Human geography without scale

Sallie A Marston, John Paul Jones III and Keith Woodward[1]

The concept of scale in human geography has been profoundly transformed over the past 20 years. And yet, despite the insights that both empirical and theoretical research on scale have generated, there is today no consensus on what is meant by the term or how it should be operationalized. In this paper we critique the dominant – hierarchical – conception of scale, arguing it presents a number of problems that cannot be overcome simply by adding on to or integrating with network theorizing. We thereby propose to eliminate scale as a concept in human geography. In its place we offer a different ontology, one that so flattens scale as to render the concept unnecessary. We conclude by addressing some of the political implications of a human geography without scale.

key words   scale   global-local   hierarchy   network   flat ontology   social site

Department of Geography and Regional Development, University of Arizona, Tucson, AZ 85719, USA
email: marston@email.arizona.edu

If you see a whole thing – it seems that it's always beautiful. Planets, lives . . . But close up a world's all dirt and rocks. And day to day, life's a hard job, you get tired, you lose the pattern. (Le Guin 1974)

Introduction

Over the past 20 years the concept of scale has been the object of sustained theoretical reflection. Today, the results are being applied in virtually every major subfield, especially in urban, political, economic, feminist and cultural geography, as well as political ecology.[2] Despite the insights that both empirical and theoretical research on scale have generated, however, there is no agreement on what is meant by the term or how it should be operationalized (Herod and Wright 2002; Mamadough *et al.* 2004; McMaster and Sheppard 2004). While there is no necessity for consensus, scholarly positions on scale are divergent in the extreme. Compare these conceptualizations of scale, for example:

a 'vertical' differentiation in which social relations are embedded within a hierarchical scaffolding of nested territorial units stretching from the global, the supranational, and the national downwards to the regional, the metropolitan, the urban, the local, and the body. (Brenner 2005, 9)

the spatial *level*, local, national, or global, at which [a] presumed effect of location is operative. (Agnew 1993, 251, emphasis in original)

platforms for specific kinds of social activity. [Scales] are platforms of absolute space in a wider sea of relational space. (Smith 2000, 725)

with these:

We know that global, national and local scales do not exist as such (they are intuitive fictions . . .). (Smith 2003a, 35)

we may be best served by approaching scale not as an ontological structure which 'exists', but as an epistemological one – a way of knowing or apprehending. (Jones 1998, 28)

There is no such thing as a scale. (Thrift 1995, 33)

Juxtaposed in this way, scale appears to be more than what Andrew Sayer (1992) would call a chaotic conception (although it may be that too: see Howitt 2003). The second set of writers calls into question the very status of scale within the otherwise bedrock domain of ontology. And they are not alone: critical human geography recently has heard from a growing number of theorists who are dissatisfied with the dominant conception of scale, what we here and others elsewhere have defined as a nested hierarchy

of differentially sized and bounded spaces (Delaney and Leitner 1997; Smith 2000; McMaster and Sheppard 2004).

In their efforts to overcome perceived rigidities in this hierarchical version of scale, many recent commentators have turned to network models of social processes (e.g. Cox 1998; Amin 2002 2004a; Dicken 2004; Taylor 2004). Helga Leitner's recent work is illustrative of this turn:

> transnational networks represent new modes of co-ordination and governance, a new politics of *horizontal relations* that also has a distinct spatiality. Whereas the spatiality of a politics of scale is associated with *vertical relations* among nested territorially defined political entities, by contrast, networks span space rather than covering it, transgressing the boundaries that separate and define these political entities. (2004, 237, emphases added)

We agree with Leitner that horizontally networked relations contrast with the vertical hierarchies of scale theory. For reasons that we explain in detail further on, however, we reject recent attempts to produce hybrid, both/and solutions that link hierarchical with network conceptualizations of socio-spatial processes. In a nutshell, our argument is that hierarchical scale comes with a number of foundational weaknesses that cannot be overcome simply by adding on to or integrating with network theorizing. In what follows, we first trace the origin of the social production of scale through a select number of theorists who have developed flexible understandings of local, regional, national and global hierarchies. But, second, we argue that attempts to refine or augment the hierarchical approach cannot escape a set of inherent problems. Third, in place of the hierarchical, 'or looking up', spatial ontology, we offer a flat alternative, one that does not rely on the concept of scale. We conclude by addressing some of the political implications of the arguments presented here.

Complexifying scale

It is difficult to overstate the conceptual transformation of scale from its history as a foundational cartographic and operational primitive (James 1952, 206–7; Bird 1956; Haggett 1965; Haggett *et al.* 1965; Harvey 1968; Holly 1978; see also Lam 2004). This is not the place, however, to review these developments: readers might instead consult Howitt (1993 2003), Delaney and Leitner (1997), Marston (2000) or McMaster and Sheppard (2004). Suffice it to say that, beginning in the mid-1980s, a group of theorists working largely in economic and political geography began to confront what were then mainstream understandings of scale derived from regional geography and spatial science. The earliest challenge to the empiricist conception of scale was made by Peter Taylor (1982), who draped an urban-to-global scalar hierarchy onto Immanuel Wallerstein's world systems model.[3] Looking synoptically since Taylor's early formulation, it is fair to characterize the past two decades as a series of attempts to alternatively complicate and unravel the hierarchy located at the heart of scale theorizing. From the fixed and nested levels of the world systems model – sometimes metaphorically described as a Russian doll construction (Herod and Wright 2002) – to the linkage of both (vertical) hierarchy and (horizontal) networks in more recent work by Amin (2002), Brenner (1998), Leitner (2004) and Taylor (2004), different researchers have nuanced scale in different ways. We cannot engage all of the important writers behind this shift; instead, we limit our account of this trajectory to a handful of figures: first Taylor, for establishing the outlines of what we would today be called a 'socially produced' scalar hierarchy, and then a number of others for their contributions to successively elaborating and unfixing it.[4]

Taylor's 1982 paper is the foundational piece on scale for critical human geography.[5] His 'three-scale structure' model maps: the micro scale of the urban onto the domain of experience; the meso scale of the nation state onto the sphere of ideology; and the macro scale of the global onto the 'scale of reality' – the last derives from a materialist position centred on the world economy.[6] Taylor's pathbreaking work is, for our purposes, significant insofar as (a) he theorizes these levels (urban, nation, global) as separated domains, and (b) he traces their emergence to the expanding capitalist mode of production. He also emphasizes the global as the 'ultimate' scale, the one that 'really matters' (1982, 26). Pertinent for the arguments developed here, the dominance he asserted for the world economy would continue to influence the character of scale theorizing for another 20 years.

Neil Smith expanded upon Taylor's work in the first edition of *Uneven Development*, and since then he has worked consistently to elaborate scale's relationship to the discontinuous and contradictory character of capital (Smith 1984). By complicating capital's moves across space, Smith began to

unstitch Taylor's hierarchical model, opening it up for more extended explanatory formulations. In ways that parallel our own view, he writes in an early essay: 'the hierarchical ordering of scales [is] a certain candidate for abolition in a revolutionized social geography' (1992, 66). Yet, Smith also weighs in with caution (1996) against fetishizing 'spaces of flows' (Castells 1989), arguing instead for a duality of spatial fixity and fluidity consistent with seeing scale as the always malleable geographic resolution of competition and cooperation. Smith has also been important with respect to what has become widely known as the 'politics of scale', for it 'is geographical scale that defines the boundaries and bounds the identities around which control is exerted and contested' (1992, 66, emphasis in original; also Herod 1991). The complexity of these forces can be seen in processes of 'scale jumping', whereby 'political claims and power established at one geographical scale are expanded to another' (2000, 726; see also Staeheli 1994; Miller 2000), or in 'scale bending', in which 'entrenched assumptions about what kinds of social activities fit properly at which scales are being systematically challenged and upset' (2004, 193). Finally, Smith has also worked to build more social and cultural nuance into the previously largely economic model. His theorization of scale escapes the narrow confines of the urban, regional, national and global to incorporate the body and the home (1992 1993; see also Harvey 1998; McDowell 1999) in a connected configuration that highlights the relevance of race, gender, sexuality, disability and disease.

