

# There's nothing inherent about scale: political ecology, the local trap, and the politics of development in the Brazilian Amazon

J. Christopher Brown <sup>a,\*</sup>, Mark Purcell <sup>b</sup>

<sup>a</sup> Department of Geography, University of Kansas, 1475 Jayhawk Blvd, 213 Lindley Hall, Lawrence, KS 66045-7613, USA

<sup>b</sup> Department of Urban Design and Planning, University of Washington, Box 355740, Gould 410, Seattle, WA 98195, USA

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## Abstract

This paper argues that research in political ecology would benefit from more explicit and careful attention to the question of scale and scalar politics. Although political ecologists have extensively considered scale as a methodological question, they have yet to develop an explicit theoretical approach to scale as an object of inquiry. We highlight one principal drawback to this underdeveloped approach to scale: what we call “the local trap” in which political ecologists assume that organization, policies, and action at the local scale are inherently more likely to have desired social and ecological effects than activities organized at other scales. Over the past 10 years or so, an increasingly sophisticated literature on scale has been developing among scholars in geography working in the political economy tradition. This literature has argued that scale is socially produced rather than ontologically given. Therefore, there is nothing inherent about any scale, and so the local scale cannot be intrinsically more desirable than other scales. We suggest that a greater engagement with this scale literature offers political ecology a theoretical way out of the local trap. As a first approximation of the kind of scalar analysis we advocate, we present a case study that examines the scalar politics that have shaped environmental change in the Brazilian Amazon.

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## 1. Introduction

This paper argues that research in political ecology would gain from more explicit and careful attention to the question of scale as an object of inquiry. It is true that political ecologists have long engaged in methodological debates about scale. Questions about the strengths and weaknesses of various *scales of analysis*, and arguments about how to incorporate various scales of analysis in political ecological research, have been at the forefront in these debates (Vayda, 1983; Meyer and

Turner, 1992; Blaikie, 1995; Turner, 1999).<sup>1</sup> Instead of questions of scales of analysis, however, we advocate more careful attention to the question of scale as *an object of inquiry*. We are calling for a more explicit understanding of the way that human–environment dynamics in development take on particular scalar configurations, and how those configurations are produced, undone, and reproduced through political struggle. To the extent that political ecology has examined scale in this way—as

<sup>1</sup> Also important has been a large literature on ecological scale (Turner et al., 1989; Levin, 1992; Peterson and Parker, 1998). Clearly the interplay between the politics of scale and ecological scale is an important issue for future research, one that Sayre has engaged (2002). However, that very large theoretical project is beyond the scope of this particular paper, whose goal is to demonstrate the utility of the politics of scale perspective for current research in political ecology.

\* Corresponding author.

*E-mail addresses:* [jcbrown2@ku.edu](mailto:jcbrown2@ku.edu) (J. Christopher Brown), [mpurcell@u.washington.edu](mailto:mpurcell@u.washington.edu) (M. Purcell).

an object of inquiry—it tends to provide an undertheorized conception of scale. More often than not, the properties of scale have been latently implied rather than explicitly analyzed, often resulting in misleading assumptions about scale that have at times sidetracked research. We suggest that one solution to this underdevelopment is a closer engagement with a growing literature in geographical political economy<sup>2</sup> that takes scale and “the politics of scale” as a specific analytical focus (e.g. Smith, 1992a,b; Smith, 1993; Jonas, 1994; Smith, 1995; Agnew, 1997; Delaney and Leitner, 1997; Swyngedouw, 1997a,b; Howitt, 1998; Marston, 2000; Brenner, 2001a). Attention to scale as an object of analysis has become increasingly critical over the past 30 years, as the diverse processes associated with globalization have involved a profound re-scaling of political, ecological, cultural, and economic relationships (Cerny, 1995; Smith, 1995; Swyngedouw, 1997a,b,c; Brenner, 1999).<sup>3</sup>

In focusing our consideration on “political ecology”, we are referring to a very large and fragmented literature from several disciplines, including geography, sociology, anthropology, biology, and ecology. This work concerns itself with issues related to ecology, conservation, and development. It examines the relationships among humans and between humans and the physical environment in the context of development in the global South. We are thus giving a working label to a diverse body of research in geography and beyond, most of which, we argue, is subject to the paper’s critique. For example, research on classic issues like the effect of international or national policies on the environment and livelihoods of local people, their culture, their access to natural resources, and their role in natural resource use decisions is contained within our view of political ecology. We argue that political ecology’s latent and undertheorized treatment of scale as an object of inquiry leads it toward a significant problem—what we call the “scalar trap”—whereby many researchers assume that organization, policies, and action at a particular scale are inherently more likely to have desired social and ecological effects than arrangements at other scales.<sup>4</sup> Most commonly in political ecology, the scalar trap takes on

the form of a “local trap” that leads researchers to assume that the key to environmental sustainability, social justice, and democracy (commonly desired outcomes among political ecologists) is devolution of power to local-scale actors and organizations.

The local trap would assume, for example, that when decisions about forest resources are made by people at the scale of a particular forest ecosystem, the outcome will be more socially and environmentally just than if the decisions are made, for example, by a national body politic (Bassett and Zueli, 2000). Some in political ecology have identified this assumption and expressed discomfort with it (Bebbington, 1995, 1996; Mohan and Stokke, 2000; Herring, 2001; Myers, 2002). They have discovered in case studies that local-scale arrangements do not always lead to more desirable outcomes. But it is inefficient to reach that conclusion through in-depth field research. The politics of scale literature offers the a priori conclusion that there is nothing inherent about scale; it does not allow for the assumption that there is something intrinsically desirable about the local scale. Therefore, the literature in political economy on scale offers political ecology something it currently lacks: a systematic theoretical argument to prevent a habitual preference for local scales.<sup>5</sup> Though this literature is by no means the last word on scale, over the last few years scholars in political economy have engaged in a thoughtful and sustained examination of the meaning of scale and scalar politics. The literature argues that scale and scalar configurations are not an independent variable that can *cause* outcomes, rather they are a *strategy* used by political groups to pursue a particular agenda. Therefore, the social and ecological outcomes of a given scalar arrangement are not to be divined in the scales themselves, but in the political agendas of the actors and organizations that produced and are empowered by the arrangement. As Erik Swyngedouw has argued, “the theoretical and political priority” in scale research “never resides in a particular geographical scale, but rather in the [social] processes through which particular scales become (re)constituted” (Swyngedouw, 1997a, p. 169).

<sup>2</sup> Throughout the paper, we refer to this research area as “political ecology,” by which we mean those geographers working in the radical political economy tradition.

<sup>3</sup> It is worth noting that while we find scale to be a useful way to understand the current global system, not all geographers agree. In particular, many argue that networks and place are better concepts for understanding current changes (Whatmore and Thorne, 1997; Amin, 2002). For our part, we find both concepts are relevant and find it unhelpful to reject one or the other. It is beyond the scope of this paper to make a definitive case for scale as a useful concept in geography. In defending its relevance, we would simply point to both the large and dynamic body of recent work on scale in political economy and the large majority of geographers who still find the concept worth keeping.

<sup>4</sup> We are adapting John Agnew’s well-known phrase, “the territorial trap” (Agnew, 1994).

<sup>5</sup> In critiquing the uncritical acceptance of the local, for example, Mohan and Stokke (2000, p. 249) argue that it is “crucial to pay attention to issues of scale.” They note that “the issue of scale... has been especially central in recent discussions about... globalization” (p. 261). And they contend that “the linkages between scale and politics have become more complex, but more crucial, in these global times” (p. 262). Nevertheless, they do not engage scale theorists or offer their own theorization about scale that could help avoid the “dangers of localism” they fear. They do refer, in the conclusion, to Massey’s notion of a ‘global sense of place’ as a way to avoid the dangers. This concept might be a viable alternative (see footnote 3, above), but Mohan and Stokke do not develop theoretically how the place literature might help.

