market context, and thus irrigation infrastructure, conservation plantings, and other maintenance of critical infrastructure such as levees, was neglected if not abandoned altogether. State investment in agriculture, including infrastructure, simultaneously fell from 13 percent to 5 percent of the state budget in the first ten years of reform. As a result, levees failed, irrigation canals no longer functioned to deliver water to fields, erosion from denuded hillsides and grasslands covered arable lands with poor-quality soils, and overuse of pesticides and fertilizers led to new pest outbreaks and 'burned' soils, all corresponding with a rise in 'natural' disasters such as floods, droughts, dust storms, plagues, and crop failures (Muldavin, 1992, 1997, 2000a).

State Delegitimation, Resistance, and Political Crisis: Environmental Justice and Rising Protests

State legitimation has been a key issue throughout China's reforms and socialist transition. Whereas the initial successful rise in grain production (and rural productivity overall) legitimated state calls for complete decollectivization and application of the reforms to the urban industrial cores, subsequent stagnation in production, rapid inflation, growing socioeconomic inequality, and widespread corruption in the reform process during the later half of the 1980s, undermined state legitimacy and was at the heart of the Tian'anmen uprising in 1989. In fact, contrary to popular perception, the rural roots of Tian'anmen were substantial, and were key both to the movement's impetus as well as its ultimate failure as students were unable to forge links with China's peasants and workers in meaningful ways (Muldavin, 1999).

Beginning in this period, and intensifying through the 1990s and to the present, peasants have increased direct and indirect acts of resistance to the transition process and its outcomes. Indirectly, peasants have hidden surpluses, lied to state authorities about actual natural conditions, and otherwise attempted to limit state claims on their produced surpluses. Claims for relief from 'natural' disasters were both a product of the environmental degradation and infrastructure decline discussed above, and also were a weapon for peasants to clearly test and push the boundaries of state legitimacy (Scott, 1985; Muldavin, 1997). Following 'disasters', peasants demanded debts to be written off, new free credit, lower quota requirements, increased aid, and cheaper subsidized inputs. These ongoing indirect acts emanate from the problems discussed above, as well as excessive taxation (fees, fines, levies, etc.) imposed upon peasants by local governments no longer able to call upon the central government for financial support. The result has been a widening gulf between local political leadership and peasant producers, with the central state and the 'party of the peasants' increasingly viewed as the only remaining legitimate voice to settle disputes.

Simultaneously there has been a rise in direct forms of resistance and outright militant acts of rebellion. By the late 1980s, inflation had reduced peasant incomes in many regions to the point where they were losing money by planting crops, yet they were contractually obliged to continue producing to fulfill state quotas. Resulting sporadic demonstrations, along with the widespread indirect forms of resistance, were a wake-up call for the state. In the 1990s I witnessed numerous demonstrations against state reform policies, with violent responses by local state authorities (Muldavin, 1997, 2000a). These rural challenges came at an inopportune time

for the state, as its shift to urban reforms was creating a fiscal crisis and limiting its ability to respond to peasant demands with new investments. The increasing primacy of the urban industrial coastal regions, led by the highly successful special economic zones, shifted the balance of power and thus surplus distribution from rural demands to urban concerns. Ongoing difficulties in reforming large-scale state-run enterprises, rapid increases in urban unemployment, and the creation of a new urban middle class, combined to force the state to further withdraw from rural development issues at a time of growing rural crisis. The state's response was to promote more rapid growth (averaging near 10 percent a year for the last twenty years) in the hope that trickle-down effects would help alleviate growing rural complaints (Muldavin, 2000a, 2005b). Paradoxically, this growth-based strategy has only served to amplify environmental destruction and socioeconomic inequality, thus leading to rising incidents of unrest (Muldavin, 1997, 2006). In 2004 there were 74,000 officially recorded incidents. In 2005 this grew to 87,000, widely understood as a direct result of widening gaps between rich and poor, between urban and rural areas, and between the rapidly growing industrial east and the stagnating agricultural hinterlands (Muldavin, 2006). In this context, the environment has become part of the political terrain in which Chinese peasants began to negotiate their relations with the state (Muldavin, 1996, 2000a). In essence, the state's legitimation crisis is now increasingly entwined with environmental decline, not only in rural areas, but in urban regions as well. I will provide here just a few recent examples.

