



Introduction: From the "New Ecology" to the New Ecologies

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American Anthropologist, New Series, Vol. 101, No. 1. (Mar., 1999), pp. 5-18.

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Introduction: From the “New Ecology” to the New Ecologies

An earlier ecological anthropology defined its project within the compass of the idealism v. materialism debate. Culture was an adaptive tool, instrumental rather than formal; it was intelligible with respect to its material effects, not—as the idealists would maintain—in terms of itself, as an autonomous, self-determining order of reality. This argument was mounted with respect to bounded, stable, self-regulating, local, or at best regional entities and the environment they inhabited. All of the premises of the earlier ecology have since been challenged, and today’s ecologies—symbolic, historical, and political—radically depart from the reductions and elisions of the ecological anthropology of the past. In particular, the new ecologies override the dichotomies that informed and enlivened the debates of the past—nature/culture, idealism/materialism—and they are informed by the literature on transnationalist flows and local-global articulations. This introduction positions Rappaport’s work within this historical shift from a polarized field of mutually exclusive frameworks to today’s synthetic new ecologies and their antireductive materialism. Rappaport’s work, produced over three decades, serves, in and through its own transformations, as a bridge between the reductive materialism of the past and a new-materialist ecology. [*Rappaport, ecological anthropology, materialism v. idealism, the new materialism*]

So much has been happening in ecology recently that we, students and colleagues of Roy A. Rappaport, would be remiss in failing to explore where ecology has been and where it is going in tribute to him. This contemporary issues forum provides a series of soundings in the new ecologies prepared by those who collaborated with or learned from Rappaport and who wish to use the occasion of his passing to explore the relationship of Rappaport’s work to today’s reenergized ecological anthropology and its emerging terrain.

Here I initiate this task by casting a glance backward to the 1960s, when *Pigs for the Ancestors* was written, first as a dissertation and then as a major monograph, and to the decade following the book’s publication, when materialists and idealists alike stridently debated the merits and deficiencies of the book. Rappaport would respond to his critics in two key texts: the collection of essays called *Ecology, Meaning, and Religion* published in 1979 and the “Epilogue” to the “new, enlarged” edition of *Pigs for the Ancestors* published in 1984. Through these texts, Rappaport distanced himself from the functionalism and reductive materialism of *Pigs*, made modest forays into an emerging political ecology, and developed an exemplary hypothesis about the complexity of the human condition. This history, a history that establishes Rappaport’s work as a precursor to today’s emerging ecologies, is reviewed in the first section of this introduction. In the second section, I summarize some of the key foci of the new ecologies

(symbolic, historical, and political), indicating their connection to but also deviation from anterior frameworks. The third section announces what I call the new materialism, a materialism that overrides the dichotomies and debates of the past—idealism v. materialism, for example, and nature v. culture—and that undergirds the various new ecologies. In the final section, I introduce the particular articles of this special issue and their contributions to the new directions of ecological anthropology. Taken together they demonstrate the continuing value of Rappaport’s writings as an open and provocative oeuvre.

The “New Ecology”

Pigs for the Ancestors and Its Critics

Originally published in 1968, *Pigs for the Ancestors* has garnered one of the largest anthropological audiences ever, larger, surely, than *Argonauts*, *Coral Gardens*, *Witchcraft, Oracles, and Magic*, and *The Nuer*, to name a few indispensable classics. The book, as well as the summary article published the year before, “Ritual Regulations of Environmental Relations among a New Guinea People” (1967), advanced a new ecology. Against Stewardian “cultural ecology,” which took cultures as the units of analysis, the “new ecology”¹ would focus on populations “in the ecological sense, that is, as one of the components of a system of trophic exchanges taking place within a bounded area” (Rappaport 1967:18). These exchanges occurred within an

“ecosystem,” defined as “the total of ecological populations and nonliving substances bound together in material exchanges in a demarcated portion of the biosphere” (p. 18).

As in any system-centered paradigm, so, too, in the new ecology: the part is subject to the regulatory force of the whole. Rather like a thermostat, an ecosystem regulates itself in the face of perturbations, homeostatically maintaining “the values of one or more variables within a range or ranges that permit the continued existence of the system” (Rappaport 1968:4) through “information-carrying feedback loops” (Smith 1984:53; see Moran 1990). It does so through the “negative feedback” of special mechanisms, mechanisms that alter “the values of some variables in response to changes in the values of others” (Rappaport 1968:4).

In the Maring case, ritual—in particular, the *kaiko*, a pig sacrifice to ancestral guardians in times of war—was the regulator. Maring warfare was held in abeyance as long as the debts to supernatural and ordinary allies were outstanding, warfare being resumed only once the aggressors had acquitted themselves of these debts—through the massive slaughter of pigs in the *kaiko*, among other means. In preparation for the *kaiko*, pigs were accumulated and fattened. As the pig herds mounted, the effort required to tend them also mounted until the demands upon women and their labor, in particular, reached the limits of tolerance. At the behest of the women, the *kaiko* or massive slaughter of pigs was then staged. Restoring the ratio of humans to pigs to a tolerable level, the *kaiko* helped maintain “biotic communities existing within their territories” (1967:17). It also limited the frequency of fighting and distributed “pig surpluses in the form of pork throughout a large regional population while helping to assure the local population of a supply of pork” (p. 18) when the need for quality protein was high. The *kaiko* was thus a multipurpose institution, monitoring the “[r]elationships between people, pigs, and gardens,” the “slaughter, distribution, and consumption of pigs,” the “frequency of warfare,” and so on (Rappaport 1968:3–4).

Many critics faulted *Pigs* for its functionalism, impugning alleged “cybernetic entities” (Smith 1984:53, emphasis removed) as mere articles of faith. Two of Rappaport’s students, Susan Lees and Daniel Bates, would support a more assumption-free ecology, one that was less vulnerable to attack on empirical and theoretical grounds (1990:248–250). “It is possible to describe human-environment relationships systematically without assuming the self-regulating properties inherent in the ecosystem concept” (p. 249). Meanwhile, Andrew P. Vayda, Rappaport’s doctoral supervisor and originally himself a proponent of the new ecology (Vayda and Rappaport 1968), would ultimately reject the system-centered nature of the approach, arguing instead for a focus on events and the individuals behind them—rational decision makers strategically pursuing

their own interests. Adaptation, to the extent that it occurs, happens at the level of the individual or the household rather than at the level of a chimerical system and in light of particular rather than general, system-level stakes (see Vayda 1996; Vayda and McKay 1975).