Erik Swyngedouw's significant contributions have been twofold. First, he broadened the theoretical and empirical focus on scale to include questions of nature. By pointing out the ways in which nature and society interpenetrate and 'are constituted as networks of interwoven processes', Swyngedouw shows 'how the social and physical transformation of the world is inserted in a series of scalar spatialities' (2004, 129; see also 1997 2000). His argument is that nature and society operate together in the construction and contestation over 'partially hierarchical' and usually nested spatial scales:

> I conceive scalar configurations as the outcome of sociospatial processes that regulate and organize power relations . . . Scale configurations change as power shifts, both in terms of their nesting and interrelations and in terms of their spatial extent. In the process, new significant social and ecological scales become constructed, others disappear or become transformed. (2004, 132–3)

Second, Swyngedouw's emphasis on political-ecological 'gestalts' is premised on the understanding that shifting and contested scalar configurations are neither entirely local nor global but operate by way of networks that are always simultaneously 'deeply localized' as well as being extensive in their reach. And yet, while the term suggests that one scale cannot exist without the other and that scalar configurations are essentially network-based, the verticality of his scale formulation remains.

One of Neil Brenner's popular inputs into the social production of scale is the concept of 'scalar structuration'. As the Giddensian origin of the term suggests, scalar structurations are predicated on the relationships *between* scales; they 'involve relations of hierarchization and rehierarchization among vertically differentiated spatial units' (Brenner 1998, 603). In fact, Swyngedouw's use of the concept 'glocalization' (1997) is an illustration of the process of scalar structuration, wherein the current round of globalization is conceptualized as a re-scaling process in which cities and states are reterritorialized to produce 'glocal' scalar fixes.[7] In a move toward complicating scale production even further, Brenner sets out the principles underlying scalar structurations and the dynamics that drive specific morphologies, arguing for the importance not only of vertical hierarchies but also horizontal 'interscalar networks':

> *Scales evolve relationally within tangled hierarchies and dispersed interscalar networks*. The meaning, function, history and dynamics of any one geographical scale can only be grasped relationally, in terms of upwards, downwards and sidewards links to other geographical scales situated within tangled scalar hierarchies and dispersed interscalar networks . . . Each geographical scale is constituted through its historically evolving positionality within a larger relations grid of vertically 'stretched' and horizontally 'dispersed' sociospatial processes, relations and interdependencies. (2001, 605–6, emphases in original)

Here and elsewhere in Brenner's recent work (2005) the vertical hierarchy is linked to the horizontal network, where other sociospatial processes, relations and interdependencies are in operation. The addition of horizontal processes to the vertical model is, of course, significant as it signals a desire to locate social processes. And yet, Brenner continues to assume that social processes flow up and down a socio-political and territorially framed spatial scaffold. Typical in this regard is his view that:

These scalar fixes for capital position each geographical scale [urban, regional, national, global] within determinate hierarchical patterns of interdependence and thereby constitute relatively fixed and immobile infrastructures of territorial organization for each historical round of capital circulation. (1998, 161)

A different sort of challenge to scale rigidities is found in the work of those who, while likewise not entirely jettisoning the concept, focus on 'the local' as an entry point to understanding 'broader' processes, effectively examining scale from underneath. One representative group is Kevin Cox and his colleagues. They extend Smith's concept of 'scale jumping' by specifying not only how local states operate beyond jurisdictional boundaries (Cox and Mair 1988 1989 1991; Jonas 1994), but also how we might better view the politics of scale through networks of associations that are uneven in their areal extent (see Low 1997; Cox 2002). Cox specifies these laterally conceptualized networks through the related concepts of 'spaces of dependence' and 'spaces of engagement' (Cox 1997 1998; Cox and Wood 1997). Spaces of dependence 'are defined by those more-or-less localized social relations upon which we depend for the realization of essential interests and for which there are no substitutes elsewhere'; these unfold within spaces of engagement, which are 'broader sets of relationships of a more global character . . . [that] constantly threaten to undermine or dissolve' spaces of dependence (1998, 2).

The local is similarly foregrounded in the work of Richie Howitt (1993 1998 2003). Early on he rejected scale as a nested hierarchy that 'assumes or implies that the sum of all the small-scale parts produces the large-scale total' (1993, 36), insisting instead that scale relations be conceptualized as operating in a dialectical fashion, 'multi-directionally and simultaneously', 'between and within' various scales. This conceptualization enables Howitt, like Swyngedouw, to recognize the local not as distinct from other scales, but as 'containing important elements of other geographic scales', thereby achieving a more 'complex [understanding of the] interpenetration of the global and the local' (1993, 38). Howitt deploys his 'relational' conceptualization of scale as part of a larger commitment to social justice, indigenous rights and cultural diversity; as he puts it,

the social and political construction of scale is precisely [about] social action . . . [that seeks] to mobilize social networks, political institutions, economic resources and

territorial rights to the task of creating new geographies – new landscapes of power and recognition and opportunity. (2003, 150)

Doreen Massey, while aiming primarily to address theories of space and place (1994 2004), offers a conceptualization of the local and global that is highly pertinent to theories of scale. She has repeatedly insisted that just as the local is grounded, concrete and real, so too is the global. Massey builds her argument around a reconceptualization of the local, 'dispersed in its sources and repercussions' (2004, 7). The local's relationship to the global is premised on a politics of connectivity – 'power geometries' – that recognizes and exploits webs of relations and practices that construct places, but also connect them to other sites. Massey's political project is about recapturing agency so as to better address the impacts of globalization as they affect connected places.[8] She understands places as highly differentiated, with different levels of connectivity to each other as well as to wider political and economic processes:

'places' are criss-crossings in the wider power-geometries which constitute both themselves and 'the global'. In this view local places are not simply always the victims of the global; nor are they always politically defensible redoubts *against* the global. For places are also the moments through which the global is constituted, invented, coordinated, produced. They are 'agents' *in* globalization. (2004, 11, emphases in original)

In summary, the authors we've discussed above have offered numerous elaborations that, over time, have presented geography with ever more complex and pliant accounts of scale. We find at the base of all these corrections and extensions, however, a foundational hierarchy – a verticality that structures the nesting so central to the concept of scale, and with it, the local-to-global paradigm. In the next section we turn to what we see to be some of the major problems associated with this line of thought.

Critiquing scale

Let's begin with what should be rather obvious at this point: there are three choices we have for thinking about scale. We can, first, affirm hierarchical scale and, to the extent that it fails to capture the myriad socio-territorial configurations we encounter, augment it with some other concept(s); second, we can develop, as others have attempted to do, hybrid

models that integrate vertical and horizontal under-standings of socio-spatial processes; and third, we can abandon hierarchical scale in its entirety and put in its place some alternative. Here we opt for this last choice.

Our first reason for doing so is largely definitional and operational: there is substantial confusion surrounding the meaning of scale as *size* – what is also called a horizontal measure of 'scope' or 'extensiveness' – and scale as *level* – a vertically imagined, 'nested hierarchical ordering of space' (Howitt 2002, 305). Many commentators on scale make note of their conflation (e.g. Brenner 1998; Howitt 2002; Leitner 2004; McMaster and Sheppard 2004; Taylor 2004), but to our knowledge no one has pushed the difference to its limits, wherein one of the terms might be simply and effectively collapsed into the other.

In our view, there are insufficient grounds to maintain the distinction. To illustrate, consider Table I in which we offer a list of geographic terms drawn from the scale literature, sorted according to the horizontal and vertical distinction. The terms on the left hand side of the table draw one's vision downward and outward; those on the right hand side point upward and onwards. Thus space from the perspective of horizontality unfolds as chunks of 'ground', while from the vertical perspective geographies are etched from shadows cast from above. Importantly, both versions imply 'reachings' across space that are distinguished not by their unique parcelling of territory but by the different vantage points – below and above – from which those territories are imagined. And arguably, if the difference between the horizontal and vertical terms rests solely upon the 'point of view' from which space is marked, then there is no added value in maintaining their separation.