There are now thousands of documented cases of peasant protests over pollution from factories causing severe air, land, and water pollution. Crop losses, health impacts, and loss of access to potable water have become part of the daily news in China (Muldavin, 2005b). The dam-building frenzy in China has displaced millions, and new plans for dozens of large dams in the southwest along the Salween, Mekong, and Yangtze rivers have led to large-scale protests and confrontations with local and central authorities. This has also led to the rise of an energized environmental NGO movement in China, though severely hampered by state limitations on the development of an independent civil society (Muldavin, 2005a).

Toxic spills are so common that it is only the largest and most destructive ones that are reported. In November 2005, 100 tons of benzene spilled into the Songhua River in northeast China, not only threatening urban water supplies in the large city of Harbin, but also passing through hundreds of rural villages with no alternative source of water. This is a direct result of the highly unregulated industrialization in China, particularly acute in the rural hinterlands where peasants labor in some of the world's dirtiest and most dangerous conditions. Many of these rural factories are subcontractors to Chinese and international companies, tying these environmental injustices to the rising consumption of Chinese-made goods globally (Muldavin, 2005).

Other examples of environmental protests concern the state's logging ban and slope-land conversion project following record flooding in the Yangtze River valley in 1998. Peasants are increasingly criminalized for accessing traditional forest reserves. State programs requiring conversion of slope fields to grassland and forest has been very unpopular, as promised compensation for lost income and livelihoods has failed to materialize, leaving households without adequate food and fodder (Muldavin, 2005a). Rural mining is another major source of environmental pollution, as well as occupational hazards. Rural China's thousands of small coal mines have the worst safety record in the world, killing 5,986 peasant workers in 3,341 accidents in 2005 (State Administration of Worker Safety, 2006). In addition, mine effluent is improperly dumped into valleys and open areas creating toxic mountains that pollute ground water and spread onto fields, decreasing productivity. Driven by China's ever-expanding energy requirements as factory floor to the world, the combined impacts are a widely reported major source of rural conflict.

Farmers are also demonstrating against land losses, as real estate development, factory building, waste dumps, and large infrastructure projects such as roads, airports, and power plants have too often been carried out through land seizures without proper compensation or any process for dealing with peasant complaints. The land question in China is a key political problem for the state, and fundamental in the current challenge to its legitimacy. In December 2005 in China's Guangdong Province, after villagers' peaceful protests over land seized by local authorities for a power plant went unheard for years, local militia killed more than a dozen peasants during a tense standoff. I have argued that

> [w]hile avoiding full land privatization and, until recently, massive landlessness of the rural majority, the state still allows unregulated rural land development for new industries and infrastructure. Land seized from peasants reduces their minimal subsistence base, leaving them with what is called 'two-mouth' lands insufficient to feed most families, thus forcing members of many households to join China's 200 million migrants in search of work across the country. In many areas where I have carried out research, some households have lost even these small subsistence lands, swelling the ranks of China's landless peasants, who number 70 million according to official estimates. (Muldavin, 2006).

Given the loss of collective welfare entitlements, peasants are forced to desperate measures to try to reverse their rising vulnerability.

As China's transition has created serious problems, and more obvious contradictions of the process have emerged, China's emergent New Left has taken up the banner of environmental and social justice. Ranging from liberal nationalists to neo-populists to more radical internationalists, these varied intellectual currents provide new voice to what is already a well-developed resistance (Muldavin, 2005a; Pocha, 2005; Wang, 2005).[8] Connected with the expanding organs of civil society, these activist intellectuals increasingly point to environmental justice narratives as the basis of legitimacy and power for various protests. Whether such a movement can coherently challenge state policies, channeling grassroots energy into an effective national debate, is still unclear. The historic divide between urban elites and rural peasants continues, and limits many collaborations to patronizing acts of charity. Still, there is no question that this is a very exciting time in modern China's political evolution, and as such the ties between environment and politics provide critical political ecologists and political geographers with much common ground for joint analysis – the subject of the next section.