Rappaport defended populations rather than cultures as units of analysis in the name of a purer materialism:

cultures and ecosystems are not directly commensurable. An ecosystem is a system of matter and energy transactions among unlike populations or organisms and between them and the nonliving substances by which they are surrounded. “Culture” is the label for the category of phenomena distinguished from others by its contingency upon symbols. [1990:52, emphasis removed]

In the new ecology, there would be no “eclectic conjunction of incommensurable and incongruent terms” (1984:382). Apples would not be mixed with pears but the human species would be treated as “a species among species” (p. 384) and in terms of naturally envired populations (p. 384). An ecosystem is “a system of matter and energy transactions among unlike populations or organisms and between them and the nonliving substances by which they are surrounded” (p. 381); and the terms “*ecosystem* and *human population*, taken in the ecological sense are fully commensurable and congruent” (1990:55).

What appeared purer to the new ecologists seemed dangerously reductive to other anthropologists. The reductionism of the new ecology was clear enough in its rejection of cultures as units of analysis and in its embrace of populations instead, as well as in its instrumental view of culture. Culture was the tool that allowed human populations to adapt to the environment—explicable, then, in terms of its material functions or effects. Robert Murphy, an early critic of this brand of ecology—the “new ecology,” as he called it (1970, see note 1)—saw in its seeming embrace of environmental determinism a problematic departure from the environmental “possibilism” of the cultural ecology of Julian Steward and others (see also Anderson 1973; Sahlins 1969). The ecosystemic approach was “much influenced by biology,” Murphy wrote (1970:164; see Lilienfeld 1978; Moran 1990), and tended “to fall into the language and method of the biologist” (Murphy 1970:165), explaining culture in naturalistic terms—specifically with respect to its adaptive functions. However, “the characteristics of a culture are not easily reducible to survival values” (p. 166). Instead of viewing human beings “*in nature*,” they should be studied “*apart from nature and opposed to it*,” Murphy contended (p. 168, emphasis in the original). “This does not mean that the human sphere and the natural order are unrelated, but only implies that the social order is independent despite its ties with the environment” (p. 168).

As the new ecology was trumpeting a purer materialism, other frameworks were accounting for culture in terms of

itself, with respect to patterns and meanings. The argument that culture is intelligible through its own principles rather than through biological functions was announced in the great structuralist treatises of the 1960s, when English translations of Lévi-Strauss's *Totemism*, *The Savage Mind*, and *Elementary Structures of Kinship* became available. Totemic food taboos are "good to think," for example—legislated through the intellectual work of classifying and ordering within an indigenous "science of the concrete" (Lévi-Strauss 1966; see Douglas 1966 for a famous exemplification of the argument)—and they are intelligible as such rather than in terms of any biological or ecosystemic dividend.

Influenced by structuralism's distinction between nature and culture, rendered in quasi-mythic narratives of a "passage" from the one to the other, Marshall Sahlins's *Culture and Practical Reason* provided a sustained assault on cultural materialism and all extant ecologies, cultural or new. The book asked: Should "the cultural order . . . be conceived as the codification of man's actual purposeful and pragmatic action" or should "the world . . . be understood as mediated by the cultural design, which gives order at once to practical experience, customary practice, and the relationship between the two" (1976:55)? From the book's very first page, Sahlins's answer is clear: "the distinctive quality of man" is

not that he must live in a material world, circumstance he shares with all organisms, but that he does so according to a meaningful scheme of his own devising, in which capacity mankind is unique. It therefore takes as the decisive quality of culture . . . not that this culture must conform to material constraints but that it does so according to a definite symbolic scheme which is never the only possible one. [p. viii]

Against the instrumentalist view that "human cultures are formulated out of practical activity and behind that utilitarian interest" (p. vii), Sahlins argued (humanistically as much as out of any structuralist penchant) that cultures are self-determining human products explicable in terms of their own principles and logics (see also Sahlins 1969).

Rappaport Responds

The period of the 1960s and 1970s saw a schism between idealism and materialism (see discussion in Ortner 1994), a schism that Sahlins's rhetorical question reflected. Rappaport would ultimately point a way beyond the idealist/materialist impasse by retreating from ecofunctionalism and by embracing an exemplary hypothesis about the human condition and its complexity. Again and again (and most recently in his last monograph *Religion and Ritual in the Making of Humanity* [1999]) Rappaport would rehearse the argument that the human species is "a species that lives in terms of meanings in a physical world devoid of intrinsic meaning but subject to causal law" (back cover

of the paperback edition of *Ecology, Meaning, and Religion*). But if human life is poised amid multiple, irreducible orders of determination, natural and cultural, *there can be no environmental determinism*. Rather than offering causal explanations, ecology provides "a perspective from which problems [can] be defined" (Rappaport 1984:334). "Whereas a 'purely explanatory' use of the ecological formulation might attempt to account for cultural forms in terms of their adaptiveness the use of the formulation *as a problematic* proposes that the adaptiveness of those forms is always open to question" (p. 335, emphasis in the original). Furthermore, if culture's instrumentality (or "practical reason") is no longer guaranteed, however "good to think" in the structuralist sense particular aspects of culture might be, not all ideology—representations of gender, for example (Buchbinder and Rappaport 1976)—will prove functional or adaptive.

This argument strips ecology of functionalist premises and directs analysis toward an empirical study of the interaction of culture and nature and its outcomes, problematic or not.² The problem that Rappaport would focus upon was capitalism and its malaises. According to Rappaport, maladaptation occurs when special-purpose subsystems take on general-purpose functions, promoting their own interests but at the expense of a more general welfare. Is it really true that what is good for General Motors is good for the country? Rappaport rhetorically asked (1978:61–62). A tendency toward "usurpation," an appropriation of general functions by special-purpose subunits such as corporations, is inherent in capitalism, a system in which "It . . . becomes increasingly possible for ever-more narrowly defined interests to become regnant in larger socioeconomic systems" (1993:300).

As of the 1979 anthology *Ecology, Meaning, and Religion* and the 1984 "Epilogue" to the "new, enlarged" edition of *Pigs for the Ancestors*, then, Rappaport had concluded that human life is interstitial, poised between nature and culture. To be human is to live the relationship between nature and culture and to inhabit a world predicated on that relationship. Rappaport's redefinition of ecology, no longer as a functionalism premising the adaptive utility of culture but as a heuristic device for discovering dysfunctional aspects of human-nature relations, together with his insistence on the complexity of the human condition, at once significant *and* natural, reoriented ecology toward an investigation of human-nature relations in nonreductive and nondeterministic terms, a reorientation Rappaport himself pursued in his critique of capitalism and more generally in an "engaged," applied anthropology (1993, 1994a, 1994b). The stage was set for an ecology or ecologies that would avoid the either/or of idealism versus materialism and that would venture onto the terrain of what has come to be known as political ecology.