The remainder of the paper illustrates how the politics of scale literature can help construct a more explicit analysis of scale in political ecology and can provide a theoretical way out of the local trap. We begin by articulating a theory of scale and scalar politics drawn from the scale literature in political economy. We then review recent research in political ecology and suggest that some work incorporating scale theory has begun, but there is more to do. Lastly, we present a case study that reads environment and development in the Brazilian Amazon through the lens of the new scale theory. The case is not designed to offer original research on Brazil. Rather our goal is to re-read one of the most well-known narratives in political ecology to model with concrete details how an analysis informed by scale theory in political economy might look.

## 2. Political economy and the politics of scale

Scale is a foundational concept in geography. However, it is perhaps the slipperiest and most abstract of geographical concepts, and it has not enjoyed sustained attention throughout the intellectual history of the discipline (Jonas, 1994; Harvey, 1996; Howitt, 1998). Significant work has been done in geography on scale as a methodological question (Lam and Quattrochi, 1992; Quattrochi and Goodchild, 1997). But as an explicit object of analysis, scale has generated less interest. In 1992, Smith (1992b, p. 72) summed up the situation, writing that in geography the theoretical account of scale “is grossly underdeveloped.” Since Smith’s claim, he and other geographers have begun to remedy this deficiency by actively thinking through scale in new and increasingly sophisticated ways. The bulk of this new attention has been undertaken by geographers working within a political economy tradition, who are struggling to understand the recent profound shifts in global political economy brought on by globalization, the internationalization of production, and state restructuring, among other processes. In this section we offer an account of this recent work on scale in geography. We argue that to date this work has established three main theoretical principles: (1) scale is socially constructed, (2) scale is both fluid and fixed, and (3) scale is fundamentally a relational idea.<sup>6</sup>

An early and central insight of the new work is that scale has no ontological nature. That is, no scale has

any inherent and eternal qualities that make it particularly suited to a specific social or ecological process (Smith, 1993). Instead, scale is *socially produced*: it is constructed through contingent political struggle (Delaney and Leitner, 1997; Kelly, 1997). As Neil Smith (1992b, p. 73; quoted in Marston, 2000) writes, “there is nothing ontologically given about the traditional division between home and locality, urban and regional, national and global scales.” Instead, “the differentiation of geographical scales establishes and is established through the geographical structure of social interactions.” Therefore the characteristics of a given scale or scalar arrangement cannot be assumed a priori; rather the social and ecological outcomes of any particular scalar arrangement are the result of the political strategies of particular actors, not the inherent qualities of particular scales. For example, John Agnew (1994) has argued that although the sovereignty of the territorial state has been organized historically at the national scale, the national-scale character of state sovereignty is not inherent. Rather the state has been socially produced as national in a particular historical era by particular political interests. In the past, state sovereignty has been fixed at smaller scales (the urban, the regional) and at larger scales (the imperial); it is beginning to emerge at a continental scale (the E.U.) and perhaps even a global scale (Falk, 1994; Smith, 1995; Sassen, 1996; Leitner, 1997; Morris, 1997; Holston and Appadurai, 1999; Wallace, 1999; Hardt and Negri, 2000). Agnew thus argues that it is a fallacy to assume that the state’s national-scale character is inherent and eternal. Instead, the research focus must be on the motivations and strategies of those who construct state sovereignty as national, and of those who work to reproduce state sovereignty at new scales such as the city, the continent, or the globe. This refusal to assume inherent and eternal qualities for scale and the stress on social construction of scales through political struggle is why the phrase “the politics of scale” has become the catch phrase of the literature (Smith, 1992b; Agnew, 1997; Swyngedouw, 1997b).

A second insight of the literature, one that follows from the first, is that scale is both *fluid and fixed*. Because scales are socially produced through political struggle, and because political struggle is an ongoing process, scales and scalar arrangements are strongly fluid and processual. Scalar arrangements are constantly being made and remade. Swyngedouw (1997b), for example, argues particularly strongly that scale is fluid and that geographers and others have tended to mistakenly think of scales as fixed and given. They have assumed that each scale has both a fixed extent and a preset function in the global political economy. He stresses instead the malleability of scalar arrangements and the extent to which they are constantly in historical motion. He asserts that assuming scales as fixed and given has led geographers to treat scale as a latent variable

<sup>6</sup> It is beyond the scope of this paper to extensively substantiate these general principles through extended discussion. However, such substantiation has been extensively provided over the last 10 years within the politics of scale literature. Readers seeking more detailed theoretical defense of these principles should consult, among others (Smith, 1990, 1992a,b, 1993, 1995; Jonas, 1994; Agnew, 1997; Swyngedouw, 1997a,b; Howitt, 1998; Marston, 2000; Brenner, 2001a).

instead of an active object of inquiry, which we contend is the same problem that has characterized research in political ecology. It has prevented geographers from perceiving how scales are being continually reorganized. Taylor (1996), Brenner (1997), and, as we have seen, Agnew (1994) have noted this problem with respect to the state and its organization at the national scale. As part of the processes of globalization, what we see currently is the extensive restructuring of the state away from the national scale and toward organization at other scales, both larger and smaller than the national (Jessop, 1994; Smith, 1995; Brenner, 1997; Leitner, 1997; MacLeod and Goodwin, 1999; Purcell, 2002).

However, it is important to be clear that few argue that this fluidity is total (although see Mansfield, 2001). Scales and scalar arrangements are not only fluid and processual, they can also be routinized into relatively enduring and hegemonic structures for certain periods of time. Just because scale has no inherent or eternal characteristics does not mean that over a certain period scales cannot be associated with particular characteristics or social processes. The argument is that these characteristics and process are only temporarily (not inherently) associated with a particular scale, and that each scalar configuration must be continually reproduced through a political project. Even though we should expect a given scalar configuration—such as national-scale state sovereignty—to be challenged and eventually overcome by other projects that imagine sovereignty at other scales, nevertheless a dominantly national-scale sovereignty can become hegemonic for a time, and this hegemony can have real and important effects on the exercise of political power. In this sense, scale is not only fluid, it is also fixed. Moreover, fixity and fluidity are related dialectically. Brenner (2001a, p. 37) in particular stresses this dialectical relation, arguing that any reorganization of scalar relationships (fluidity) takes place in the context of the current established structure (fixity).<sup>7</sup> Neil Smith (1993) argues this point particularly strongly. His notion of “jumping scales” involves a political strategy to circumvent and challenge the present entrenched structure of scale. Groups at a disadvantage at one scale will pursue their aims at a different scale, hoping to turn the balance of power to their advantage. Often this strategy is undertaken by marginalized groups who do not benefit from the present scalar arrangements. Smith suggests that the present structure is not pre-given or eternal, but it is nevertheless *real*, and it does favor certain groups over others. Along these lines we might mobilize the term “structuration of scale.” Giddens’ (1984) notion

of structuration implies the process whereby agents both reproduce and are constrained by structures. For scale, structuration involves the continual process of fixing, un-fixing, and re-fixing scalar structures (Brenner, 2001a). Scale, then, is simultaneously fluid and fixed.