But if they do the same work, then which of the concepts should be collapsed into the other? In a

Table I Spatial associations of the horizontal and vertical

Horizontal geographies	*Vertical geographies*
Network	Scaffold
Extensive	Layered
Horizon	Summit
Distance	Elevation
Milieu	Dominion
Dispersed	Stacked

response to this paper, Gerry Kearns argued on behalf of maintaining the language of hierarchy:

> Hierarchies are created and then events at one named level provide the conditions of existence for events at other named levels. Events at the level of parliament are named national, and they provide the conditions of possibility or conditions of constraint upon events that are oriented to narrower spatial remits, such as a neighborhood. Of course, the reverse is also true, so-called national events have conditions of existence that must be met in neighborhoods (as in voting, for example, as a source of legitimacy), or in international arenas, as in international trade agreements. A purely horizontal analysis would I suppose treat international fora as not different in kind to neighborhoods yet the nesting seems to be imposed by legal, juridical and organizational structures without our having to accept the legitimacy of the hierarchy that did the ordering (and thereby confuse is with ought). (Kearns personal communication 2004)

We agree with Kearns about the power of naming hierarchies. Indeed, it is the stabilizing and deli-miting effects of hierarchical thinking – naming something 'national', for example – that calls for another version of the 'politics of scale': the need to expose and denaturalize scale's discursive power (in the same way that Don Mitchell did for 'culture', 1995). As Katherine Jones has remarked:

> Once we accept that participants in political disputes deploy arguments about scale discursively, alternately representing their position as global or local to enhance their standing, we must also accept that scale itself is a representational trope, a way of framing political-spatiality that in turn has material effects. (1998, 27)

Acknowledging the existence of scale as an epis-temological ordering frame, however, is not the same as claiming it to exist as a nesting of 'legal, juridical and organizational structures' – and this is where we part from Kearns. For one encounters these 'structures' not at some level once removed, 'up there' in a vertical imaginary, but on the ground, in practice, the result of marking territories horizont-ally through boundaries and enclosures, documents and rules, enforcing agents and their authoritative resources.[9] Geographies of extension highlight these geopolitical practices of space making and, if anything, should help us be more rather than less attentive to the concrete operations of the scalar epistemology.[10] And, if 'scale is a representational practice deployed by participants in struggles, a practice situated within a community of producers and readers who actively negotiate and construct it'

(Jones 1998, 27), then after some 30 years of critical geography we certainly should have the theoretical and political tools at our disposal to deconstruct or otherwise analyse its deployments.

Second, we note the difficulty if not the impossibility of disentangling scalar hierarchies from a 'Trojan horse' – the micro–macro distinction in social analysis (Layder 1994) – and its army of affiliated binaries. It is easy to see how this fundamental opposition could enter into the terrain of scale theorizing, for in one sense the local–global distinction is merely the spatial version of micro–macro. But the opposition brings with it not only a long history of atomistic vs holistic thinking, for smuggled alongside it are a number of other distinctions that circulate in hierarchical thought. Within political theory, for example, nineteenth-century differences between (classical) liberalism and conservatism (see Mannheim 1936) have morphed into contemporary distinctions between global cosmopolitanism and such localisms as patriotism, sectarianism and tribalism (see Nussbaum 1996; Hill 2000; Ley 2004).[11] Nor are local and global easily separated from agency and structure, in which subjectively experienced and individually felt thoughts, feelings and actions are held opposed to and to be integrated with objective, broadly operating social forces, relations and processes (Gregory 1981; Giddens 1984). Likewise, the theoretical delineations between abstract/concrete and theoretical/empirical are often aligned with the global–local binary (Sayer 1991). And not lastly, we can see scale categories worked on by the differences made between orderliness and determination, on the one hand, and complexity and contingency, on the other hand (Jones and Hanham 1995; Smith 2001, 28). These – and the other oppositions found in Table II – have securely attached themselves to the local–global binary, and it is unlikely that they will loosen their grip simply by introducing the flexibility of networks into our understanding of scale.

One example of this cohesion – the 'global economy' – should suffice. The concept became instantiated into the 1980s lexicon with the arrival of a 'localities research' agenda focusing on the local 'effects' of 'broader-scale economic restructuring' (Cooke 1987; Massey 1994, 157–73). In spite of numerous attempts to redress the language of 'touching down' (by, for example, seeing the local in the global), it is difficult to argue with the claim that, over the past 20 years, political and economic geographers have tended toward macro pronoun-

Table II   A list of conflated binaries

Local	Global
Place	Space
Difference	Sameness
Concrete	Abstract
Experiential	Causal
Agency	Structure
Bordered	Stretched
Static	Dynamic
Sectarian	Cosmopolitan
Defensive	Open
Authentic	Produced
Nostalgic	Developmental
Culture	Economy
Embodied	Anonymous
Here	There
Transformed	Penetrating
Responsible	Detached

Note: Attempts to weave a relational understanding of these two scales would also require a re-imagination of their oppositional associates

cements that assigned the global more causal force, assumed it to be more orderly (if not law-like) and less contingent, and, by implication, relegated its other to the status of the case study. This is why, we believe, localities researchers more often looked 'up' to 'broader restructurings' than 'sideways' to those proximate or even distant localities from which those events arguably emerged. This alignment of economism with 'globe talk' (Robertson 1992; also Amin 2004b) is not uncommon: there seems to be no end of examples in which economic macro-isms are articulated alongside their attendant 'global spaces', while (minor? reproductive?) social practices are cordoned off in their respective localities (or even homes),[12] thereby eviscerating agency at one end of the hierarchy in favour of such terms as 'global capitalism', 'international political economy', 'larger scale forces' and 'national social formations', while reserving for the lower rungs examples meant to illustrate the 'unique manifestations' of these processes in terms of local outcomes and actions, such as 'the daily sphere of the local', 'the urban as the scale of experience' and 'the smaller scale of the local'.[13] What is ignored in these associations is the everydayness of even the most privileged social actors who, though favourably anointed by class, race and gender, and while typically more efficacious in spatial *reach*, are no less situated than the workers they seek to command (also Ley 2004).

Third, hierarchy has become the vertical equivalent of the spatial scientist's 'grid epistemology' (Dixon and Jones 1998), recruiting researchers to its scaffold imaginary. As Howitt noted over a decade ago (1993, 37), levels of scale are in danger of becoming 'conceptual givens', reflecting more the contingency of socially constructed political boundaries and associated data reporting than any serious reflection on socio-spatial processes. The situation is no doubt more predictable today. In spite of Smith, Swyngedouw and Brenner, most empirical work is lashed to a relatively small number of levels – body, neighbourhood, urban, regional, national and global. Once these layers are presupposed, it is difficult not to think in terms of social relations and institutional arrangements that somehow fit their contours. Thus in spite of the efforts discussed above to build complex relational understandings that crisscross these levels so as to forestall such truncations, research projects often assume the hierarchy in advance, and are set up *a priori* to obey its conventions. In short, hierarchical scale is a classic case of form determining content (White 1973), whereby objects, events and processes come pre-sorted, ready to be inserted into the scalar apparatus at hand.[14]

Finally, hierarchical scale is bound to methodological perspectivalism, a God's Eye view leveraged on the Archimedean point of the global from which the world is surveyed (Harding 1987; Haraway 1988; also Amin 2004b) – and from which science derives its cherished norms of objectivity (Natter *et al.* 1995). Levels of scale suggest an epistemological hoist – a methodological leg-up. These aerobatics – implying a transcendent position for the researcher – cannot help but undermine attempts at self-reflexivity. How, we might ask, can a researcher write seriously about situated positionality after having just gone global? Consider instead that Donna Haraway argues for:

> politics and epistemologies of location, positioning, and situating . . . the view from a body, always a complex, contradictory, structuring and structured body, versus the view from above, from nowhere, from simplicity. Only the god-trick is forbidden. (1991, 195)

In responding to Haraway, a scalar researcher might argue that the body-to-globe analytic can be turned back on herself, placing her within a stratified hierarchy that amplifies rather than undercuts reflexive understandings. But this move requires its own complicated acrobatics, wherein the researcher appears to transcend herself in order to self-reflexively position or 'place' herself as a researcher in a global order. By contrast, Haraway suggests a situated methodology, somewhere underneath the 'brilliant space platforms of the powerful' (1988, 191).

In several ways, then, the hierarchical model of scale is found deficient: it does the same heuristic work as its cousins of scope and extension; it is bound to reproduce a small–large imaginary and with that, pre-configured accounts of social life that hierarchize spaces of economy and culture, structure and agency, objectivity and subjectivity, and cosmopolitanism and parochialism; and it cannot deliver engaged and self-reflexive accounts of social life. These problems, we believe, are inherent to hierarchies and cannot be resolved by integrating them with network formulations. For these reasons we elect to expurgate scale from the geographic vocabulary. As will become clear below, however, our critique is not aimed at replacing one ontological–epistemological nexus (verticality) with another (horizontality). Instead, we propose an alternative that does not rely on *any* transcendent predetermination – whether the local-to-global continuum in vertical thought or the origin-to-edge imaginary in horizontal thought. In a flat (as opposed to horizontal) ontology, we discard the centring essentialism that infuses not only the up–down vertical imaginary but also the radiating (out from here) spatiality of horizontality.