The New Ecologies

The new ecologies have complex, hybrid genealogies. They emerge in the context of older ecologies, but they also distance themselves from these earlier ecologies and ally with other analytical traditions (for example, political economy, symbolic anthropology, and historical anthropology). In what follows, I suggest the complexity of the pedigrees as well as the relationship between the new and the old ecologies as I continue to inquire into what is usable, what problematic, in the Rappaportian legacy in an effort to determine what is genuinely new in the directions and issues of today. The three ecologies I discuss, all too briefly, are symbolic ecology (ethnoecology, as Kottak refers to it [this issue]), historical ecology, and political ecology.

Symbolic Ecology

Rappaport is well known for his distinction between “cognized” and “operational” models, a distinction that opposes “the model of the environment conceived by the people who act in it” (1968:238) to an objective, scientific, quantifiable depiction of “the physical world” (p. 237). The operational model, at least in theory, extraculturally (“objectively”) reflects an equally extracultural (“objective”) reality. The cognized model constitutes cultural understandings of that extracultural reality. In its original guise, the distinction referred to the gulf between “emic” views—the “local knowledge” of Geertz’s writings (1983) or the ethnosemantic taxonomies that Rappaport actually cites (1984:337)—possibly a flawed mimesis, on the one hand, and “etic” (objective, scientific, true) representations of an objective reality on the other hand.

While the two models may not be “isomorphic” (p. 337), Rappaport’s key question pertained not to the truth value of emic models—the extent to which [cognized models] are identical with what the analyst takes to be reality” (1979b:98)—but to their utility, whether “they direct behavior in ways that are appropriate to the biological well-being of the actors and of the ecosystems in which they participate” (p. 98; see also Rappaport 1968:238–239). Is a particular cognized model really “good to think” (Lévi-Strauss 1963), or does it promote behavior that is maladaptive or destructive (see, for example, Buchbinder and Rappaport 1976)? Since operational models were true, the distinction between operational and cognized models was ultimately a distinction between nature and culture, fact and fiction.

In focusing narrowly on utility, Rappaport continued to explore adaptive processes (present or absent) in an increasingly policy-relevant anthropology (1993, 1994a, 1994b). But, by the same token, he failed to lay the foundations for a full-fledged poetics of nature focused upon the social construction of nature. Through innumerable studies

of magic, fertility rituals, totemism, cosmology, mythology, classification schemes, and the like, symbolic ecology, that study of a culturally variable poetics of nature, is already, albeit implicitly, powerfully present. It inheres in Lévi-Strauss’s “science of mythology” as well as in the “symbolic anthropology” of the 1960s and 1970s, in the ethnosemantics of the 1950s and 1960s, and in the original work on “primitive” classification by Durkheim and Mauss (1963).

The question of how nature is variably socially constructed was explicitly posed in the 1980 anthology *Nature, Culture and Gender*, edited by Carol MacCormack and Marilyn Strathern and opening with an essay by MacCormack, “Nature, Culture and Gender: A Critique,” on the cultural construction of nature. The anthology was provoked by Sherry Ortner’s “Is Female to Male as Nature Is to Culture?” which read the triangle of the MacCormack-Strathern anthology in ways that MacCormack and Strathern considered ethnocentric (cf. Merchant 1979). A neologism, symbolic ecology is explicitly in evidence in the work of Lévi-Strauss’s successor at the *École des Hautes Études*, Philippe Descola (1992, 1994, 1996). In fact, something like symbolic ecology has taken root in a range of disciplines, from the study of landscape and place in art history and cultural geography to ecocriticism in literary studies to the study of the social and historical construction of nature in history.

Historical Ecology

At midcentury, an underlying opposition between nature and culture informed a wide range of anthropological theorizing. Lévi-Strauss’s “grand narratives,” whether they pertained to totemism or to “elementary structures of kinship,” featured a “passage” from the merely sensible (in structural linguistic terminology, the phonetic) to the also intelligible (the phonemic), from the unregulated to the rule-governed, and from nature to culture (1963, 1966, 1969).

The very language of an older ecological anthropology premised a dichotomous relationship between culture and nature. In it *adaptation* signified cultural accommodations to an extracultural, a priori “environment.” The paradigm positivistically envisioned nature as “a thing, the realm of extra human objects and processes existing outside society . . . pristine, God-given, autonomous; . . . the raw material from which society is built” (Smith 1984:2). Culture was the figure within nature’s ground. Tim Ingold expresses the paradigm well:

We tend to envisage the environment as a vast container filled with objects . . . , like a room or stage-set cluttered with furniture and decorations. From this analogy comes the classic ecological concept of the niche, a little corner of the world an organism occupies, and to which it has fitted itself through a process of adaptation. If a vase be removed from an alcove, a

niche remains for a small object that might appropriately fill the vacant space; by analogy it is implied that the ecological niche of an organism is independently specified by the essential properties of the environment, which impose the conditions of functioning to which any occupant must conform. Thus, the very notion of adaptation entails that niches exist in the environment prior to the organisms that fill them. The environment sets the problem, in the form of a challenge; the organism embodies the solution, in the form of its adaptive response. [Ingold 1992:41]

What this paradigm suppresses is the way in which the environment is historically and culturally produced through human-nature interactions. Marx and Engels were among the first to argue that "a 'nature [which] preceded human history . . . no longer exists anywhere'" (quoted in Smith and O'Keefe 1996:286), and Marx wrote that "'It is as clear as noon-day that man, by his industry, changes the forms of the materials furnished to him by Nature, in such a way as to make them useful to him'" (quoted in Lansing 1991:11). To the extent that nature presents itself to humans as so much raw material to fashion, space is no longer a container, field, or ground that holds, engulfs, or supports other things but is itself a contingent product, a sediment of human practice, a construction in the material and not merely semantic sense of that word—in short, an artifact (see Eckersley 1992; Escobar 1999; Harvey 1996; Hvalkof and Escobar 1998; Ingold 1992; Lansing 1991; Lansing and Kremer 1993; Smith 1984; Soper 1995, 1996). As "the embodiment of past activity" (Ingold 1992:50), the environment is itself made; it is the historical product of various social relations (of production and reproduction, kinship, exchange, etc.) (Ortner 1994:379; see Fricke 1997; Kelly 1968; Kertzer and Fricke 1997; Kottak 1980; Lansing and Kremer 1993). The relationship between humans and the environment is actually dialectical, for, in the course of reshaping nature, society gradually reshapes itself. Thus, the development of resources invariably has a double impact: upon interethnic relations, prevailing social arrangements, and imagined futures (see Biersack, Ernst, and Gezon, this issue), as well as upon the environment. Instead of the nature-culture dualism, what is required, according to this argument, is "an understanding that proceeds from a notion of the mutualism of person and environment" (Ingold 1992:40) and of the reciprocity between nature and culture (see Anderson 1973:184–193; Harvey 1996; Kottak 1980; Lansing and Kremer 1993; Sahlins 1964).