Lastly, the literature has stressed that scale is fundamentally a *relational* concept (Agnew, 1997; Howitt, 1998; Kelly, 1999). The idea of scale necessarily implies a set of relationships in which scales are embedded within other scales. The national scale, for example, is embedded within the global, and the global is made up of the various national scales. Each is inseparably tied to the other, but the particular way they are related is open to social production. Therefore, analyzing the question of scale necessitates analyzing the relationships among scales. Neil Brenner’s (2001a) piece is particularly keen to stress the relational nature of scale. He argues that analyses that focus on only one scale—what he calls the “singular connotation” of scale—are not really talking about scale per se, since analysis of a *single* scale cannot apprehend the relationships among scales. More accurately, he argues, such singular analyses are talking about a particular region, territory, place, or space rather than about a scale. Brenner argues instead for what he calls the “plural connotation” of scale, in which the analysis focuses on the “shifting organizational, strategic, discursive, and symbolic relationships between a range of intertwined geographical scales” (Brenner, 2001a, p. 20). Therefore, analyses that are specifically analyses of *scale*—rather than of territory or place or space—must examine a range of scales at once (rather than focusing on a single scale alone), and they should specifically interrogate the changing interrelationships among the various scales. A local scale, for example, cannot be analyzed—as a *scale*—in isolation. It must be analyzed as it relates to other scales. Therefore, while we must pay attention to how each scale is socially produced, we must also examine how the *relations* among scales are also socially produced. In the example of the territorial state, we must understand not only the social production of a particular national scale but also the relationships among this national scale and a range of other scales at which the state is also constituted. This relational focus points up the importance of hegemony in scalar arrangements. In discussing the national-scale state, we do not mean that the state does not exist at other scales, but that the national scale has become the hegemonic scale of state authority, and that other state scales are subordinate to the national. Therefore, in the paper we speak of both “scales” and “scalar arrangements” since we must understand the social production both of particular scales and of the relationships among them.

If we were to unify the three theoretical principles above into a single directive for research on scale, we

<sup>7</sup> This argument runs parallel to Harvey’s (1982) contention that spatial fixity and fluidity are both necessary elements of capital accumulation, and Brenner’s formulation draws explicitly on Harvey’s work.



might say that the analysis of scale should examine how the relationships among scales are continually socially produced, dismantled, and re-produced through political struggle. The analysis should always see scales and scalar relationships as the outcome of particular political projects. It should therefore address which political interests pursue which scalar arrangements. Furthermore, it should analyze the agenda of those political interests. Political and economic geographers have incorporated these principles of scale into their examination of their principal subject, the global political economy. Their main argument with respect to scale is that the most recent (post-1970) round of global restructuring has involved a scalar shift in the organization of the global political economy. In the Fordist era, capitalist interests involved in large-scale manufacturing allied with national governments to produce a stable national-scale compromise between capital and labor that suited the interests of capital, labor, and the state. In the contemporary, post-Fordist era, this national-scale hegemony is being dismantled; capital has expanded the scale of its operations in an effort to overcome the crises of the early 1970s and establish a new international regime of accumulation studded with particularly strong regional clusters of economic activity (Peck and Tickell, 1994; Storper, 1997; Dicken, 1998; Scott, 1998). Though the national-scale state remains powerful in this new arrangement, its hegemony has slipped and new scales of state organization have become increasingly important (Jessop, 1998; MacLeod and Goodwin, 1999; Jessop, 2000; Peck, 2001). The relationship among the various scales of organization is therefore presently in relative flux. The clear trend so far in the post-Fordist era has been a shift away from the dominance of national scale arrangements and toward organization at both local/regional scales and international/global scales. Thus we see, for example, analyses of “state devolution” whereby the national-scale state cedes authority and responsibility to sub-national states and non-state institutions (Staeheli et al., 1997). We see also analyses of “the internationalization of production” whereby firms whose organization and operations were formerly limited mostly to the national scale have expanded their operations to international scales in a search for a new “spatial fix” for accumulation (Harvey, 1982; Dicken, 1998). This dual scalar shift away from the national and toward the global and local has been termed “glocalization” (Swyngedouw, 1992; Courchene, 1995; Robertson, 1995), and it represents a central component of the argument in recent political economy. Most observers argue that it remains to be seen if this “glocalization” trend will result in a re-fixing of hegemony such that local and the global scales share an enduring scalar preeminence at the expense of the national. But the thrust of the glocalization thesis has been to understand how particular interests are struggling to

unfix, rearrange, and re-fix the relationships among socially produced scales in the global political economy.

### 3. Scale in political ecology

To an extent, the roots of the political ecology tradition lie in an effort to transcend the methodological limitations of cultural ecology, which too often examined only the local scale and treated it as a closed system. Political ecology’s rallying cry has been for analyses that examine the “wider political economy” so that the local scale can be analyzed in its wider scalar context (Ite, 1997; Mehta, 2001; Filer, 1997; Sharpe, 1998; Vayda, 1983; Tanner, 2000; Bebbington, 1999). Arguing that cultural ecology’s view of local places was based on outdated notions of closed, stable ecological systems, the early political ecologists called for more attention to how local human ecologies were embedded in a set of wider political-economic processes that greatly influenced local outcomes (Blaikie, 1985; Blaikie and Brookfield, 1987; Peet and Watts, 1996; Zimmerer, 1996). Political ecologists in the 1980s were influenced by the political-economic literature in general and Marxist thought in particular. Bryant (1998, p. 3) notes that “neo-Marxism offered a means to link local social oppression and environmental degradation to wider political and economic concerns relating to production questions.” Despite this early engagement, over the past ten years or so political ecologists have for various reasons moved away from their engagement with work in political economy.<sup>8</sup> Evidence of this disengagement is that the work on the politics of scale, one of the most dynamic bodies of work in current political economy, has scarcely attracted attention from political ecologists. Citations of the politics of scale literature are rarely found even in political ecological work that is explicit in its attention to scale (e.g. Bassett and Zueli, 2000; Adger et al., 2001; Schroeder, 1999a,b; Gezon, 1999; Raffles, 1999; Awanyo, 2001; Becker, 2001; Freidberg, 2001; Young, 2001). Erik Swyngedouw’s work is particularly instructive. He is both a leading scale theorist and an insightful political ecologist working primarily on water provision. Oddly, much of his political ecology work does not draw explicitly on his scale work, even when the potential links are quite clear (Swyngedouw,

<sup>8</sup> We should stress that the reverse is also true: political economists pay far too little attention to questions of nature, ecology, and environment, and they engage too rarely a political-ecological literature that offers great insight into such questions. Given that the entire basis of capitalism rests on generating wealth by transforming and commodifying nature, such inattention to ecological questions is ultimately crippling to a proper understanding of the global political economy. The argument for political economy to engage more with political ecology has been articulated skillfully by Eric Swyngedouw (1997c, 1999) over the past several years.

1997c, 1999). Although it does not explain Swynge-douw's work, part of the move away from political economy is traceable to a turn in political ecology toward post-structural, post-colonial, and postmodern perspectives. These approaches are often critical of the overarching meta-narratives advanced by some political economists (Mohan and Stokke, 2000).

To be clear, we do not suggest that the post-structural turn has been a bad thing for political ecology; we are not calling for a rejection of post-structural approaches or for a wholesale return to political economy. Neither are we calling for a whole-cloth acceptance of the scale literature's analysis of the global political economy. Instead, we argue that current research in political economy has something specific to offer political ecology: its theoretical conception of scale. Further, we argue political ecology is not now taking full advantage of this potential.