Notes for a flat ontology

Having laid out several critiques of scalar approaches that, in one form or another, construct transcendent theoretical models around vertical conceits, we proceed here with notes for an ontology composed of complex, emergent spatial relations. We should state at the outset that we are neither the first to propose a flat ontology (Deleuze 1994; Latour 1997 1999; Spinoza 2000; DeLanda 2002), nor do we feel that what follows is a definitive guide. Our contribution, instead, is to provide a roadmap that opens paths for future work toward an alternative that evacuates a retinue of scalar imaginaries. That is, in contrast to transcendent ontologies and their vertical semiotics of scale, flat ontologies consist of self-organizing systems, or 'onto-genesis' (Simondon 1964 1989), where the dynamic properties of matter produce a multiplicity of complex relations and singularities that sometimes lead to the creation of new, unique events and entities, but more often to relatively redundant orders and practices. We

highlight three key, trans-communicating conceptual zones that reveal the mechanisms necessary for both a coherent and pragmatic flat ontology. Briefly, these consist of: analytics of composition and decomposition that resist the increasingly popular practice of representing the world as strictly a jumble of unfettered flows; attention to differential relations that constitute the driving forces of material composition and that problematize axiomatic tendencies to stratify and classify geographic objects; and a focus on localized and non-localized emergent events of differential relations actualized as temporary – often mobile – 'sites' in which the 'social' unfolds. Composition/decomposition, differential relations, emergent events: none of these suggest a genuinely novel approach to geography, but we find that, in spite of numerous invocations, their various incorporations have been heretofore only partially successful at opening paths to a legitimately flat ontology. Before addressing these components, however, we first turn to a formulation that resonates with ours, but which we find unsatisfying: a horizontal ontology of flows.

Flowsters and other globetrotters

One strategy for countering scalar hierarchies is to replace their structuralist calculus with the language of flows and fluidity. According to this approach, the material world is subsumed under the concepts of movement and mobility, replacing old notions of fixity and categorization with absolute deterritorialization and openness. While we do not find ourselves at odds with the possibilities of flow-thinking *per se*, we are troubled by what we see as liberalist trajectories (absolute freedom of movement) driving such approaches, particularly when these develop alongside large-scale imaginaries such as the global and the transnational.[15] We are often at a loss as to what materiality is grounding these claims to pure flow or absolute deterritorialization. Frequently, it seems that they offer little more than a continuation of the abstract spatial imaginaries they are attempting to supplant. In such cases, conceptualizations of 'global flows' become double abstractions, harnessed *a priori* to a fluid imaginary of pure mobility, while also flying over the materialities they endeavour to explain. That is to say: (a) while things like people, commodities and monies may appear to 'flow' (through, for example, something called the global city), this fluid motion appears to be the conceptual baggage, imported after-the-fact, of statistical aggregations

not only of innumerable movements, but of coagulations and blockages; and (b) theory should not ignore the diverse intermesh of languages and desires; the making of connections between bits of bodies and parts of objects; sentences half-caught, laws enforced prejudicially and broken accidentally: for it is *here*, in the middle of the event – at the sites of singular composition rarely resembling discrete and unitary objects – that one finds the production of social space.

To elaborate both our affirmations and dissensions regarding flow theory, we turn our attention to the recent work of one of its proponents, Richard G. Smith (2003a 2003b). We note two problems with flow theories that surface on different 'planes' in this work: the spatial and the theoretical (or, as we shall explain below, what Deleuze (1994) calls the 'actual' and the 'virtual'). Smith proposes an ontology assembled largely from accounts of actor-network theory, non-representational theory, complexity theory and the philosophy of Gilles Deleuze. Although we do not reject these resources out of hand, in Smith's work we note a particular fetishization of spatial openness that is characteristic of overzealous flow-enthusiasts:

> In contrast to Sassen's [2000] interest in scales, boundaries and territories, my ontology of globalization fluidifies such solidified thinking revolving around such motifs as fluidity and flow, movement and mobility, folds and networks. A consequence of that ontology – where all that is solid melts into air – is a rejection of scales and boundaries altogether as globalization and world cities are too intermingled through scattered lines of humans and non-humans to be delimited in any meaningful sense. (Smith 2003b, 570)

Obviously and in the abstract, we sympathize with Smith's reading insofar as it encourages the dissolution of scalar thinking. We take issue, however, with his reductive visualization of the world as simply awash in fluidities, ignoring the large variety of blockages, coagulations and assemblages (everything from material objects to doings and sayings) that congeal in space and social life. It remains difficult to discern what, if anything, takes the place of these negated objects other than the meta-spatial categories that flow thinking was meant to dissolve. Thus the tendency for global, typological categories – here the 'world city' and 'globalization' – to slip in through the back door: concepts placed under erasure that nevertheless *found* and *ground* the flows that supposedly make them meaningless. In Derridian terms, these scalar concepts, though

removed from the field of spatial relations, are retained as non-relational first terms through which the flows are located and identified (Colebrook 2004, para. 11; see also Harrison forthcoming). We therefore find one more instance wherein the scalar imaginary pops up; in spite of our efforts to throw cold water on what Henri Lefebvre, in a different context, called phallic verticality (1991), the scalar scaffold persists.

By taking care to include room for those blockages missed by a purely flow-based ontology, and while incorporating Deleuze ourselves, we additionally set ourselves apart from Smith's theoretical plane. Speaking of Deleuze and Guattari, for example, he notes:

> The purpose of their philosophy is to counter, desta-bilize, short-circuit any force, power or desire that strives to restrict, capture, fix, manage, redefine, specify or limit the flows that make the world a hotbed of flux and fluidity. In other words, the BwO [Body without Organs] is best thought of as a way of visualizing the city as unformed, unorganized and non-stratified, as always in the process of formation and deformation and so eluding fixed categories, a transient nomad space-time that does not dissect the city into either segments and 'things' (a reductive Cartesianism) or structures and processes (a reductive political-economy). (Smith 2003b, 574)

Within this interpretation we find a second fetish for openness, this time characteristic of selective interpretations of Deleuze and Guattari's philosophical work. While they devote a considerable amount of attention and enthusiasm to 'intensive', potential force relations, these almost invariably resolve themselves within *milieux* composed of a variety of different relations, many of which are not free-flowing and open, but rather redundant, more-or-less controlled and delimited.[16] Deleuze has described these redundancies that help to compose the world as repetitions *with a difference* (1994), but such differences are seldom the actualizations of a genuinely open newness. Furthermore, Deleuze and Guattari (1987) note that their ontology and their politics depend upon this diversity of tendencies within relations to assemble, disassemble and reassemble. Just as blockages and strata can at times appear oppressive, they likewise remind us repeatedly that incautious deterritorializations can be disastrous:

> Every undertaking of destratification … must … observe concrete rules of extreme caution: a too-sudden destratification may be suicidal, or turn cancerous. In other words, it will sometimes end in chaos, the void

and destruction, and sometimes lock us back into the strata, which become more rigid still, losing their degrees of diversity, differentiation, and mobility. (1987, 503)

We take from this cautionary note the simple point that a reductive imaginary of absolutely free flows not only misses the mark ontologically, but also predetermines a narrowed set of epistemological and methodological approaches to the world that potentially promote formations of majoritarian oppression (e.g. the destructive pole of neoliberalist expansion) and minoritarian fascism (e.g. the self-legitimating pole of neoliberalist individualism) (Deleuze and Guattari 1987).

In contrast, we follow an approach – exemplified in diverse ways by Schatzki (2002), DeLanda (2002) and Bonta and Protevi (2004) – that focuses on both material composition and decomposition, maintaining that complex systems generate both systematic orderings and open, creative events. The former, moreover, are far more common than the latter, producing what Deleuze – speaking in terms of art – has called the 'cliché' (2004): the tendency for variations to cluster and become generally repetitive. Leaving room for systemic orders avoids the problems attendant to imagining a world of utter openness and fluidity that inevitably dissolves into problematic idealism. Further, this approach allows us to avoid falling into the trap of naïve voluntarism by embedding individuals within *milieux* of force relations unfolding within the context of orders that constrict and practices that normativize. Put simply, we take heed from the warning that closes out the penultimate plateau of *A thousand plateaus*: 'Never believe that a smooth space will suffice to save us' (Deleuze and Guattari 1987, 500).