Much of the descriptive material of *Pigs for the Ancestors* actually concerns this "production of space" (Lefebvre 1991; Smith 1984). When Rappaport tells us that Tsembaga Maring territory is divided into three subterritories, districts that correspond, albeit roughly, to patterns of social segmentation (1968:17–28), he is describing not the "niche" he thinks he is describing but a space that has been "built" through social relations and the activities thereof—

in short, a socially and culturally mediated nature. Rappaport's description tells us how "Social and spatial structures are dialectically intertwined in social life, not just mapped one on the other as categorical projections" (Soja 1996:631). Furthermore, the capacity of a delimited territory to support its various populations, human and nonhuman, its "carrying capacity," is no mere dictum of nature; it measures the demographic capability of a particular district given social organizational stipulations of that district (as the "estate" of a clan or the territory of a clan cluster), socially shaped reproductive patterns, and cultural understandings (see Fricke 1997; Kelly 1968; Kertzer and Fricke 1997).

A resurgent human or cultural geography devalues time in favor of space (see, for example, Agnew and Duncan 1989). Yet we do not need an Einstein to tell us that there is never the one without the other. The old millennium closes with a "new Europe," a "former Yugoslavia," and a world filled with incipient and dying nationalities. Space is *relative*—socially and historically produced. Historical ecology—that branch of ecology that focuses on the production of space (or "nature") and the activities, technologies, informing ideas and values, and social relations of that production—intrinsically addresses the spatiotemporal and its relation to the social (Giddens 1983). It also considers the way in which ideas and thought become imprinted in the landscape through human activity. As Carole Crumley has observed, historical ecology "traces the ongoing dialectical relations between human acts and acts of nature, made manifest in the landscape. Practices are maintained or modified, decisions are made, and ideas are given shape; a landscape retains the physical evidence of these mental activities" (1994:9; see also Kirch and Hunt 1997). In this, historical ecology has an obvious affinity to symbolic ecology (see Biersack, this issue).

Historical ecology replaces environmental determinism, first, with a notion of space as itself contingent, and, second, with a dialectical understanding of the relationship between human populations and the environment (see Crumley 1994; Kirch and Hunt 1997; Lansing 1991; Lansing and Kremer 1993; Soja 1996; Soper 1995). On both counts it differs from what the famous French historian Fernand Braudel (1980) called *geohistory*, an environmentally determined positivistic history, for it roots the so-called environment in human agency and its interactions with nature. By the same token, historical ecology is inherently *anthropocentric*, not *ecocentric*, as *Pigs* was.³ In rooting the so-called environment in a homo-faber humanity, historical ecology is also, to a degree, *technocentric*. Although idealism rendered instrumental action immaterial, historical ecology rehabilitates the focus on "practical reason" (Sahlins 1976) of an older materialism, but without the reductionism of that materialism.

Political Ecology

At the time of Rappaport's fieldwork (from October 1962 to December 1963), the Maring had experienced about eight years of contact and had not yet been missionized (1967:18), linkages to external markets, administrations, and cultural orders were minimal, and political economy approaches in anthropology were merely fledgling. Consequently *Pigs* would ignore world history, global flows, and core/periphery asymmetries. Moreover, the debates of the 1970s that the book would inspire largely overlooked the book's political inadequacies (but see Friedman 1974).

Few places in the world today have not been significantly affected by global flows, colonial projects, and the penetration of capitalism (Wolf 1982), and ignoring how contemporary locales or regions are impacted by colonialism and market penetration, not to mention nation-states themselves, all but discredits any analysis. One of the diacritical features of today's ecologies, according to Bates and Lees, is the rejection of the kind of culture-as-island approach that *Pigs* and other ethnographies of its era employed: "In contemporary human ecology there is never an assumption of timelessness or total isolation. While historical change and external influence might once have been regarded as annoying distractions or distortions of indigenous systems, they are now the focus of attention" (1996:2).

Originally designed to examine resource access and utilization within an overarching world-system framework (Wolf 1972 [see Peet and Watts 1994:238, 1996:4]), political ecology shares certain concerns with political economy (Bryant 1992; Greenberg and Park 1994; Peet and Watts 1994, 1996). Like political economy, political ecology explores "the role of power relations in determining human uses of the environment" (Bates and Lees 1996:9) and "the relations between human society, viewed in its bio-cultural-political complexity, and a significantly humanized nature" (Greenberg and Park 1994:1). As grand theory and master narrative, political ecology concentrates on the history of capitalism and its critique and in particular on the unevenness of development that that history has produced on a global scale (Smith 1984), for capitalism commands not only cheap labor but also cheap natural resources on the margins of its market-driven empire. Drawing on political economy, political ecology insists on the inadequacy of the older ecologies, which were oblivious to local-global articulations as well as to linkages between the village and the nation-state, specifically with respect to their units of analysis (see Brosius, Ernst, Gezon, and Kottak, this issue).

For all its affinities to political economy, political ecology's interests merely overlap with those of political economy, and the differences are as important as the similarities. As a critique of capitalism, traditional political economy was oblivious to the environmental ravages caused by

technology; yet, also in part as a critique of capitalism, political ecology focuses upon these very ravages. In some of the writings of the Frankfurt School, human-nature relations are themselves envisioned as power relations, relations that (in the language of key texts in the political ecology literature [Eckersley 1992: chs. 4–5; Harvey 1996: ch. 6; Horkheimer and Adorno 1972; Jay 1973: ch. 6]) result in a pernicious "domination of nature." The perspective displaces class conflict with "the larger conflict between men and nature" (Smith 1984:29), without as well as within capitalism and also in all those interstitial "contact zones" (Pratt 1992) that capitalism and colonialism create. The shift from class relations and their asymmetries to human-nature relations and their asymmetries establishes a political ecology of truly anthropological proportions—one that encompasses the ecological malfeasances of capitalism (Rappaport 1993, 1994a, 1994b) but also any ecoviolence that lies temporally or spatially beyond capitalism's orbit, in effect widening the temporal and spatial scope of political ecology beyond that of political economy.