In many respects the tendency to essentialize local-scale arrangements also stems from political ecology's early development. As we have seen, in the early 1980s political ecologists were concerned to go beyond the local perspective of cultural ecology, to study how "the wider political economy" structured the local cultures and ecologies that so occupied the attention of cultural ecologists. Pronouncements at the beginning of many political ecology articles, for example, offer now-familiar phrases concerning how human–environmental relationships must be examined at "multiple scales", "across scales," and "among scales," because what happens in local places is impacted by human–environmental factors at different scales (e.g. Vayda, 1983). As Zimmerer (1994, p. 117) states, "attention to multiple scales is now *de rigueur*" in political ecology. We suggest that political ecologists' simultaneous stress on both wider scales and political-economic processes has led them to conflate the two: "wider scales" have become discursively attached to political economic processes, while the "local scale" has become the scale of culture and ecology. Most political ecologists do not explicitly theorize scale as a social construction, and this leaves open the possibility of entering the trap of assuming that certain scales can be inherently tied to particular processes. The tendency in political ecology to think about a "wider" political economy (at larger scales) distinct from a local culture and a local ecology has persisted (e.g. Escobar, 2001). As a result, contemporary political ecologists often lament how the global political economy dictates local cultural and ecological processes, assuming that more decision-making authority transferred to the local scale would allow the forces of culture and ecology to resist those of political economy. There are numerous examples of this assumption in political ecology and development studies, both inside and outside of geography (e.g. Peluso, 1992; Adams and Rietbergen-McCracken, 1994; Fairhead and Leach, 1994;

Hall, 1997; Horowitz, 1998; Michener, 1998; Thorburn, 2000; Twyman, 2000; Brand, 2001; Campbell et al., 2001; Platteau and Abraham, 2002). We argue that the local trap assumption is embedded in calls for greater attention to local indigenous knowledge, community-based natural resource management, and greater local participation in development. Much of this work seeks to highlight the positive qualities of local resistance to marginalization by oppressive political economic processes at wider scales (Vickers, 1991; Herlihy, 1992; Posey, 1992; Miller, 1993; Brosius, 1997; Hall, 1997; Stevens, 1997; Metz, 1998; Sillitoe, 1998; Pichon et al., 1999; Brodt, 2001; Stone and D'Andrea, 2001).

This line of thinking misses the fundamental fact that political economy, culture, and ecology all exist and operate simultaneously at a range of scales. Local scales are always embedded in and part of the global scale, and the global scale is constituted by the various local scales. Local and global cannot be thought of as separate or independent entities; they are inextricably tied together as different aspects of the same set of social and ecological processes (Brenner, 2001b). Moreover, a given social process cannot be thought of as inherently attached to, or operating primarily at, a particular scale. Political economy is not inherently "wider," and culture and ecology are not inherently "local." We cannot train our attention on one particular scale and hope to capture the essence of any of these processes. Rather, we must examine together the various scales at which each operates, to understand how their scalar interrelationships are socially produced through political struggle. Moreover, in order to understand what outcomes a particular scalar arrangement will have, research must analyze the political agendas of the specific actors who pursue and are empowered by that scalar arrangement. We contend that a more explicit and sustained engagement with the political economy literature on scale offers political ecology a systematic theoretical way out of locally trapped thinking.

### 3.1. Recent political ecology research

As we note above, most recent work in political ecology that addresses scale does not engage the politics of scale literature. Partly as a result, much of it tends to treat scale as pre-given and inherent rather than socially produced through political struggle, and it does not seek to explore the dynamic relationships among scales. Moreover, most research does not excavate the political interests that lie behind particular scalar configurations nor does it reveal why they have pursued those particular configurations. This approach to scale allows for the familiar lament that global and national forces are imposing damaging environmental policies on local people and ecologies. We do not argue that these limitations invalidate the research as a whole. Rather we wish to

draw attention to the limitations and show how addressing them can generate entirely new questions in political ecology related to scalar politics.

Some recent work in political ecology has begun to address the question of scale, most evidenced in articles challenging the notion that local-scale control leads to desirable outcomes. For example, Richard Schroeder examines National Environmental Action Plans in Africa, concluding that a localization of power has “succeeded in converting community-based resource management into a tool of structural adjustment” and neo-liberal reform (Schroeder, 1999a, p. 18). However, although he uses the phrase “the politics of scale” (1999b, p. 359) Schroeder does not engage the politics of scale literature, and thus his account of scalar politics is not informed with an explicit theoretical rejection of the local trap at the outset. Had his rich, well researched account not uncovered the detrimental effects of local-scale management, one might conclude incorrectly that it was the local scale configuration of human and environmental relations that brought about those positive conditions.

In a 2001 article in *Political Geography*, Arturo Escobar explores the reassertion of place as a means to “challenge the preeminence of the global” (2001). Escobar argues that political and research overemphasis on the global scale and global processes has obscured the continuing importance of place as a basis for resistance. Instances of place-based resistance, he argues, can be seen as “strategies of localization” that resist globalization. As the last phrase suggests, the issue of scale is relevant to Escobar’s exploration of how place-based movements can resist globalization. Escobar presents the politics of scale perspective as a way to get at these issues. Although he cites the politics of scale research, his analysis of it seems included as a revision rather than as an integral part of the argument. While Escobar understands place to be more than simply the local scale, his notion of place involves some very heavy emphasis on local-scale experiences and processes. Local-scale place is set against global-scale processes as an alternative and reaction to them. The article leads us to conclude, without explicitly saying it, that local-scale people and places preserve cultural difference, while global-scale forces (such as capital) work to erase difference. Escobar’s notion of place ultimately privileges the local through his discursive emphasis. In the end, we might read Escobar’s paper as the work of a post-structuralist whose commitment to difference and resistance tempts him into the local trap, but who is beginning to engage with work on scale in political economy that, perhaps ironically, has argued clearly for the anti-essentialist position that there is nothing inherent about scale.

A recent article by Thomas Perreault also engages the politics of scale literature, perhaps more fully than any

other political ecologist (Perreault, 2003). Perreault uses the scale literature to argue against a focus on localism. He emphasizes that indigenous groups in Ecuador must organize not only locally but at a range of spatial scales, creating “multiscalar networks” that can resist marginalization (p. 97). However, the way Perreault frames his discussion, it is only by “scaling up” their strategies that indigenous groups can increase their power. He ends by arguing that

the capacity of localized actors and social movements to advance their claims against the state or to resist the domination of extralocal actors depends to a large degree on their ability to...forge networks with groups or individuals with broader institutional and, therefore, spatial reach (p. 114).

While Perreault avoids the local trap, his paper arguably is marked by its opposite, contending that localization is disempowering and upscaling is empowering. This assumption of course closes off the ways that localization can empower and upscaling can disempower, as when the agenda of a local group can get lost as it joins a larger-scale movement.

Karl Zimmerer’s (2000) piece in *Ecumene* is also an explicit attempt to think through the role of the politics of scale in political ecology. In his discussion of irrigation in highland South America, Zimmerer argues that various actors have sought to fix the predominant scale at which irrigation is organized. Zimmerer cites the scale literature in political economy, contending that political ecology can benefit from political economy’s insights. Zimmerer seeks to “advance an exchange of ideas between [the politics of scale] perspective and geographical political ecology” (2000, p. 154). Zimmerer shows that scale is not “ontologically given” (Smith, 1992b, p. 73) but is constructed by social actors pursuing particular political agendas. He contends that the scales at which irrigation was coordinated were constructed through political struggle. Rather than being a series of a priori platforms on which politics played out, scales were fixed, dismantled, and re-fixed through political projects. Zimmerer challenges the preference for the local scale that, he argues, impairs thinking about development projects in the region. He argues that the presumed advantages of the local scale must be discarded in favor of empirical investigation that produces “a critical and reflexive familiarity with the existing and past geographies of irrigation” (2000, p. 169). Zimmerer provides an empirical rather than theoretical way out of the local trap. The politics of scale work, by contrast, offers a theoretical strategy that obviates the need to complete further empirical research designed to test whether a particular scale is worse or better for human and environmental outcomes. If we accept that scale is socially produced through political struggle, then there can never

be anything inherent about any particular scale. As we illustrate below, our proposed theoretical approach to scale in political ecology opens the door to a significantly different kind of research, shedding light on processes that have yet to be fully examined.