WHERE TO FROM HERE? THEORY, METHOD, AND PRACTICE FOR RESEARCH, ANALYSIS AND ADVOCACY

I initially laid out classical, ecological modernization, and critical political ecology approaches to assessing the environmental impacts of socialist transition. Given the prior dominance of the classical neoliberal approach, and the current hegemony of new ecological modernization, the alternative approach of critical political ecology is primarily offered as a counterpoint to these dominant narratives and guiding ideologies for assessing the process of transition, as well as determining the appropriate path to follow in the future. Despite its social democratic roots in the Scandinavian context, the new ecological modernization theory provides a new seductive twist on the dominant neoliberal narrative by setting up the problem as not enough rather than too much unfettered industrialization, thus simultaneously justifying the status quo of continued unsustainable growth and adherence to modernization strategies, with the equally questionable assertion that the environmental problems inherent in such strategies will force societies to confront the disasters at hand and evolve, with some limited government intervention and support, principally technological means to overcome these problems and repair the damage already done. Shared belief in free markets, rapid industrialization, and the adequacy of technological advance to resolve all environmental challenges, provides the non-conflictive context that explains the rapid adoption of the new ecological modernization by the hegemonic development institutions principally guiding the socialist transitions in question. Neoliberalism's declining star has necessitated its subtle replacement by the new ecological modernization in a form that does not challenge the fundamental assumptions and practices of the past three decades. Its successful integration at the World Bank, among other key institutions, is a clear indication not only of institutional flexibility that has allowed for the adoption (if not cooptation) of each environmental approach from sustainable development to livelihood analysis, but also of its inherent lack of critical analytical rigor.

This argument suggests that the transition from socialism to capitalism requires analysis at multiple scales, and I have argued in this chapter that a nuanced structural analysis of changes in daily practices provides an alternative approach to classical economics and ecological modernization theories for understanding this historical transformation. Important avenues for this research are assessments of the institutional means by which these transitions are carried out, in particular the powerful development organizations and international financial institutions (World Bank, IMF, UN, etc.), and the policy process through which their approaches are translated into national and then local actions. A key and under-researched aspect of socialist transition, then, is the role of international financial institutions (IFIs) and bilateral aid organizations. Surveying international development aid contributes to a clearer understanding of the various roles of aid institutions in the 'transitional' process, particularly in reference to environmental concerns. Both environment and development aid policy provide windows into the socialist transition process – its actualization and its limitations. Development aid provides massive transfers of capital and technology that underpin and enable the transition process (Muldavin, 1993, 1995, 2000b). Thus a major focus for future research should be an empirical assessment of these institutions' patterns and practices, and ethnographic investigations of the local impacts of implemented polices.

While much of the literature on socialist transition has emphasized a more urban-biased analysis around industrial transformation, the oft-overlooked aspect in transitional economies of agrarian change and the environment provides unique insights. Approaching agrarian change through an analysis of daily practices requires detailed and ethnographic accounts of people's changing perceptions and decision-making processes. To assess such subtle alterations

in decision-making, recent research focuses on the issue of land use, particularly though not exclusively in agriculture. In rural China, for example, the key issue is how to identify the ways in which the constellation of forces affecting land use often move rural producers towards less sustainable practices. The long-term environmental impacts of these changing land use practices – from declining crop rotation to overuse of fertilizers to lack of maintenance of productive infrastructure – can be termed 'mining communal capital'. This rather unorthodox position asserts that decollectivization was paradoxically achieving increased production through the creation of conditions that would undermine long-term rural productivity (Muldavin 1997).

Yet this compelling dialectic can only partially explain a fundamental weakness to this transition process – the decline in the legitimacy of reform as that reform proceeds. The essentially *political* character of transition requires identifying aspects of agrarian change outside of land use in the social sphere. To this end, much new work identifies the basis of resistance to reform and transition (Unger and Barme, 1991; Chan et al., 1992; Solinger, 1993; Chan, 2001; Bernstein et al., 2003). This resistance is highly differentiated in its expression – from indirect acts of daily resistance to open and organized rebellion and struggle. Such power struggles in China have at their root the changing vulnerabilities of those actually living this particular transition. Declines in social welfare and access to entitlements, combined with rapid socioeconomic and regional differentiation, have brought rising rural tensions and declining state legitimacy. Added to the long-term undermining of land productivity, as earlier posited, and the state finds itself at a difficult moment in the transition process.