As importantly, political ecology focuses on a range of differences—differences of class but also of gender, race, and ethnicity—and the politics of difference they spawn. Nature itself is "tamed" or ravaged as "other." Much of today's political ecology is more properly understood as a merger of political economy with cultural studies, itself an outgrowth of post-Marxist frameworks founded on a critique of traditional Marxism's inadequacy as *cultural* critique and as a manifesto for *cultural* politics per se (Hall 1980).⁴ Colonialism—founded upon myths of "race," "progress," and "civilization"—is more self-evidently "cultural" than global capitalism (see Comaroff and Comaroff 1991, 1997; Plumwood 1993; Said 1993; Thomas 1994). At the same time colonialism's historical relationship to capitalism is undeniable. Like gender, "race" has become as basic a trope in the political ecology literature as class is in traditional Marxist analysis (Rocheleau et al. 1996). Political ecology traces "the links between ecology and imperialism" (Peet and Watts 1994:248) of "environmental racism"—the inequalities in environmental risks and degradations occasioned by imperialism and colonialism (Kottak, this issue)—and the movements to promote "environmental rights" (Johnston 1995) and "environmental justice" (Harvey 1996) that they inspire.

Allied to, but also distanced from, political economy, political ecology provides an arena in which the strengths and limitations of traditional political economy can be debated in light of present concerns with local-global, national-global, and national-regional articulations and the complex causation (including cultural causation [Sahlins 1994]) unleashed by these, as well as power asymmetries that are discursively created—asymmetries of race and gender, for example. How much "structural efficacy" or "structural power" (Wolf 1999 and this issue) does the

"world system" have? How much countervailing efficacy can local entities and publics acquire through strategic practices? How unified is capitalism itself, or is it refracted and pluralized through various hybridizations and syncretisms?

As a new, yet vigorous, field, political ecology has no settled paradigm or paradigms, and whatever debates it will spawn are presently being worked out. Already detectable, however, is the same tension between centered and decentered models—between paradigms that emphasize totalities ("ecosystem," "capitalism," "world system," "state") and a kind of systemic or structural determinacy, on the one hand, and an anti- or postparadigmatic insistence on the destabilizing and decentering power of the oppositional, the local, and the particular, on the other. (This distinction has recently been announced as a distinction between structural and poststructural approaches [Escobar 1996; Peet and Watts 1996].) Attention might focus, for example, upon practices and discourses, particularly those involving resistance and social movements (Peet and Watts 1996) as well as local, regional, and even national particularities, as they stand in relation to global linkages and flows or in relation to one another. To the extent that traditional Marxism appears inadequate for ecotheory, the bond between political ecology and political economy will become attenuated, and political ecology will develop instead "as a specialized branch of critical social theory" (Peet and Watts 1996:36) and cultural studies.

Ecology and the New Materialism

As has recently been argued, there is in the very terms of the debate between idealists and materialists either a dichotomization of nature and culture (see Descola and Pálsson 1996)—etic versus emic, for example—or a reduction of the one to the other. For the idealist, culture is *sui generis*, explicable in its own terms—autonomous and self-determining. Materialists, on the other hand, at least the "vulgar" ones (Friedman 1974), explain culture in terms of nature, rendering culture epiphenomenal.

Today there is a growing insistence on the need to resist both kinds of reduction in the name of a new synthesis. Much of the impetus comes from those who wish to rehabilitate a focus on extratextual realities within a reformed semiotics, one that takes up the sign within a "social context" and links it to "the exo-semiotic realms of economic development and political conflict" (Gottdiener 1995:vii). Gottdiener is a sociologist, yet his "socio-semiotics," a critique of pure, idealist semiotics, has parallels in all of the social and human sciences. It is found in the writings of Edward Said and his explorations of the relationship between text (or the "world of the text" of hermeneutic approaches [Ricoeur 1980]) and the world (historical, political, and economic) (Said 1983). It is represented in a resurgent phenomenology focused on the body as a physi-

cal/existential cum semiotic reality (Csordas 1994) and in a broadly conceived "cultural studies" focused on cultural politics and political economy (Hall 1980). Synthetically attending to the textual and the semiotic, on the one hand, history, politics, economy, and biology, on the other, is what I mean by the term *the new materialism*. In all cases, "Culture is not simply understood as a system of signification, but as a sign system articulating with exo-semiotic processes" (Gottdiener 1995:30). And this is not only the crucial gesture but the defining feature of the new ecologies.

In its quest for a pure (population-centered) materialism, the "new ecology" precluded the study of *incommensurabilities*—biology and history (Escobar 1996, 1999; Hvalkof and Escobar 1998), meaning and natural law (Rappaport's post-*Pigs* corpus)—and their intersections. However, any attempt to explain behavior in terms of "objective circumstances" and "material needs" overlooks the fact that so-called objective circumstances and material needs are sociohistorical products. Rooted in the collective imagination and the projects it spawns, desire as much as need motivates human-nature relations, producing Dionysian, Apollonian, or spartan economies, as the case may be (see Sahlins 1972, explicitly a contribution to economic anthropology but equally a contribution to the new ecologies). Consequently, the new ecologies address a reality that is defined precisely in terms of *incommensurabilities* and their conjunctive real-world effects.

Over against the dualistic thinking of earlier ecologies, it has always been possible to configure nature/culture in dialectical or interactive terms (Kottak 1980; Lansing and Kremer 1993; Rappaport 1980), in ways that bring nature within the cultural realm without effacing nature's autonomy from the cultural realm. The reality that is generated through the conjuncture of nature and culture is anthropocentric, rooted in the activities and conceptualizations of human beings, a *life-world*, a term I use not merely in the phenomenological sense but in the stronger *material* sense, with respect to a world-out-there that has been appropriated, acted upon, crafted, transformed, a world generated in and through human-nature interactions. Now a world-in-here, this *lived and utilized* reality is signified by the mind but also consumed, commodified, given, fashioned, or otherwise processed and deployed. In this new usage, *life-world* refers to an indivisible material/symbolic/political/social/historical reality in which the nature-culture divide is bridged in the name of a new "monist" (Descola and Pálsson 1996) ecological anthropology, inherently an ecology of *incommensurabilities*, predicated on the fact that human life "lies betwixt and between" (Lévi-Strauss 1984)—as Rappaport himself would have it, neither nature nor culture but precisely both.