A flat alternative

If discarding vertical ontologies requires us to evacuate the epistemological baggage attendant to typologies that 'cover over' the situated complexities of the world (Law 2004), overcoming the limits of globalizing ontologies requires sustained attention to the intimate and divergent relations between bodies, objects, orders and spaces. Given these, we propose that it is necessary to invent – perhaps endlessly – new spatial concepts that linger upon the materialities and singularities of space. Manipulating a term from topology and physics, these consist of localized and non-localized event-relations productive of event-spaces that avoid the predetermination of hierarchies or boundlessness. It is imperative that such a reformulation not reproduce

bordered zones that redirect critical gazes toward an 'outside over there' that, in turn, hails a 'higher' spatial category (a meta-zone or a scaling-up) that would bound them. Instead, a flat ontology must be rich to the extent that it is capable of accounting for socio-spatiality as it occurs throughout the Earth without requiring prior, static conceptual categories.

The beginnings of an approach that negotiates the potential traps we have detailed above surfaces in what Schatzki has called 'site ontology':

> A site is a creature of a different sort from a clearing, a space of possibility, a plenum, or a bounded domain. A site is a context, some or all of whose inhabitants are inherently a part of it . . . The social site, consequently, can be defined more specifically as the site specific to human coexistence: the context, or wider expanse of phenomena, in and as part of which humans coexist. (2002, 146–7)

Schatzki's conceptualization of social sites illuminates dynamic contexts that allow various inhabitants to hang together in event-relations by virtue of their activities. He situates this within contextual *milieux* of tendencies composing practices and orders, noting that 'Things tend not to form random aggregates of continuously metamorphosing matters, but instead hang together as clusters of interrelated determinate stuff' (Schatzki 2002, 1). Whereas we embrace potentialities for creative forms of change and fluidity, we note that these moments are always occurring with varying degrees of organization (i.e. destratifications occur in relation to strata; see Deleuze and Guattari 1987). This broad inclusion of orders within sites allows us to account for the presence and affective capacity of relatively stable objects and practices that continuously draw each other into relation and resurface in social life. Such a strategy avoids misrepresenting the world as utterly chaotic and retains the capacity to explain those orders that produce effects upon localized practices. Thus, for example, a site ontology provides the explanatory power to account for the ways that the layout of the built environment – a relatively slow-moving collection of objects – can come to function as an ordering force in relation to the practices of humans arranged in conjunction with it. Particular movements and practices in social sites are both enabled and delimited by orderings in the forms of arrangements of material objects, including those typically associated with 'nature'. As Schatzki explains:

> nature and the social site are not substantially distinct realms, domains, or worlds. Nature, consequently, is part of the arrangements that constitute the site of the social: Organisms and things of nature number among the phenomena through, around, and by reference to which human coexistence transpires. . . . Social life is infused with nature, around which it is organized and through which it is altered, destroyed, and reestablished. (Schatzki 2002, 181; also Whatmore 2002)

Sites thus require a rigorous particularism with regard to how they assemble precisely because a given site is always an *emergent* property of its interacting human and non-human inhabitants. Seen as a manifold (DeLanda 2002) that does not precede the interactive processes that assemble it, discussion of the site's composition requires a processual thought aimed at the related effects and affects of its *n*-connections. That is, we can talk about the existence of a given site only insofar as we can follow interactive practices through their localized connections.

Deleuze's conceptions of the virtual and the actual provide an animation of the ways that a site might be considered a conduit both for repetitions of similar orders and practices and for the emergence of new, creative relations or singularities. Borrowing from Bergson (1988), Deleuze describes the 'actual' and 'virtual' planes as, respectively, the states of affairs and bodies 'actualized in sensible composites' (Deleuze 1994, 184) within the world, and the vast regime of differential potentialities through which those actualizations resolve themselves.[17] Thus, with regard to the importance that we place upon practices and orders, we describe their instances of articulation as material *actualizations* of *potentialities* that, given other combinations of potential and actual relations, would resolve themselves differently. This relation allows us to emphasize the importance of both the apparently extensive repetitiousness of the world *and* its intensive capacities for change and newness.[18] The virtual, as the regime of potentiality, is the plane of pure or 'intensive' differentials; its 'questions are those of the accident, the event, the multiplicity – of difference – as opposed to that of essence, or that of the One, or those of the contrary and the contradictory' (Deleuze 1994, 188). Put another way, the zone of potentiality is composed not of essences – wherein actualizations would mimic or re-present immaterial, formal entities (e.g. nation, world city) – but of dynamic collections of potential force relations and movements. Deleuze, borrowing from

Neitzsche, describes the movement of the virtual as an affirmation of the continuous play of chance that opens up in a series of dice throws: 'Once chance is affirmed, divergence itself is the object of affirmation' (1994, 198). In terms of actualization, we do not suggest throwing oneself off a mountain (cf. Nemeth 1997), but endeavouring to think of the complex potentialities that inhere in the actualization of event-relations in even the most banal of sites, to make them problematic, complex and dynamic. The virtual, or potentiality, draws the forces of a site into intensive relations that are actualized in extensity. It is thus through the event that we find the expression of the differential in the unfolding of space.

Non/localization should thus not be conceived of as processal articulation of the familiar concept of 'the local', but rather as the *milieu* or site actualized out of a complex number of connective, potential processes. Thus, through the activity of intensive relations, extensive space finds moments of coherence. Part of this *milieu*, we claim, is a two-fold sense in which space contributes to the composition of the site. Within it, spaces are always folded into the object-order, literally part of the context as both order and relata. But, further, the space of the site is also something that is materially emergent within its unfolding event relations. By this, we mean that a social site is not roped off, but rather that it inhabits a 'neighbourhood' of practices, events and orders that are folded variously into other unfolding sites. Thus, its complexity arises as the result of a number of different interacting practices – each potentially connected to other contemporary sites – and orders. Approached as manifolds, neighbourhoods are not discrete, permanent and linked 'locales', but the localized expressions of endo-events and exo-events, the 'inside-of' and 'outside-of' force relations that continuously enfold the social sites they compose. As Grosz explains, 'it is not as if the outside or the exterior must remain eternally counterposed to an interiority that it contains: rather, the outside is the transmutability of the inside' (2001, 66).[19]

But if the endo- and exo-events composing sites draw upon non-essential virtual potentialities, then what descriptive apparatuses do we have for analysing a site's unfolding? Deleuze suggests that, by approaching virtual events as a series of 'problems', we articulate a problematic regime (a collection of singularities or attractors) that develops a field to which its solutions remain immanent (DeLanda

2002; Smith 2003; Bonta and Protevi 2004). By contrast, beginning from a series of set propositions about the nature of actuality – that is, solutions – serves 'axiomatic' ends: 'covering over' problems by manipulating them to find an assumed or pre-established solution. Earlier, we mentioned that scalar approaches provide exemplary cases of form determining content; here we note that such cases reveal themselves as axiomatic strategies where researchers 'solve for scale', allowing scalar thinking to predetermine the fields of its own solvability (Deleuze 1994, 180; see also Smith 2003). How else to explain the endless noodling with the concept, except as a case of 'subordinating problems [the accident, the event, the multiplicity (Deleuze 1994, 188)] to solutions [like glocalization (Swyngedouw 1997) or glurbanization (Jessop 1999)]', 'a practice that effectively hides the virtual, or that promotes the illusion that the actual world is all that must be explained' (DeLanda 2002, 154).

For a flat ontology concerned with both the world's very real potentialities and actualities, we suggest reconsideration of what's 'problematic' about spatiality. Site approaches are appealing to us because, by leaving the emergence of space folded into its own intimate relationalities, we are aided in resisting the attempt to cover over or predetermine – analytically or empirically – its contents. In the spirit of this project, we suggest an approach that begins with the recognition that scale and its derivatives like globalization are axiomatics: less than the sum of their parts, epistemological *trompes l'oeil* devoid of explanatory power.[20] In contrast, a flat ontology problematizes a world in which 'all contemporaneous lives' (Schatzki 2002, 149) are linked through the unfolding of intermeshed sites.