As opposed to the rosier views of reform that dominated analyses in the 1980s and 1990s, I attempt here to explain the heterogeneity of China's transition experience as a necessary and structural component of its history and geography, contextualizing the environmental and social aspects (Muldavin, 1992, 1997). This overall analysis questions the prevailing market triumphalism of the 1990s, arguing instead for a more tempered view of China's transitional process that incorporates many of the long-term challenges that some analysts downplay or ignore. To better understand such challenges, regional work in new areas and at different scales is needed, creating the basis for a new line of argument concerning 'vulnerability analysis' – a fertile theoretical arena within political ecology and development studies (Muldavin, 2000a; Wisner et al., 2004) that may find a ready audience among political geographers.

In terms of environmental policy in countries undergoing socialist transition, there are a number of crucial, under-researched and ill-understood aspects in the environmental policy process that can be fruitful focal points for future policy-relevant research on transitional economies. In addition to an analysis of environmental policy interfaces (between international actors, such as multilateral and bilateral agencies and national governments, and between the latter and local institutions and, more broadly, civil society) as discussed above, assessing policy impacts through an analysis that begins with policy texts and moves to impacts on the ground is key. And further, analyzing the gaps between policy rhetoric and reality, and bottom-up influences on policy and implementation, is needed to broaden the scope of research from conventional concerns of formal processes of the state, to civil society, social movements, and local politics. And finally, assessing the geopolitical contexts of environmental policy will allow us to address issues of the militarization of the environment and the political control of people and resources in the name of conservation and environmental protection (see Blaikie and Muldavin, 2004a, 2004b, 2006).

CONCLUSION: THE NEW POLITICS OF CHINA'S TRANSITION

In China the authoritarian state claims the mantle of workers' rights promotion, and asserts that state unions, laws, and regulations will protect workers. The reality more closely approaches hypercapitalist labor relations in new factories and special economic zones, as well as in the far-flung suburban subcontractors and rural township and village enterprises in the hinterlands. The resulting worker uprisings, resistance, and calls for independent labor organizing and representation are repeatedly contained or crushed by state action, local and national. Paradoxically, the party state's rhetoric as a communist organ, while often appearing capitalist in action, undermines independent political action to some degree. On the other hand, state delegitimation is leading to ever-larger numbers of workers and peasants participating in uprisings and actions (direct challenges and resistance), as well as refusals to participate in processes counter to their own interests, and even acts of sabotage (indirect challenges and everyday forms of resistance). Thus the state finds itself now in a complex 'firefighting' position as hundreds of demonstrations against perceived injustices – social, economic, political, and environmental – erupt daily as small brush fires around the country challenging the political status quo. This is stretching to the breaking point the state's ability to efficiently organize and effectively respond with existing institutional structures and assets.

Here then lies a key point for active research, analysis, and advocacy on the part of political geographers. The clear ties of the social and environmental injustice and 'violence' to political decisions and subsequent policies provides opportunities to re-theorize the changing nature of post-socialist state/society relations around pressing current issues. Furthermore, the specific yet complex spatial patterns of challenges to the state create a mosaic of political geographies that at once reflect localized historical realities, while pointing to emergent patterns that reveal tenuous lines of cooperation across regions and at multiple scales. The potential political crisis this poses for the state is reflected in its heightened rhetorical campaign denouncing anything but passive, generally legalistic complaints, and attempting to isolate emergent leadership and destroy it before these brush fires join into a true conflagration. China's near 200 million migrant peasant workers, second-class undocumented 'citizens' in the urban growth cores, are both central to China's dynamism while challenging its very continuation through increasingly vocal demands for greater rights – including entitlements, occupational protection, and escape from the class-based environmental inequality of China's transition process. Thus the state spasmodically cracks down on this politically underrepresented group, using them as a scapegoat for larger social ills in a haunting parallel to the position of undocumented migrants in the US and Europe.

As this description augurs, the socioenvironmental impacts of socialist transition in China provide potential insights into the issues raised at the beginning of this chapter; namely, the rapidly changing political landscape of state/society/nature relations as China decollectivizes, privatizes, deregulates, and commodifies nature, natural resources, and land-based assets of all kinds. The speed, scale, and scope of this process in China overwhelms most analyses, and challenges us to find new analytical windows to shed light on this shifting terrain, and provide signposts of possible future trends. For critical political ecologists and political geographers, such a challenge is tied to the clear connections between environmental destruction and social decline, both in countries undergoing transition and in the rest of the world, and the pressing need for political alternatives supported by a rigorous research agenda. Critical political ecology – multi-scaled, focused on the nature/society relationship, and inclusive of a wide range of theoretical frameworks and methodological tools – offers potential insights built on fundamental concerns for environmental and social justice. Political geography can provide much-needed rigor to political ecologists' conceptualization of state/society relations, as well as the politics of non-state actors, and their spatial and scalar expressions, informing and being informed by critical political ecology's primary modalities of inquiry.