Pigs for the Ancestors arguably concerns such a life-world. In this particular case, any model of human-nature

relations that presupposes a dichotomous rather than dialectical relationship between nature and culture is necessarily circular. As Rappaport shows, Maring ecology is driven by culture—by supernatural doctrines concerning ancestral beings, their hunger for pork, and their requirement that descendants who have benefited by their support in war thank them through pig sacrifices. It is the pigs-for-the-ancestors logic of the kaiko that accounts for the very overproduction and resulting imbalances that the massive pig slaughter of the kaiko corrects. In requiring the escalation of pig production, the kaiko creates those very perturbations that its culmination, the sacrifice of pigs thus produced, resolves. The reality in which the kaiko intervenes is therefore already *internal*, a cultural product. The kaiko exists in and functions with respect to a reality that is generated through human-nature interactions, and this reality must be studied through the very ecology of incommensurabilities that the new ecology, in its pure materialism, rejected.

Already there is an incipient language to describe such a reality. Marx, for example, is attributed with coining the term *humanized nature* to signify an “environment” that is produced through human activity (Lansing 1991; Lansing and Kremer 1993). The distinction between “first” and “second nature,” originally Hegelian (Smith 1984:19), opposes what is made and historical and therefore “second” to the original, pristine nature (the garden to the wilderness, for example [Biersack 1996]). “The impress of this ‘first nature’ is not naively and independently given, . . . for its social impact always passes through a ‘second nature’ that arises from the organized and cumulative application of human labour and knowledge” (Soja 1996:626). Two other terms also signify a postnatural (Escobar 1999), spatiotemporal reality, at once material and semiotic: *landscape* and *place*. These terms are especially important for symbolic and historical ecologies. Landscapes and places are semio-scapes and semio-locales, suffused with meaning (Feld and Basso 1996; Hirsch 1995); they are made through acts of discursive-cum-material construction.

The ecology of “humanized” or “second” nature, of landscape and place, forswears functionalist assumptions and the problematics of adaptation to focus upon a spatiotemporal horizon generated homocentrically rather than ecocentrically through nature-culture interactions, the material exchanges thereby set in motion, and the various acts of signification that inscribe the world. With respect to this world, “[m]ateriality, representation, and imagination are not separate worlds” (Harvey 1996:322), and “[t]here can be no particular privileging of any one realm over the other” (p. 322). “The space of nature,” being socially produced, “is . . . filled with politics and ideology, with relations of production, with the possibility of being significantly transformed” (Soja 1996:626). Given the complexity of this ecological object, each new ecology that I have discussed—symbolic ecology, historical ecology, political

ecology—represents a different angle of vision on the same multiplex spatiotemporal reality as the various new ecologies synergistically merge.

Ecological Essays in the New Materialism

I said at the outset that this collection offers several soundings in the new ecologies and purports no exhaustive exploration. The collection illustrates the sheer productivity of engaging with the Rappaportian legacy—a legacy that in part anticipates the new ecologies, in part blocks their realization, and that has implications as well for other domains of inquiry (evolutionary sociology, the anthropology of religion, and semiotics [Watanabe and Smuts, this issue; Wolf, this issue]). The collection strives to establish what is usable, what problematic, in the oeuvre by way of exploring the varied terrains of the new ecologies.

This anthology opens with two essays written by senior anthropologists: Eric Wolf, best known for his work in political economy, and Conrad Kottak, an ecologist who taught for many years with Rappaport at the University of Michigan and whose essay reflects more recent trends in both his own thinking and that of Rappaport in his later years. Wolf and Kottak share an insistence on the need to incorporate political economy into the heart of political ecology. This is the muted but unmistakable theme of Wolf’s contribution. To the extent that power relations are understood in structural, institutional, or systemic terms, Wolf’s concept of “structural power” (1994, 1999, this issue) is crucial. “This term rephrases the older notion of ‘the social relations of production’, and is intended to emphasize power to deploy and allocate social labor. . . . Structural power shapes the social field of action so as to render some kinds of behavior possible, while making others less possible or impossible” (1994:219). Kottak’s “linkages” approach (this issue; also Kottak and Colson 1994) is a methodological contribution to the study of that structural power. It “emphasizes the embeddedness of communities in multiple systems of different scale” (this issue, p. 31) in a multitiered and globalizing world. However, even in a context of globalization, anthropologists must attend to “the specifics of local culture and social structure” and the impact of these specifics upon ecological outcomes (p. 31). This caveat is not just for the political-economy oriented political ecologist but for the vulgarly materialist ecologist. “People must come first. Cultural anthropologists need to remember the primacy of society and culture in their analysis and not be dazzled by ecological data” (p. 33).

Wolf’s emphasis upon structural power resonates with Rappaport’s own interest in systems, and Rappaport’s unmistakable affinity to political economy became more and more pronounced as he delved into what he called “engaged anthropology” (see, especially, 1994b). However, anthropologists are increasingly concerned with discursive

practices and their politics and efficacy and with decentered fields and their contestations rather than with structure or system per se. In this context, the symbolic or discursive is no collective representation of an anterior and extrasymbolic reality, no metonym of an extradiscursive totality, but, rather, a *materially* consequential instrument. This approach to discourse is political rather than hermeneutic, a matter of focusing upon the "discursive field" as a field of " 'things said' " and their power (Foucault 1991a: 63), rather than upon a phenomenological, experiential, or "lived" reality (Ricoeur 1980). Where the approach differs from the transactional analysis of the 1970s is, first of all, in its awareness of the political effects of action, and secondly, in its refusal to focus upon institutional totalities, concentrating instead upon a dispersion of (often competing) practices and powers. The more self-consciously Foucauldian the inquiry, the greater the attention paid to the "disciplinary" power of various "apparatuses" and "techniques." Where it differs from symbolic anthropology is in its politicization, historicization, and decollectivization of representation. Discourse contests, negotiates, positions, and through its representations creates; and, under determinate circumstances, it has its own productivity and political and material effects.