What remains to be achieved in political ecology are theoretically informed and explicit analyses of how scale and scalar politics are central to understanding human–environment relationships in development processes. We suggest that those analyses accomplish the following: (1) explicitly examine scale as an object of theoretical and empirical analysis, (2) investigate how scales and scalar interrelationships are socially produced through political-ecological struggle, and (3) analyze how scales and scalar relationships become fixed, un-fixed, and re-fixed as a result of that struggle. Furthermore, they should (4) address which political interests advocate a particular scalar arrangement, and (5) analyze how the realization of their political agenda produces social and ecological outcomes. In the case study that follows, we seek to model such a scalar analysis by examining the history of environment and development in the Brazilian Amazon. We argue that our approach to scale provides a theoretical way out of the local trap. Because it sees scale as a strategy to achieve an agenda rather than as a pre-given entity, this approach rejects the assumption that particular outcomes will result from particular scalar arrangements. Rather it compels researchers to examine the political interests and agendas that produce a given set of scalar arrangements. Those agendas, not the scales themselves, lead to social and ecological outcomes.

#### **4. The scalar politics of development in the Brazilian Amazon**

The purpose of the case study is not to report original empirical findings about Amazonian development. Our aim is rather to model the kind of explicit scalar analysis we advocate by using the insights of current scale theory to retell the narrative of a well-known case in political ecology. We argue that the social processes that have shaped the Brazilian Amazon and its development over the last century have been characterized by a series of shifting scalar arrangements that have yet to be explicitly interrogated in the work on Amazonian development. Our narrative takes these scalar arrangements as its specific object of inquiry; it analyzes how they were fixed, unfixed, and re-fixed in a process of continual political struggle, and it develops how particular political interests pursued these scalar arrangements to achieve their specific agendas.

There are of course many social processes that shape Amazonian development. Processes such as decision-making authority, state power, capital flows, shifting demand in commodity markets, social movement resis-

tance, and the environmental value placed on the rain-forest all play a role in development. Each of these processes (alone and in combination) has been continually rescaled by various political interests struggling to advance their agendas. In order to make our narrative manageable, we focus our attention on how *decision-making control* over Amazonian development has been scaled, unfixed and rescaled through political struggle. Because these various social processes are in fact deeply intertwined (e.g. the World Bank's control of investment capital gives it considerable ability to control decision-making in development), our story will necessarily also touch on social processes other than decision-making control.

Early in the 20th century, control over Amazonian development decisions was organized dominantly at sub-national regional scales. Beginning in about 1930, Brazilian state power was rescaled from a predominantly regional arrangement toward a predominantly national one, and this national-scale state power allied with capital and market forces at more international scales to take the lead in shaping development in the Amazon. In the last few decades, there has been a significant shift away from this national-international hegemony and toward relatively more local-international arrangements. More so than in the past, direct producers whose activities are organized at relatively more local scales (e.g. producers that form cooperatives) work in alliance with both international capital interests (World Bank, IMF, TNCs) and international NGOs (World Wildlife Fund, Friends of the Earth) to make the decisions that shape the course of development in their immediate area. Following arguments in political economy, we term this last shift a "glocalization" of the control over development in the Amazon, and it constitutes the main focus of our narrative.

This recent glocalization of decision-making has been the object of much attention among political ecologists, but they have generally not explicitly analyzed its scalar properties. Moreover, because it has not engaged the theoretical principles of the politics of scale, political ecology has been vulnerable to the local trap: it tends to embrace uncritically the localization of decision-making that glocalization entails, assuming that such a transfer will tend toward socially and ecologically desirable outcomes. Against the local trap, we use the politics of scale to see glocalization as a strategy, as a socially constructed attempt to pursue a particular set of agendas. When we start with the assumption that there is nothing inherent about scale, we cannot assume a priori what social and ecological outcomes rescaling will have. Instead, we must recognize that the outcomes of a particular rescaling depend on the agenda of the political interests who produced and benefited from it. Therefore, in order to understand and critically evaluate the ongoing glocalization of control over development in the



Amazon, research must carefully interrogate the political interests and agendas of those who have benefited from it (Swyngedouw, 1997b).

#### 4.1. *The era of the regions (1890–1930)*

Before we tackle the question of glocalization, we set its historical context by briefly discussing the shift from regional-scale to national/international-scale decision-making. During Brazil's Old Republic, which lasted from 1890 to 1930, the polity operated under extreme constitutional decentralization, whereby certain regional economic interests enjoyed considerable autonomy for their areas of operation. A national state did exist, but its ability to dictate policy to the regional elite was relatively weak. The important regional economic interests were organized around commodity production: rubber in the north and coffee in the southeast. The weak national polity allowed the rubber and coffee barons to tightly control their regional governance and therefore control decisions about their commodity and its production. Moreover, the scalar control was financial: regional interests benefited because regional states could retain a great proportion of taxes levied on exports (Weinstein, 1983). This period of marked regionalism, known as the "politics of the states," was symbolized by the tradition of flying state flags over statehouses instead of the national flag (Burns, 1993, p. 266).

In Brazil's north, rubber interests fashioned a regional scale for decision-making control based on the geography of rubber production. Between the mid-1800s and about 1913, they used this control to bypass the national-scale state and link up directly with rubber markets that were more international in scale. The result was one of the largest economic booms in Amazonia's history. Tellingly, this regionally controlled arrangement to extract rubber from the Amazon resulted in little removal of vegetation cover. Rubber was extracted by means of a geographically extensive system that caused relatively little disturbance to the forests. The rubber barons relied on recruiting labor from Brazil's poor Northeast to extract latex from natural stands throughout the vast Amazon Basin. As long as sufficient labor could be recruited, it was not in the rubber barons' interest to use a different, more geographically intensive (plantation) system of rubber production. That method would have required substantial capital investment to mitigate numerous ecological problems associated with intensive plantation rubber in Amazonia.<sup>9</sup>

Coffee interests in the Southeast developed a similar scalar arrangement. The coffee producing region of Brazil extended across the states of São Paulo and Minas Gerais in the Southeast (Weinstein, 1983), and coffee barons were able to construct a regional scale of control based on this geography. They were able to control the relevant state governments, setting regional policy and capturing taxes on coffee exports. As with rubber, the coffee elite was able to bypass the national-scale state and connect directly with international-scale coffee markets (Prado Júnior, 1987). Such bypassing, of course, did not mean that a national scale did not exist. In fact, the coffee oligarchy enjoyed command of national currency and export policies that favored its interests above all others. This regional-international arrangement produced high rates of economic growth in the Southeast during the coffee boom, which lasted from the late 1800s to the Great Depression, while the rest of Brazil's economy remained relatively stagnant. However, in great contrast to the rubber boom, which featured a very similar scalar arrangement, extreme environmental costs accompanied coffee production. The coffee boom in southeastern Brazil involved one of the most extensive ecological transformations in Latin America (Dean, 1995). Because it is an Old World crop, there was never any opportunity for coffee to be harvested from natural stands. First using slave labor and later European immigrant labor, coffee planters continually removed existing land cover—Atlantic rain forest along the coast and drier forests further inland—to maintain and raise production levels. Because planters could continually gain access to more land, it was not in their interest to invest in maintaining the fertility of soil in older plantations. As soil failed, planters simply moved or expanded plantations into new areas, altering land cover along the way (Stein, 1957). Against the local trap, this narrative of rubber and coffee suggests that similar scalar arrangements can produce very different environmental outcomes. The key is not the scalar arrangement itself, but the specific political, economic, and ecological details of each group's project. Local (or regional) arrangements can be ecologically disruptive just as easily as they can be ecologically sustainable, depending on whose interests they favor.