Specifically, at a global and regional scale, political geographers' insights on geopolitics can help strengthen this under-theorized aspect of political ecology (Nevins, 2005). At a national and subnational scale, political geographers' analysis of citizenship, political rights, political participation, and the role of civil society in the shifting state/societal relationship can foster a clearer institutional understanding of these dynamic actors and the power relations within which they are embedded (Varsanyi, 2006). And finally, at the local, even household and individual level, political geographers can provide insights on the particular ways politics are infused with the questions of gender, race, and class, and how these and other cross-cutting thematics influence political moments and movements and the evolving relations to 'nature' and the environment.

In summary, in former state socialist societies now undergoing various forms of 'transition', the challenge to political ecologists, as well as political geographers, is how to further develop this evolving multi-scaled and interdisciplinary approach to understanding the transition from socialism to capitalism, and in particular its environmental aspects. The hybrid and often derivative forms of political economy that have emerged, further challenge the dominant and relatively simple analyses prevalent in mainstream economics and political science. Contextualized within the mosaic of forces generally described as globalization, political ecologists and political geographers can provide particular insights into how to conceptualize political processes increasingly beyond the nation-state, and yet still rigorously tied to the spatial realities and reconfigurations of political, economic, and environmental boundaries.

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NOTES

1 For classic texts to inform further inquiry along the lines of this proposed parallel, see, among others, Goodman and Redclift (1982) on the transition of peasants to workers; the Brenner Debate (1985) for the historical transition debate; and Little (1989) for application of the classical peasant debates to the Chinese context (Scott [1976] and Popkin's [1979] moral versus rational peasant debate, the Lenin and Chayanov debate, and so forth).

2 In Cuba, a very different process occurred as the withdrawal of subsidized oil and oil products by the former USSR in 1989 forced Cuba towards an ecologically improved agriculture based on organic principles, expansive urban gardens, and a restructuring of the rural economy (Deere, 1998).

3 The Vietnamese state's courting of 'foreign direct investment' is part of a competitive process with China that may make Vietnam the new low-cost toxic industrial platform of choice for 'transnational corporations' with operations in Asia (Perlez, 2006).

4 Pepper's (1984:39) original division of technocentric approaches to the environment between Cornucopians and Environmental Managers, I would argue, has now converged in a new form of Cornucopian belief integrated into the environmental management strategy approach – what Blaikie calls the New Ecological Modernization as opposed to the old variety associated with colonialism (Blaikie, 1999: 137).

5 The nation-state-based vision of the classical and ecological modernization approaches misses fundamental dynamics both above and below this scale of assessment, for example the globalized production systems that do not rely on any single national agenda or context so as to spread risk and increase flexibility and power in determining the form of production whatever its overall environmental impact. The ecological modernization approach, in particular, misses the fact that China's growth success is partially built on the state's willingness to accept a role for China as a subcontractor in the global economy for some of the world's dirtiest industries, with subsequent environmental destruction, and that in any turn to cleaner technologies, some of this competitive advantage is lost.

6 In the Chinese case the 'third wave' proponents are experimenting with formalizing a system of shaming corporations for poor environmental performance as a means to improve environmental outcomes. This mimics to some degree the application of ecological modernization theory in Japan (Barrett, 2005).

7 For much more detailed accounts of the summaries provided below, including results based on long-term village-level research, see Muldavin (1992, 1997, 2000a).

8 For a detailed discussion of the evolving intellectual currents within the party and intelligentsia, see Yan Sun's early book, *The Chinese Reassessment of Socialism: 1976–1992* (1995), and for an assessment of China's New Left, see Chaohua Wang's diverse collection entitled *One China, Many Paths* (2005), and also Wang Hui's cogent analysis in a set of essays entitled *China's New Order* (2003).

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