Rappaport's "anthropology of trouble" (1993) was an anthropology of "disorder" (1994a): an anthropology of systemic inversion in which "lower order" entities usurped the functions of "higher order" entities, displacing moral and ecological values associated with policy and governance with the economic values of the market. Pete Brosius's theme in "Green Dots, Pink Hearts" is similar: the way in which "moral or political imperatives" are effectively displaced at the expense of environmental values. Yet he locates this displacement and its logic and politics within ecological activism and its discursive practices rather than in systemic disorders. Focusing on the Sarawak campaign against logging in the 1990s, Brosius shows how indigenous actors and their initiatives are enveloped and displaced by "institutions for local, national, and global environmental surveillance and governance" (p. 36). These institutions—the Malaysian state and Malaysian and "Northern" environmental NGOs—"inscribe and naturalize certain discourses," privileging some actors and marginalizing others, and in the process displace indigenous voices and indigenous initiatives with national and international ones. The moral high ground that the Penan at first effortlessly gained in the Sarawak campaign against logging of the 1990s was subsequently undermined by a countervailing campaign waged by the Malaysian state, ultimately in dialogue with national and international NGOs, in the name of public interests. As events unfolded, "the discursive and institutional contours" of the issues were "shifted . . . away from the moral/political domain and toward the domain of governmentality, managerialism, and

bureaucratization. . . . What began [with the Penan] as a series of critiques of top-down environmental management . . . is increasingly being appropriated" as "local communities and grassroots social movements" (pp. 49–50) are progressively enveloped and displaced. This politics of displacement is accomplished discursively, through "a shifting pattern of marginalizations and privilegings that occur as the terms of the debate"—controlled at higher levels—"shift" (p. 50).

Against the presumption that subaltern environmental movements are empowering and liberatory (Peets and Watts 1996), Brosius suggests instead the emasculation of oppositional politics through the discursive strategies of the state, as these are developed in dialogue with environmental institutions themselves. Brosius's essay can be read as an essay in Foucauldian "governmentality," a term that Foucault developed to talk about the combination of "disciplinary" and juridical forms of power—of managerial forms of power based on the creation of microspaces and the micropolitics of surveillance on the one hand, and institutional structural power (Wolf, this issue) on the other. "[We] need to see things not in terms of the replacement of a society of sovereignty [with its institutional and juridical power] by a disciplinary society" (Foucault 1991b:102), a replacement that Foucault had chronicled in his brilliant *Discipline and Punish*; rather, "in reality one has a triangle, sovereignty-discipline-government" (p. 102)—a combination of different kinds of power and method. Brosius's case study poses several important questions. What is the relationship between discourse and governmentality? When and how are oppositional politics effective in their effort to undermine governmentality? When and how does "decentering" occur?

Lisa Gezon's "Of Shrimps and Spirit Possession" also considers subaltern, subnational initiatives to curb the encroachments of a majority, although the efficacy of the efforts she describes remains to be seen. In "Of Shrimps and Spirit Possession," Gezon shows us how the Antankarana, an ethnic group living in northern Madagascar, deploy ritual to stake a claim to marine resources in their attempt to fend off the ethnically dominant Merina of central Madagascar as well as international competitors. Within an encompassing ethnic politics of some historical depth, Antankarana leaders employ a rhetoric of spirits and spirit possession to insist on resource ownership and autonomy in resistance to Merina and outside incursions. The fact that ritual is the genre deployed creates a tension between Gezon's and Rappaport's approaches. For Rappaport and his "new ecology," ritual was a regulator and an adaptive tool; for Gezon, ritual is a discursive instrument deployed in an oppositional politics, an argument that dissociates power and structure and that claims ritual, with all its symbolism, for a "poststructural" political ecology (see Peet and Watts 1994).

My own contribution, "The Mount Kare Python and His Gold," combines symbolic ecology with historical ecology to argue that Rappaport's "cognized models," insofar as they motivate behavior, have as much "impact" as tangible activities such as gold mining and, more to the point, that gold mining itself, at least in the part of the New Guinea highlands that the article concerns, must be understood against a backdrop of mythology and cosmology and a local poetics of nature, all of which motivates the present-day enthusiasm for gold mining and other aspects of development. It follows that cognized models are among the causes of the reality that "operational models" strive to depict, that operational models themselves attempt to mirror a reality that is shaped through the interaction of culture and nature. In this reformulation, the symbolic and the material are no longer dichotomized—the one "emic," the "etic," each belonging to its own ontological order—but, rather, the two interact in real time, and it is this interaction that has reality effects. Rappaport himself pointed the way to a more dialectical reading of the nature-culture relationship when he argued that cognized models "direct behavior" (1979b:98; also, 1968:238–239). In directing behavior, cognized models explain the environment *as wrought*. The implications are multiple: that cognized and operational models refer to different moments of a reality that is constituted in and through the symbolic, that representation is a condition rather than merely a reflection of reality, and that, in an anthropocentric (rather than ecocentric) ecological anthropology, symbolic ecology and historical ecology are inextricably linked. Since the context for this interaction is gold mining, any adequate ecological analysis must attend to the local-global articulations and their impacts that the "new ecology" avoided. What spatial language does an ecology that attends to local-global articulations require? At its close, the article argues for the use of the term *place*, which allows us to spatialize local-global articulations as well as the dialectic of the symbolic and the material as older terms (*environment*, *niche*) do not.

In "Land, Stories, and Resources," Tom Ernst explores another aspect of the dialectical relationship between nature and culture. The setting is the Great Plateau in the interior of Papua New Guinea, several hundred miles southwest of where Rappaport completed his Maring study in the 1960s. The Onabasulu live across the river from where Chevron Niugini Pty Ltd heads up the Kutubu Petroleum Development Project, largely to the benefit of the Fasu, neighbors of the Onabasulu. Like Brosius, Ernst is concerned with discursive practices and their political ecology. The stories that Ernst collected are told and retold in a complex terrain, one that includes a local people, a multicultural region, the state, a multinational corporation, as well as the anthropologist himself. Among the discursive devices that Onabasulu deploy is the state-awarded certificate of group incorporation. Once awarded, a certificate

transforms the amorphous social groups of Onabasulu society into an Incorporated Landowner Group (ILG), "enti-fying" them as clan-stakeholders in an era of development. Traditionally Onabasulu groups were not bounded, corporate descent groups; now, it seems, through the reifications of the State of Papua New Guinea, they are. While these certificates are among the instruments that the state has devised to monitor and manage development (see Brosius, this issue), Ernst shows—and rather against the grain of Brosius's argument—how local constituencies manipulate these top-down managerial efforts for their own purposes, exploiting the performative powers of the state to position themselves with respect to that state and the resource development over which it presides.