#### 4.2. *Vargas and the Brazilian military: forging a dominant national scale (1930–1964)*

During the later years of the coffee boom, groups without power viewed the coffee barons with suspicion, believing their interests too regional and selfish. Industrialists, middle classes, intellectuals, and a growing group of idealistic military officers called for a government that did not revolve so heavily around southeastern regional interests (Wirth, 1970). In order to

<sup>9</sup> Rubber is native to the Amazon, so when densely spaced in plantations, the trees succumb easily to natural pathogens (Dean, 1987).

challenge the southeastern grip on power, these groups worked to re-scale state power in Brazil by forging a hegemonic national scale based on national-state territory. A nationalist vision of Brazil's cultural and historical unity provided ideological support for their project. By force, the military installed Getúlio Vargas as president of the republic in 1930. Vargas's rise to power initiated a fundamental shift in the scale at which both the Brazilian state and Amazonian development were controlled. Vargas articulated a strongly nationalist and authoritarian strategy for the Brazilian state and for Amazonian development (Bak, 1983, 1985). He dismissed existing legislative bodies at regional and municipal scales and installed his own appointees in their place. The military pushed proposals for national-state intervention in a range of policy arenas formerly controlled by the regions—anything to emphasize the national interests over regional ones (Burns, 1993). Under Vargas distinctly national political parties were formed for the first time, as a means of displacing parties that were concerned primarily with regional political agendas (Skidmore and Smith, 2001). This rescaling project culminated in 1937 when Vargas canceled the presidential election, dismissed Congress, and took power for himself in a new government called the *Estado Novo*. It was founded at a ceremony in Rio de Janeiro where the state flags were burned as a symbol of the centralizing force of the new constitution (Flynn, 1978).

As part of Vargas's emergent national project, he called for the expansion of Brazilian national civilization westward into Amazonia (Hecht and Cockburn, 1990; Vargas, 1938–1941). Inhabiting and developing the Amazon helped concretize Vargas' vision of a national territory for Brazil (Burns, 1993). His call for a "March to the West" initiated the geopolitical ideology of the later Brazilian military that would be based strongly on the writings of General Golbery do Couto e Silva (Silva, 1967). Amazonia was seen as a vast, unpopulated region with immense agricultural and natural resource potential that would be crucial in providing raw materials for an industrializing national economy (Hecht and Cockburn, 1990). Vargas and the military worked to integrate the territory into the Brazilian economy. Moreover, the march to the west would make it easier for the military to control territorial threats from neighboring states and quash potential communist insurgencies in the vast jungle region (Burns, 1993).

Despite the dominant role for Vargas and the national-scale state, however, this was not solely a national-scale project. The nationalists did not control the capital necessary to implement their development goals in Amazonia and elsewhere. They needed financing from internationally organized capitalist interests, and the international-scale geopolitics of WWII created

an opportunity to meet that need. Rubber had great strategic importance, and with Japan's success in the Pacific, the allies could not depend on Malaysian rubber production. Vargas exploited this situation by announcing the so-called "Battle for Rubber," an economic growth strategy for Amazonia based on a revival of the rubber economy (Hecht and Cockburn, 1990). The plan gave the Allies a share of control over the rubber produced in exchange for millions of dollars in development funds. Vargas funneled the money to national development initiatives in the Amazon and elsewhere (Hecht and Cockburn, 1990). Vargas' specific agenda for the Amazon was to tame it, to harness its energy and resources in the service of the nation and the national state. His agenda was thus to radically transform and humanize the landscape. It was this agenda, rather than the particular national-scale character of Vargas' strategy, that drove the transformation of the Amazon. This agenda continued into the 1960s and 1970s, as subsequent military dictatorships used a national-scale strategy to tame and develop the Amazon.

#### *4.3. Military dictatorship, POLONOROESTE, and consolidation of the national scale (1964–1984)*

After a series of coups and attempted coups, the military took overt power of the country for 21 years beginning in 1964, when it perceived that then-president João Goulart's social reform agenda represented a communist threat to the nation. Drawing on US support, the military established a strict authoritarian state and opened the country to greater international investment to fuel its strategy of rapid industrialization and economic development (Stepan, 1977; Seabra, 1993; Santos and Silveira, 2001). Developing the Amazon was a critical part of this project, since the generals wanted to integrate Amazonia into the political and economic fabric of national territory. The military's strongly national project offered locally and regionally organized interests little option but to operate within and follow national government directives. The military quickly purged all federal bureaucracies, including those charged with Amazonian development, of what it viewed as corrupt civilian authorities. It replaced them with military officers sworn to forward national goals. Capitalists from Brazil and overseas responded to the military's strong incentives to invest in Amazonia. To spur development across such a large territory, the federal government targeted its incentives and spending at strategic development poles with hopes that multiplier effects would eventually link the poles and form corridors of spontaneous economic development throughout the territory. It began construction of major new highways (the Belém-Brasília, the Cuiabá-Porto Velho, the Transamazon, and the Northern Perimeter Highways) that

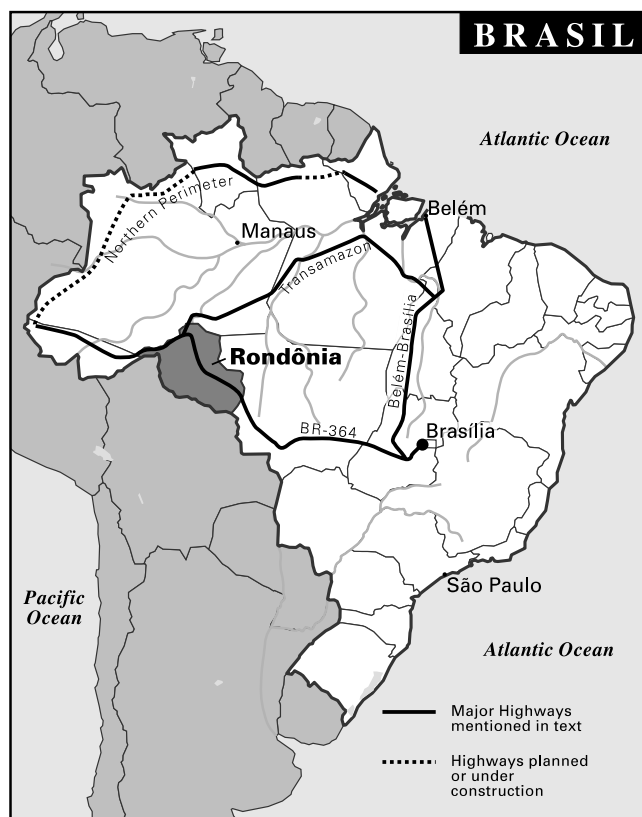


Fig. 1. Location of Rondonia, Brazil, cities and highways.

staked out a new territorial extent for the military's project, integrating the Amazon with the populated South for the first time in history. Agricultural colonization projects dotted the flanks of the new highways, and the government granted large 50–100 ha plots to thousands of families that moved to the region (see Fig. 1) (Hecht and Cockburn, 1990).