Conclusion

We conclude our assessment of scale in human geography by considering some of the political implications that attend our effort to supplant the hierarchical model with a flat alternative. At the outset, we emphasize our agreement with Peter Taylor and the other scale theorists we have discussed: there is a politics to scale, and whether we engage it or abandon it can have important repercussions for social action – for how best to link social movements, for identifying cracks in perceived 'armours', and for highlighting social alternatives. We part company with vertically oriented scale theorists,

however, by maintaining that hierarchical scale (de)limits practical agency as a necessary outcome of its organization. For once hierarchies are assumed, agency and its 'others' – whether the structural imperatives of accumulation theory or the more dynamic and open ended sets of relations associated with transnationalism and globalization – are assigned a spatial register in the scaffold imaginary. Invariably, social practice takes a lower rung on the hierarchy, while 'broader forces', such as the juggernaut of globalization, are assigned a greater degree of social and territorial significance. Such globe talk plays into the hands of neoliberal commentators, like Thomas Friedman. In his popular account of outsourcing (e.g. Friedman 2004 2005), the standard trope – at least 'at home' – is to shift blame 'up there' and somewhere else (the 'global economy'), rather than on to the corporate managers who sign pink slips. In this fashion 'the global' and its discursive derivatives can underwrite situations in which victims of outsourcing have *no one* to blame, a situation possibly worse than blaming oneself. The same macro-mystification is discursively available for managers, who when submitting to interviews about outsourcing, are likewise eager to appropriate 'globalization' in relieving them and their corporation of social responsibility. We do not deny that the contexts for these sorts of corporate decisions are not spatially extensive – indeed, the social sites of boardrooms depend upon a vast distribution of resonating social sites, all 'diversely invested' in practices and orders, employees and ledgers. But the imaginary transposition from boardroom to global corporation obscures those sites of ordering practices, as well as the possibilities for undoing them.

The failure to assign a 'home' to globalization has at least two other problematic implications, both of which evacuate the possibilities of dynamism and efficacy in everyday practice (de Certeau 1984; Smith 1988; Mitchell *et al.* 2004). The first is found in the potential of non-capitalist economic practices. JK Gibson-Graham's work (2002 2004) is the most developed illustration in geography of the hegemonic hold possessed by 'capitalist economic globalization'. They argue that the current intellectual preoccupation with globalization blinds us – researchers, policymakers and laypeople – to the ways 'global' discourses produce identities that disempower us as agents. In a move that opens up a whole new world of political possibilities, they exhort us

to think not about how the world is subjected to globalization (and the global capitalist economy) but how *we are subjected* to the discourses of globalization and the identities (and narratives) it dictates to us. (2002, 35–6, emphasis in original)

Calling this process 'resubjectivation', Gibson-Graham means to recover the local as a site of significant practices that have the potential to upset the 'capitalocentric discourse of globalization'. The second and related implication is the politically transformative potential of social reproductive practices (Marston 2004; Mitchell *et al.* 2004). The 'messy, fleshy' components of social reproduction, as Cindi Katz has argued, are easily rejected as too diffuse or inconsequential for either geopolitical engagement or for understanding the foundations of globalization (2001, 711). Yet, by ignoring or devaluing these diverse and varied worlds of social life, we lose theoretical and practical purchase on the very places where ideas are formed, actions are produced, and relationships are created and maintained.[21]

In conclusion, we are convinced that the local-to-global conceptual architecture intrinsic to hierarchical scale carries with it presuppositions that can delimit entry points into politics – and the openness of the political – by pre-assigning to it a cordoned register for resistance. We have made an argument for studying humans and objects in their interactions across a multiplicity of social sites. It seems to us that horizontality provides more entry points – conceived as both open multi-directionally and unfolding non-linearly – for progressive politics, offering the possibility of enhanced connections across social sites, in contrast to the vertical model that, despite attempts to bob and weave, is in the end limited by top-down structural constraints. Not lastly, when it comes right *down* to it, a flat ontology helps theorists 'keep in touch with the states of affairs [we purport] to describe' (Schatzki 2002, xix). And if, as Le Guin says in our opening epigraph, we lose the beauty of the 'whole thing' when we downcast our eyes to the 'dirt and rocks', at least we have the place – the only place – where social things happen, things that are contingent, fragmented and changeable.

Acknowledgements

opportunity was the major impetus to our under-taking the collaboration that produced this paper. Many people provided comments and criticisms of this paper. We would especially like to thank Deborah Dixon, Andrew Jonas and Ted Schatzki for exceptionally close and thoughtful readings. Ben Anderson, Paul Harrison, Miranda Joseph, Gerry Kearns, Victoria Lawson, Sue Ruddick, Dereka Rushbrook and Sara Smith provided comments, help and inspiration. We presented versions of this paper at Oxford University, in the 'Sex, Race and Globalization' colloquium series at the University of Arizona, and at the 2005 annual meeting of the Association of American Geographers in Denver. We thank members of the audiences and our AAG discussants, Helga Leitner, Neil Smith and John Protevi for their challenging questions and com-ments. Some of the work on this paper was under-taken when we were fellows at the Helen Riaboff Whiteley Center in Friday Harbor, Washington. We thank our hosts for providing us the space to think and write.

Notes

1 Authorial order by height.

2 We restrict ourselves in this paper to examining theories of scale in critical human geography. While significant attention has been paid to scale in physical geography (see Bauer *et al.* 1999; Phillips 1999 2004; Summerfield 2005), we cannot thoughtfully treat those undertakings here. For a recent overview of scale theory in both physical and human geography, see the essays in E. Sheppard's and R. McMaster's edited volume, *Scale and Geographic Inquiry* (2004).

3 To 'drape' might not sufficiently capture the analytic separation between the vertical and horizontal rela-tions that underpinned Taylor's model. Pertinent to the arguments developed here, he wrote: 'In Waller-stein's spatial model of the world-economy this separation is by area horizontally. Here I propose the existence of another separation using a three-tiered structure but organized in terms of geographical scale vertically' (1982, 24).

4 As more than one commentator has noted, the selec-tive account that follows overlooks several progeni-tive pathways into our current understanding of scale, particularly the influential roles of critical realism, the localities debates and the socio-spatial dialectic – all of which were key to the concept's evolution over the past twenty odd years. Our purpose here, however, is not to provide a genealogy but to chart the increasing destabilization of the hierarchical version.

5 The context and impact of Taylor's article is dis-cussed in Dodds *et al.* (1997).

6 Taylor's understanding of materialism is that 'political institutions and ideas cannot be understood as separate from the underlying material needs of soci-ety' (1982, 15). Materialism is thus linked to political economy as 'the tight integration of the historical with the social, economic and political in a single framework' (1982, 16).

7 This notion of a 'scalar fix' appears widely in the scale literature and can be credited to David Harvey, who has argued that 'a tendency towards . . . a struc-tured coherence to production and consumption within a given space – a spatial fix – is critical to capital accumulation' (1982, 424).

8 A recent paper by David Ley (2004) provides an insightful complement to Massey and others who are calling for more detailed assessments of the local against the master discourse of globalization. Ley uses Michael Peter Smith's reconsideration of global cities as transnational cities (2001) to argue that, in a 'transnational paradigm, the global and the local may dissolve into closely related versions of each other' (2004, 156). He shows how the everyday lives of trans-national executives and cosmopolitan local people – especially with respect to their values, anxieties and desires – are not lived as a globalization discourse would predict.

9 The claim we are making here should resonate with those familiar with both state and organizational theory. Researchers in both areas have long questioned the ontological status of their respective 'objects'.

10 Speaking of boundary making, it is worthwhile to note that a comprehensive assessment of scale theo-rizing in relation to border theorizing (van Houtom *et al.* 2005; Welchman 1996) has yet to be written. Here too it seems to us that the horizontal version helps: it makes clearer the distinctions between exten-sivity, on the one hand, and the bordering of space, on the other. For this reason alone some degree of conceptual orthogonality might be advised, or at least heuristically maintained, at least in advance of that assessment. Put differently, hierarchical scale cum boundary-making invites a mishmash of scalar talk with border talk, and until we can sort out the differ-ences, we might as well use extensivity and border-ing as conceptual separates. This is, in effect, what Cox and his colleagues already do when they dis-associate state apparatuses from any particular 'level' in the scalar hierarchy.

11 In David Ley's view, the global is construed 'as a space that is dynamic, thrusting, open, rational, cos-mopolitan and dominant while the local is communi-tarian, authentic, closed, static, nostalgic, defensive (but ultimately defenceless) and the site of ethnic, sexual, regional and other fragmentary identities' (2004, 155).

12 See Brenner (2001), who responded to Marston's (2000) criticism about the oversight of social reproduction within the scale literature. He defended scale theory – and by implication its productivist and economistic leanings – by accusing her of confusing home with a spatial scale, since for him home was a 'place' and not a scale (see Marston and Smith 2001 for a rejoinder). In his later work (2005), Brenner has come to recognize bodies – but still not homes – as a level in the scalar hierarchy.