Ernst provides a unique glimpse into another dimension of the nature-culture dialectic: how society itself, as well as ethnic identities and boundaries, are produced or transformed through the codifications of the state at a time of capital-intensive resource development. His analysis poses a crucial question about the genesis of Pacific modernity: Is the contemporary the product of a continuing tradition, an imposed and exogenous modernity, or is it the outcome of the historical interplay of the two (see Carrier 1996; Friedman 1996; Lederman 1998; Sahlins 1994)?

John Watanabe and Barbara Smuts's essay "Explaining Religion without Explaining It Away" returns us to the concerns of Wolf's opening essay, the form (rather than, as in Brosius's essay, the politics and pragmatics) of language. Rappaport's specific contribution to evolutionary studies was through the study of ritual language. Rappaport argued that, to the extent that language is unique to the human species, so is the possibility of deception, for language can signify what is not present to the senses and what, in fact, does not exist. Sanctifying messages rescues the species from the perils of crippling uncertainty that this possibility creates by guaranteeing the truth of the information conveyed (see 1999 for the most recent iteration of the argument). Studying baboon greeting behavior, Watanabe and Smuts's article extrapolates these observations for an evolutionary sociology founded upon the development of cooperation.

Watanabe and Smuts transpose Rappaport's concern with the ritual roots of society onto an evolutionary scale that encompasses nonhumans as well as humans and that asks as its central question: What makes social relations (of peace, cooperation, production, and exchange) possible? As the article makes clear, formalist contributions to evolutionary theory may be as important as functionalist ones. In fact, as in Rappaport's own contributions to ritual studies, they may be inseparable. The article also illustrates the utility for rethinking the disabling dichotomies of the past—in particular, individual/society, idealism/materialism, symbolic/behavioral approaches, and cultural/physical anthropology—for evolutionary sociology.

While the ideas that "Explaining Religion without Explaining It Away" addresses may seem less central to Rappaport's writings, they receive full, book-length treatment in his last work, *Religion and Ritual in the Making of Humanity*, a book about sanctification; and Durkheim's sociology of religion, as evidenced in *Elementary Forms of Religious Life* and other texts, is the constant touchstone of *Religion and Ritual in the Making of Humanity*.

Notes

Acknowledgments. This contemporary issues forum grows out of a panel called "Roy A. Rappaport: Assessments and Appreciations" that I organized for the 1997 annual meetings of the Society for Applied Anthropology and the Political Ecology Society (PESO), held jointly in Seattle in March 1997. In addition to the contributors to this special issue, Kathryn Kozaitis and Susan Lees also gave papers on the panel. I should like to thank Conrad Kottak for helping me recruit panel participants, PESO and especially Jim Greenberg for listing the panel as a PESO panel, and Ed Liebow for assisting me with organizational details. Skip Rappaport showed a keen interest in the panel and accepted our bouquet of papers as well as our occasional criticisms with characteristic warmth and grace. We all remember with gratitude Skip's many assistances and encouragements. Conrad Kottak has offered invaluable advice in publishing the panel's proceedings. Thanks also to Carolyn Cartier, a geography colleague, for her reading of a draft of this introduction and her many comments and bibliographic tips. The *American Anthropologist* reviewers were excellent, and the collection is far better for their candid and intelligent evaluations. I would also like to thank Bob and Linda Sussman for their help, guidance, and patience in the editorial and production processes. The maps, figures, and tables were all created by Jerry Jacka, who is presently conducting research in Papua New Guinea and who is a doctoral student in anthropology at the University of Oregon. Preparation of the artwork was funded through a Target of Opportunity award received from the Department of Anthropology, University of Oregon. The most distinguished contributor to this Contemporary Issues Forum, Eric R. Wolf, died just two years to the day after delivering "Cognizing 'Cognitive Models'" in Seattle, Washington. We all felt privileged by Eric's participation on our panel, and it is an honor to include here the Seattle text he wrote in homage to his friend and colleague, Skip Rappaport.

1. The term *new ecology* was not used by either Rappaport or Andrew P. Vayda, his doctoral supervisor, but, rather, by Robert Murphy in his 1970 article "Basin Ethnography and Ecological Theory." Rappaport and Vayda rejected the term *cultural ecology*, a paradigm associated with the ecological writings of Steward and Harris that they criticized (Vayda and Rappaport 1968; see Vayda and McCay 1975:294; see discussion of cultural ecology and the new ecology in Murphy 1970).

2. Actually Kottak made this point quite emphatically, in rejecting the idealist or materialist alternatives that the nature/culture dichotomy inevitably poses (see Descola and Pálsson 1996), at the close of *The Past in the Present: History, Ecology, and Cultural Variation in Highland Madagascar*,

and Rappaport echoed this point in his "Foreword" to the same work.

3. *Pigs* was inevitably challenged for its inattention to agency and events (Lees and Bates 1990; Vayda 1996; Vayda and McKay 1975 [Rappaport's remarks on this feature of the argument in 1984:396-403, 1990:42-43 are germane]) and its overemphasis upon an undemonstrated yet stipulated "system." However, Rappaport himself opened the door to a more actor-centered ecology when, in defense of his proposition that the Maring ecosystem was self-regulating, he spoke of regulating selves rather than of system self-regulation. While the explicit *Pigs* paradigm was objectivist, system- or "mechanism-" rather than action-focused, in actual fact the massive slaughter of pigs is triggered when women complain about the mounting size and increasing unruliness of the pig herds. Maring women, who are the principal gardeners and pig husbands, have made a judgment that there are too many pigs and lobby for intervention. That the massive slaughter of pigs is triggered when women complain about the mounting size and unruliness of the pig herds suggests not that the "system" is "self-regulating" or that ritual is a "mechanism" for achieving homeostasis but, rather, that variables are consciously regulated by actors. Defending the notion of self-regulation, Rappaport wrote, "Maring local groups are regulating the ecosystems within which they participate, or to put it in the converse, the domain of the regulatory operations of a local group in this instance defines an ecosystem. Because a Maring local group is a component of the ecosystem which it regulates . . . the ecosystem is by definition self-regulating" (1990:43). He concludes that the ecosystem concept should be maintained "because there are sufficient grounds . . . , at least in the case of anthropocentric systems, to be self-regulating and self-organizing" (p. 47). But this makes regulation an agent effect rather than a system function—and the so-called system anthropocentric.

4. Of course, cultural politics need not displace political economy. Carolyn Merchant's *The Death of Nature*, for example, combines symbolic ecology's attention to the construction of nature and its possible gendering (see Ortner 1974) with an ecofeminist critique of capitalism.

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