It is important to be clear that the military did not simply fill a pre-existing national scale with roads and farms and ranches. Rather their development projects were an effort to refashion and enlarge the territory under their control. They expanded and deepened the power of the national-scale state as a strategy to consolidate their political power over rival interests. It is also important to stress that while the generals' enjoyed significant control over more local interests, their project for Amazonian development was embedded in other, more internationally scaled projects designed to promote a project of "development" across the global South. For the Brazilian military to accomplish its ambitious goals of national integration and development, it required material, services, equipment, expertise, and money that were amassed at scales beyond the national. Much capital was provided by organizations whose operations were international in scope. The World Bank, for example, supplied an important portion of the money the military borrowed (Forero Gonzales,

1990).<sup>10</sup> World Bank projects, in turn, helped fuel the interests of transnational corporations that received contracts to perform much of the infrastructure development for the projects. The interests of the Brazilian military and those of international capital coincided well with respect to development plans for Amazonia. The government's agenda was to integrate national territory, ensure territorial security, and to maximize the revenue flowing out of the region. They therefore pursued projects that would develop infrastructure, enable the extraction of valuable natural resources, and transform the forest into settled fields and ranches. Specific international capital factions saw the economic potential in this program, and so they backed the government's development agenda. During this period, decisions about the development of the Brazilian Amazon were made primarily by national and international interests. The agenda of locally and regionally organized interests was significantly less influential.

As we have stressed, it was the agenda of the military and capital, not the scales at which they were organized, that led to unprecedented social and environmental change in the region. The period was marked by increased deforestation and agricultural settlement. In the 1980s, as the national government continued to extend its settlement and development program, it sought new sources of investment to consolidate agricultural settlements, organize production, and improve infrastructure. The notorious project called POLONOROESTE, funded by the World Bank, targeted development efforts at the dynamic, far western frontier in the then Federal Territory of Rondonia, along the border with Bolivia in a region known to have excellent tropical soils for agriculture (Fig. 1). The main components of the development plan included the strengthening of institutions that provided land distribution and titling services to colonist farmers and the improvement of infrastructure with the paving of the main highway BR-364 from Cuiabá to Porto Velho (World Bank, 1981).

As a result of the project, thousands of families from southern Brazil came to the newly opened territory. POLONOROESTE was the leading edge of the now-familiar environmental destruction and social conflict in newly opened Amazonian territories. Because of a lack of timely government assistance to support the

<sup>10</sup> The World Bank is rarely the sole financier of development projects. It often pledges to finance projects only if a significant amount of money can be raised from other sources, especially domestic public or private sources. Nor is the World Bank the only multi-lateral development bank Brazil has borrowed from. Nevertheless, it exerts a great amount of influence when it acts to "match" funds for development projects, and as the major multi-lateral institution in the world economy, it is representative of the international capitalist interests operating to fuel rapid economic growth in developing countries like Brazil.

new migrants, colonist farms failed at high rates. Farmers left their cleared plots to stake out land further in the forest, resulting in violent conflicts with indigenous peoples and rubber tappers (Ministério do Interior, 1976; Ministério do Interior, 1977; Coy, 1986; FAO-CP, 1987; Millikan, 1992). Until 1980, only 3.12% of Rondonia's area had been deforested. By 1985 that figure reached 11.37% (Fearnside, 1989). Evidence of the great social changes accompanying deforestation was the rapid growth in Rondonia's population; in 1970 the population was approximately 111,000, and by the mid 1980s it was over 1 million (Browder and Godfrey, 1997). The remarkable pace of human and environmental change in the region incited a strong backlash against the way development was being done in Amazonia.

#### 4.4. The "glocalization" of Amazonian development (1983-present)

Environmental degradation in Rondonia, and similar results in other so-called "mega-development" projects around the globe, attracted the attention of internationally organized non-governmental organizations (NGOs), mostly environmental and human rights advocates based in the US and Europe (Rich, 1994). As long-time critics of the partnership between national governments and international agents like multilateral development banks (MDBs) and transnational corporations (TNCs), the NGOs criticized the hegemony of this arrangement in making development decisions around the world, arguing it lacked social and environmental concern. To correct these shortcomings in Brazil, they called for what was essentially a "glocalization" of development decision-making. They found allies among "local people" in Amazonia: grassroots organizations who had organized locally and regionally to halt the immediate threats to their traditional livelihoods caused by deforestation (Leroy and Soares, 1998; Perdigão and Bassegio, 1992; Waldman, 1992). Those local interests and the international NGOs called for authority to be transferred away from national governments and toward both a more international (or global) scale and a more local scale. In advocating for more international control, they were not calling for more control for MDBs and TNCs. Rather they advocated a new sort of international scale comprising an alliance among interests in which NGOs played a much more prominent role (World Bank, 1990). Thus their vision for internationalization involved the reformulation of the international scale and the political and economic interests which operated at that scale. Their vision for localization called for a devolution of decision-making and economic power from MDBs, TNCs, and national governments to groups whose operations were relatively more local in scale. In the case of Rondonia that meant indig-

enous groups, rubber tappers, colonist farmers, and *ribeirinhos* (floodplain dwellers), whose agendas had until then been poorly represented at the national and international scales.

Thus the "rain forest crisis" and its solutions were marked by a specific political campaign of rescaling designed to reduce the influence of a mega-development agenda and increase the control of those who favored smaller projects that were sensitive to both environmental and social justice. The campaign was greatly aided by partnerships between NGOs and locally organized grassroots organizations around the world. In the Amazonian case, the first-world public empathized with well-spoken Brazilian organizers, both indigenous and non-indigenous, who traveled to the global North to call for devolution. Invited by the NGOs, they met face-to-face with US legislators and MDB officials, arguing that mega-development was spoiling their forest and killing their people. The alliances made during the campaign between local grassroots organizations and the international NGOs tended to bypass the Brazilian government, which argued that such arrangements did not respect Brazilian sovereignty (Rich, 1994).

The anti-megadevelopment campaign succeeded in prompting the World Bank to confront the environmental and social costs of development in Rondonia, and in April 1985 the Bank halted payment on \$209 million of disbursements for POLONORESTE. The NGOs' strategy also created new lines of communication between actors; the US Congress (an important source of funding for the World Bank) demanded that the Bank keep Congress, the Treasury, and the NGOs directly informed concerning the situation in Rondonia (Schwartzman, 1986). The demand for change in development practice and control led to a landmark speech by then World Bank President Barber Conable, in which he acknowledged the World Bank's problematic environmental and social record: "if the World Bank has been a part of the problem in the past, it can and will be a strong force in finding solutions in the future" (Rich, 1989). New World Bank documents announced environmental policies as part of a Bank-wide restructuring (World Bank, 1988).

In addition to new sectors within the bank charged with review of potential social and environmental problems of new projects, international NGOs and local grassroots organizations were to take a stronger decision-making role in the development process (World Bank, 1990). In the spirit of this new glocal arrangement a series of "environmental projects" were announced. These were programs related directly to the purported improvement of environmental quality and justice in rural and urban areas. One such project was the Rondonia Natural Resources Development Project (PLANAFLORO), designed to mitigate the social and environmental problems caused by POLONOROESTE



(Rich, 1994). World Bank loan disbursements for PLANAFLORO began in 1993. The project funded the promotion of improved natural resource management, better protection of indigenous, rubber tapper, and environmental reserves, socioeconomic and ecological macro-zoning, development of smallholder agroforestry through research and rural credit, socioeconomic and service infrastructure development (Millikan, 1997). The project also met the critics' rescaling demands: it included measures for devolution of control to more local groups. Rondonian grassroots organizations were to participate in project planning, monitoring, and evaluation (Millikan, 2001).

Under the auspices of PLANAFLORO, the international NGOs intensified their involvement with Rondonian organizations, assisting them politically and financially in monitoring the progress of the project. The result was the founding of the Rondonia NGO Forum, an umbrella group of organizations across the state. Within a year of PLANAFLORO's inception, the Forum challenged the plan and called for its suspension, citing numerous irregularities in implementation, particularly the Rondonia government's failure to live up to promises to increase grassroots participation in project decision-making. The newly formed Rondonia NGO Forum submitted a request for a formal review of PLANAFLORO by the Bank's Inspection Panel, and although the World Bank denied the request, the pressure led to negotiations between the Rondonian state government and Forum representatives in 1996. The two reached an agreement to reformulate the project and redirect the remaining US\$110.4 million project funds (Millikan, 1997).