13 All of this takes place in spite of Sayer's (1991) well-advised caution about the dangers of conflating the local–global with other dualisms. In both theory and practice, however, these analytic divisions have been difficult to maintain, and not simply because of sloppy theorizing. Epistemological and ontological dualisms always exist in a tensile relationship with other pairings, the larger context of which is a constellation of terms held together by a force field of attraction and repudiation (Dixon and Jones 1996). It is not so simple, then, to cleave our understandings of the local–global binary from those of the concrete–abstract, subjective–objective or chaotic–orderly.

14 This ready-made character of scale is well suited for adherents of critical realism, since it too sports a hierarchically organized set of ontological building blocks (of structures, mechanisms and events; see Sayer 1992, 141, 237). Realism's dualisms and scalar hierarchies often intertwine, again notwithstanding Sayer's cautionary remarks (1991; also Cox and Mair 1989).

15 There are a number of popular and academic authors smitten with the notion of unfettered flows. As should be clear from what follows, we strongly distance ourselves from both, including Thomas Friedman, whose ethnocentric book *The World is Flat* (2005) is but the latest. Lest we be misinterpreted, let us state unequivocally: The world is not flat.

16 This resonates with Neil Smith's (1996) admonishment of Castells's 'spaces of flows', as discussed earlier. Smith stresses both fixity and fluidity as constitutive elements of capitalism. Also see Woodward and Jones (2005).

17 This is not, however, to suggest a hierarchy of difference between potentialities and actualities. As Bonta and Protevi note: 'let us remember that the "aspects" of Deleuzean ontology [the virtual and the actual] should not be thought of as "levels" as if the virtual were more (or less) "real" than the actual. Rather, Delanda [2002] proposes that they are moments in a process of unfolding marked by symmetry-breaking cascades' (2004, 16).

18 Deleuze's notions of the actual and the virtual illuminate the two problems we highlighted in Richard G. Smith's flow ontology. There, what we described as operating upon the spatial and theoretical planes can here be understood in correspondence with the actual and virtual. Smith's fluidist reading of the theoretical work of Deleuze and Guattari presents the virtual as the totality of the world and, thus, when endeavouring to explain a view that speaks to the actuality of the world, represents it as a pure, global system of flowing potentiality. As we have repeatedly emphasized, this is symptomatic of theories that attest to the utter openness of the world, while deftly avoiding the diverse material and political cages in which many throughout the world find themselves trapped. How, for example, can Smith's 'ontology of globalization' account for the wall that Israel is building between itself and Palestine (where Israel gives Palestinians a state, but will not let them leave it)? For an ontology where 'all that is solid melts into air' (Smith 2003b, 570), such a nightmarish apparatus of capture – designed precisely to control or restrict flows – contrasts starkly with accounts of fluid capitalist fatcats (see Friedman 2005).

19 Put simply, just because something happens 'over there' doesn't mean it is taking place at a different scale. This transcendental transference haunts the scale epistemology. It implies that event relations emanating from New York or London are somehow more global than those from Tucson or Durham, much less Oaxaca or Kinshasa.

20 This claim is consistent with Massey: 'If space really is to be thought relationally . . . then "global space" is no more than the sum of relations, connections, embodiments and practices. These things are utterly everyday and grounded at the same time as they may, when linked together, go around the world' (2004, 8). Compare to Howitt's claim that: 'even superficial reflection confirms that the "global" is much greater than the sum of all its constituent "local" (or "regional", "national", "supernational" etc.) parts' (1993, 36). Similarly, we stop short of any sort of claim to a 'global social' (cf. Urry 2003), resisting the temptation to read the social as a discrete, singular system, apparently working uniformly while covering the Earth.

21 This is not to exhort everyone to study social reproduction, the quotidian or the home, for the shop floor, the boardroom and the war room are all important sites of unfolding orders and practices.

References

Agnew J 1993 Representing space: space, scale and culture in social science in **Duncan J and Ley D** eds *Place/culture/representations* Routledge, London 251–71

Amin A 2002 Spatialities of globalization *Environment and Planning A* 34 385–99

Amin A 2004a Regions unbound: towards a new politics of place *Geografisker Annaler* 86B 33–44

Amin A 2004b Regulating economic globalization *Transactions of the Institute of British Geographers* 29 217–33

Bauer B, Veblen T and Winkler J 1999 Old methodological sneakers: fashion and function in a cross-training era *Annals of the Association of American Geographers* 89 679–87

Bergson H 1988 *Matter and memory* **Paul N M and Palmer W S** trans Zone Books, New York

Bird J 1956 Scale in regional geography *Geography* 41 25–38

Bonta M and Protevi J 2004 *Deleuze and geophilosophy* Edinburgh University Press, Edinburgh

Brenner N 1998 Between fixity and motion: accumulation, territorial organization and the historical geography of spatial scales *Environment and Planning D: Society and Space* 16 459–81

Brenner N 2001 The limits to scale? Methodological reflections on scalar structuration *Progress in Human Geography* 15 525–48

Brenner N 2005 *New state spaces: urban governance and the rescaling of statehood* Oxford University Press, New York

Castells M 1989 *The informational city: information, technology, economic restructuring, and the urban-regional process* Blackwell, Oxford

Colebrook C 2004 The sense of space: on the specificity of affect in Deleuze and Guattari *Postmodern Culture* 15 46 (http://www3.iath.virginia.edu/pmc/text-only/issue.904/15.1colebrook.txt) Accessed 4 October 2005

Cooke P 1987 Clinical inference and geographic theory *Antipode* 19 407–16

Cox K 1997 *Spaces of globalization: reasserting the power of the local* Guildford, New York

Cox K 1998 Spaces of dependence, spaces of engagement and the politics of scale, or: looking for local politics *Political Geography* 17 1–23

Cox K 2002 *Political geography: territory, state and society* Blackwell, Cambridge MA

Cox K and Mair A 1988 Locality and community in the politics of local economic development *Annals of the Association of American Geographers* 78 307–25

Cox K and Mair A 1989 Levels of abstraction in locality studies *Antipode* 21 121–32

Cox K and Mair A 1991 From localized social structures to localities as agents *Environment and Planning A* 23 197–213

Cox K and Wood A 1997 Competition and cooperation in mediating the global: the case of local economic development *Competition and Change* 2 65–94

de Certeau M 1984 *The practice of everyday life* University of California, Berkeley CA

DeLanda M 2002 *Virtual science, intensive philosophy* Continuum, New York

Delaney D and Leitner H 1997 The political construction of scale *Political Geography* 16 93–7

Deleuze G 1994 *Difference and repetition* **Patton P** trans Columbia University Press, New York

Deleuze G 2004 *Francis Bacon: the logic of sensation* **Smith D W** trans University of Minnesota Press, Minneapolis MN

Deleuze G and Guattari F 1987 *A thousand plateaus: capitalism and schizophrenia* **Massumi B** trans University of Minnesota Press, Minneapolis MN

Dicken P 2004 Geographers and 'globalization': yet another missed boat? *Transactions of the Institute of British Geographers* 29 5–26

Dixon D and Jones J P III 1996 For a *supercalifragilisticexpialidocious* scientific geography *Annals of the Association of American Geographers* 86 767–79

Dixon D and Jones J P III 1998 My dinner with Derrida, *or* spatial analysis and poststructuralism do lunch *Environment and Planning A* 30 247–60

Dodds K, Smith N and Taylor P J 1997 Classics in human geography revisited *Progress in Human Geography* 21 555–62

Friedman T 2004 *Thomas L. Friedman reporting: the other side of outsourcing* (Video/DVD) Discovery Times Channel Production

Friedman T 2005 *The world is flat: a brief history of the twenty-first century* Farrar, Straus and Giroux, New York

Gibson-Graham J K 2002 Beyond global vs local: economic politics outside the binary frame in **Herod A and Wright M** eds *Geographies of power: placing scale* Blackwell, Oxford 25–60

Gibson-Graham J K 2004 Area studies after poststructuralism *Environment and Planning A* 36 405–19

Giddens A 1984 *The constitution of society* University of California Press, Berkeley CA

Gregory D 1981 Human agency and human geography *Transactions of the Institute of British Geographers* 6 1–18

Grosz E 2001 *Architecture from the outside: essays on virtual and real space* MIT Press, Cambridge MA

Haggett P 1965 Scale components in geographical problems in **Haggett P and Chorley R J** eds *Frontiers in geographical teaching: the Mandingly Lectures for 1963* Methuen, London 164–85

Haggett P, Chorley R J and Stoddard D 1965 Scale standards in geographical research: a new measure of areal magnitude *Nature* 205 844–7

Haraway D 1988 Situated knowledges: the science question in feminism and the privilege of partial perspective *Feminist Studies* 14 575–99