The reformulated project allocated US\$22 million for special sub-projects called PAICs (Community Initiative Support Projects), which allowed local organizations to apply directly for grants of up to US\$150,000 to implement their own development projects in their communities. Granted only to associations of colonist farmers, *ribeirinhos*, indigenous peoples, and rubber tappers, eligible projects included infrastructure development, environmental protection, environmental education, sustainable natural resource management, biodiversity conservation, and promotion of agricultural production activities that fit the ideals of sustainable development (PLANAFLORO, 1997). The new decentralized model of development employed in PLANAFLORO undermined the strongly national-international scale control over Amazonian development that had characterized the period 1930–1984. The scalar rearrangement gave local organizations greater opportunity to bypass state and national level actors to directly link with actors at the international scale, such as the World Bank itself and the large US and European NGOs, who now helped control the resources that would fund the new development agenda (Rich, 1994).

The upshot of this rescaling has been to empower some factions of international capital, some international NGOs, and certain local organizations, while undermining the ability of the Brazilian national state and many TNCs to set development policy. The agendas of those who have been empowered by glocalization vary widely, and each must be evaluated carefully to understand the overall effect glocalization will have on development. Because there is nothing inherent about scale, we cannot assume anything about the overall effect of glocalization on social or environmental justice in the Amazon. The local trap, by contrast, leads observers to assume that the localization aspect of glocalization has an inherent desirability, irrespective of the specific agendas of those empowered by the shift.

We argue that as a general rule, the local trap has had precisely such an effect on political ecologists, who tend to approve of the recent rescaling and to assume a priori that localization will have, more likely than not, positive outcomes for both Amazonian residents and their ecosystems (Gradwohl and Greenberg, 1988; Anderson, 1990; Schmink and Wood, 1992; Hall, 1997; Emperaire, 2000; Hall, 2000). Stone and D'Andrea's (2001, pp. 272–273) account of tropical forest resource use and conservation, for example, argues that

local participation in managing forests not only saves trees; it also leads to improved human rights for many people, especially women, and to fairer, more equitable societies. Those [non-local people] who exploit forests unsustainably have no sense of history, no sense of place, no sense of where the public interest lies.

The argument is that development of a particular area should give significant control to the people living there because they are best able to preserve their environments.

To be fair, the precise nature of the local trap in political-ecological research on the Amazon is less naïve than the preceding paragraph would make it seem. Few researchers would argue that devolution to the local scale or empowerment of local people *always* leads inevitably to desirable outcomes. For example, despite their passionate pleas for devolution, Stone and D'Andrea (2001) admit that “empowering local communities hardly guarantees an easy ride toward stable forests... even if honest and authentic community representatives gain control and local officials show sympathy, there is no guarantee that the forest will be saved” (Stone and D'Andrea, 2001, p. 269). The literature frequently presents cases in which greater local control did not lead to greater sustainability or justice (Schroeder, 1999a,b; Hall, 2000; Hecht, 1994). Nevertheless, on the whole the literature continues to assume that the local is desirable. The sense is that barring some sort of intervening complication, local control *ought* to

lead to desirable outcomes. When local control fails to yield the desired results, the reaction is to search for the intervening complication that counteracted the natural tendency for local control to lead to sustainability and justice. Therefore much research effort is spent explaining the failure of devolution in particular cases (e.g. Schroeder, 1999a,b). But the notion that there is a problem to explain at all is created by the assumptions of the local trap. This *ad hoc* approach is avoided by the premise that there is nothing inherent about scale. If we eliminate the assumption that devolution on its own will tend toward desired outcomes, we are freed of the need to rationalize when it fails. We are instead forced to examine explicitly the agendas of those who are empowered by devolution. Brown's (2001) findings in Rondonia, for example, suggest that a range of activities among colonist farmers promoted as productive conservation may show no material link to forest conservation at all. Rather, he finds that productive conservation merely gives already well-positioned colonist farmers greater access to economic and political power that they may or may not use to promote forest conservation. How they will use that power depends on their particular circumstances and agenda.

## 5. Conclusion

To date, political ecology has lacked a careful theoretical analysis of scale that can provide a way out of the local trap. Those who have expressed reservations about the local scale have so far pursued primarily *empirical* fixes, marshalling detailed case evidence to show that local-scale arrangements do not always turn out to be liberatory or ecologically sustainable (Schroeder, 1999a,b; Zimmerer, 2000). However, this empirical strategy has only mildly tempered the tendency to assume a link between local scales and desirable outcomes. Without a well-developed theory of scale, the default position of political ecology—its intellectual and political instinct—is likely to remain the idea that local-scale arrangements, while not always perfect, are inherently more emancipatory and environmentally sensitive. We contend that political ecology would benefit from a *theoretical* way out of the local trap rather than just an empirical one. A well-developed theoretical argument that scale has no inherent qualities and therefore leads to no particular outcomes eliminates the need to continually re-establish that fact empirically. We have argued that recent work in political economy provides just such a theory of scale. The politics of scale literature argues that scales and scalar relationships are the object and outcome of political struggle; they are, therefore, socially produced. This principle precludes any possibility that local-scale arrangements are inherently more liberatory or sustainable, since such arrangements are pro-

duced contingently through political struggles. The politics of scale research thus provides a theoretical fix for the local trap and for all forms of scalar trap. More broadly, the politics of scale literature can help political ecologists develop a more explicit and careful analysis of scale as an object of analysis that can be paired with ongoing methodological attention to various scales of analysis.

Our case study of development in the Brazilian Amazon is a first attempt to model a political-ecological analysis that fully incorporates insights from the politics of scale literature. We have argued that as the anti-megadevelopment campaign achieves a partial scalar reorganization away from a strong-national arrangement and toward a relatively “glocalized” one, we should expect a new set of agendas to guide Amazonian development in Brazil. It is these agendas, rather than their particular scalar arrangements, which are key to understanding what development outcomes are likely to arise. Because our case study is an early attempt to integrate the politics of scale into a political-ecologic analysis, we do not suppose that it represents the last word on the matter. There remains much work to be done to mobilize the insights of the politics of scale literature and understand how their theoretical principles can inform new forms of empirical research in political ecology.

Moreover, this paper has only articulated a one-way exchange of insight, from political economy to political ecology. Of course, it is critical that the exchange work both ways. Three ways political ecology concerns and approaches can contribute to fruitful work in political economy come to mind. First, political economy has paid far too little attention to the role physical geographic processes play in social relations, and insufficient analytical attention had been paid to the basic fact that the transformation of nature is a fundamental aspect of capital accumulation (Swyngedouw, 2000). Second, the role material ecological processes—and representations of ecological processes—play in the politics of scale is missing in the political economy literature. Many political ecologists could help those in political economy sort out the difference between how the natural world actually operates and how it is represented by actors with particular interests. Third, political ecology's careful and detailed study of human environment relationships, largely in Third World, non-urban areas, can help enrich political economy, which has had an arguably strong First World, urban focus. As geographers continue to explore the complexity of the human experience in a globalized, hyperconnected world, further interchange between political ecology and political economy will no doubt begin to blur the traditional lines drawn between North and South, city and the countryside, and people and the environment. In our view, an important project along those lines would be to inte-

grate the politics of scale perspective with the large literature on ecological scale (currently a focus for Nathan Sayre (2002)). In this paper we have called on political ecologists to engage the insights of the politics of scale literature. Certainly we must also heed Zimmerer's call for more attention to ecological processes in the examination of scale and scalar politics. For too long political economy and political ecology have traveled down separate paths. We contend that the separation has not benefited either tradition, and our plea is for their paths to cross again.

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