Haraway D 1991 *Simians, cyborgs, and women: the reinvention of nature* Routledge, London

Harding S ed 1987 *Feminism and methodology* Indiana University Press, Bloomington IN

Harrison P forthcoming 'How shall I say it?' Relating the non-relational *Environment and Planning A*

Harvey D 1968 Patterns, processes and the scale problem in geographical research *Transactions of the Institute of British Geographers* 45 71–8

Harvey D 1982 *The limits to capital* Blackwell, Oxford

Harvey D 1998 The body as an accumulation strategy *Environment and Planning D: Society and Space* 16 401–21

Herod A 1991 The production of scale in United States labor relations *Area* 23 82–8

Herod A and Wright M 2002 Placing scale: an introduction in **Herod A and Wright M** eds *Geographies of power: placing scale* Blackwell, Oxford 1–14

Hill J D 2000 *Becoming a cosmopolitan: what it means to be a human being in the next millennium* Rowman and Littlefield, Lanham MD

Holly B 1978 The problem of scale in time-space research in **Carlstein T, Parkes D and Thrift N** eds *Time and regional dynamics* Edward Arnold, London 1–18

Howitt R 1993 'A world in a grain of sand': towards a reconceptualization of geographical scale *Australian Geographer* 24 33–44

Howitt R 1998 Scale as relation: musical metaphors of geographical scale *Area* 30 49–58

Howitt R 2002 Scale and the other: Levinas and geography *Geoforum* 33 299–313

Howitt R 2003 Scale in **Agnew J, Mitchell K and O'Tuathail G** eds *A companion to political geography* Blackwell, Oxford 138–57

James P 1952 Toward a further understanding of the regional concept *Annals of the Association of American Geographers* 42 195–222

Jessop B 1999 Reflections on globalization and its (il)logics in **Dicken P, Kelly P, Olds K and Yeung H W-C** eds *Globalization and the Asia Pacific: contested territories* Routledge, London 19–38

Jonas A 1994 The scale politics of spatiality *Environment and Planning D: Society and Space* 12 257–64

Jones J P III and Hanham R Q 1995 Contingency, realism and the expansion method *Geographical Analysis* 27 185–207

Jones K 1998 Scale as epistemology *Political Geography* 17 25–8

Katz C 2001 Vagabond capitalism and the necessity of social reproduction *Antipode* 33 709–28

Lam N 2004 Fractals and scale in environmental assessment and monitoring in **Sheppard E and McMaster R B** eds *Scale and geographic inquiry* Blackwell, Oxford 23–40

Latour B 1997 On actor-network theory: a few clarifications (http://amsterdam.nettime.org/Lists-Archives/nettime-l-9801/msg00019.html) Accessed 23 October 2005

Latour B 1999 *Pandora's hope: essays on the reality of science studies* Harvard University Press, Cambridge MA

Law J 2004 And if the global were small and noncoherent? Method, complexity, and the baroque *Environment and Planning D: Society and Space* 22 13–26

Layder D 1994 *Understanding social theory* Sage, London

Le Guin U 1974 *The dispossessed: an ambiguous utopia* Harper and Row, New York

Lefebvre H 1991 *The production of space* **Nicholson-Smith D** trans Blackwell, Oxford

Leitner H 2004 The politics of scale and networks of spatial connectivity: transnational interurban networks and the rescaling of political governance in Europe in **Sheppard E and McMaster R B** eds *Scale and geographic inquiry* Blackwell, Oxford 236–55

Ley D 2004 Transnational spaces and everyday lives *Transactions of the Institute of British Geographers* 29 151–64

Low M 1997 Representation unbound: globalization and democracy in **Cox K** ed *Spaces of globalization: reasserting the power of the local* Guilford, New York 240–80

Mamadough V, Kramsch O and Van der Velde M 2004 Articulating local and global scales *Tijdschrift voor Economische en Sociale Geografie* 95 455–66

Mannheim K 1936 *Ideology and utopia: an introduction to the sociology of knowledge* Harcourt Brace Jovanovich, San Diego CA

Marston S A 2000 The social construction of scale *Progress in Human Geography* 24 219–42

Marston S A 2004 A long way home: domesticating the social production of scale in **Sheppard E and McMaster R B** eds *Scale and geographic inquiry* Blackwell, Oxford 170–91

Marston S A and Smith N 2001 States, scales and households: limits to scale thinking? A response to Brenner *Progress in Human Geography* 25 615–19

Massey D 1994 *Space, place and gender* University of Minnesota Press, Minneapolis MN

Massey D 2004 Geographies of responsibility *Geografiska Annaler* 86 5–18

McDowell L 1999 *Gender, identity and place* University of Minnesota Press, Minneapolis MN

McMaster R B and Sheppard E 2004 Introduction: scale and geographic inquiry in **Sheppard E and McMaster R B** eds *Scale and geographic inquiry* Blackwell, Oxford 1–22

Miller B 2000 *Geography and social movements* University of Minnesota Press, Minneapolis

Mitchell D 1995 There is no such thing as culture: towards a reconceptualization of the idea of culture in geography *Transactions of the Institute of British Geographers* 20 102–16

Mitchell K, Marston S A and Katz C 2004 Life's work: an introduction, review and critique in **Mitchell K, Marston S A and Katz C** eds *Life's work: geographies of social reproduction* Blackwell, Oxford 1–26

Natter W, Schatzki T and Jones J P III 1995 Contexts of objectivity in **Natter W, Schatzki T and Jones J P III** eds *Objectivity and its other* Guilford, New York 1–17

Nemeth D J 1997 Extreme geography *California Geographer* 37 10–31

Nussbaum M 1996 Patriotism or cosmopolitanism? in **Cohen J** ed *For love of country? Debating the limits of patriotism* Beacon, Boston 3–17

Phillips J 1999 Methodology, scale, and the field of dreams *Annals of the Association of American Geographers* 89 754–60

Phillips J 2004 Independence, contingency, and scale linkage in physical geography in **Sheppard E and McMaster R B** eds *Scale and geographic inquiry* Blackwell, Oxford 86–100

Robertson R 1992 *Globalization: social theory and global culture* Sage, Newbury Park CA

Sassen S 2000 Spatialities and temporalities of the global: elements for a theorization *Public Culture* 12 215–32

Sayer A 1991 Behind the locality debate: deconstructing geography's dualisms *Environment and Planning A* 23 283–308

Sayer A 1992 *Method in social science: a realist approach* 2nd edn Routledge, London

Schatzki T 2002 *The site of the social: a philosophical account of the constitution of social life and change* Pennsylvania State University Press, State College PA

Sheppard E and McMaster R B eds 2004 *Scale and geographic inquiry* Blackwell, Oxford

Simondon G 1964 *L'individu et sa genèse physico-biologique* Presses Universitaires de France, Paris

Simondon G 1989 *L'individuation psychique et collective* Aubier, Breteuil-sur-Iton

Smith D 1988 *The everyday world as problematic: a feminist sociology* Open University Press, Milton Keynes

Smith D W 2003 Mathematics and the theory of multiplicities: Badiou and Deleuze revisited *Southern Journal of Philosophy* 41 411–49

Smith M P 2001 *Transnational urbanism: locating globalization* Blackwell, Malden MA

Smith N 1984 *Uneven development: nature, capital and the production of space* Basil Blackwell, Oxford

Smith N 1992 Contours of a spatialized politics: homeless vehicles and the production of geographical space *Social Text* 33 54–81

Smith N 1993 Homeless/global: scaling places in **Bird J, Curtis B, Putnam T, Robertson G and Tickner L** eds *Mapping the futures: local cultures, global change* Routledge, London 87–119

Smith N 1996 Spaces of vulnerability: the space of flows and the politics of scale *Critique of Anthropology* 16 63–77

Smith N 2000 Scale in **Johnston R J, Gregory D, Pratt G and Watts M** eds *The dictionary of human geography* 4th edn Blackwell, Oxford 724–7

Smith N 2004 Scale bending and the fate of the national in **Sheppard E and McMaster R B** eds *Scale and geographic inquiry* Blackwell, Malden MA 192–212

Smith R G 2003a World city actor-networks *Progress in Human Geography* 27 25–44

Smith R G 2003b World city topologies *Progress in Human Geography* 27 561–82

Spinoza B 2000 *Ethics* **Parkinson G H R** trans Oxford University Press, New York

Staeheli L 1994 Empowering political struggle: spaces and scales of resistance *Political Geography* 13 387–91

Summerfield M 2005 A tale of two scales, or the two geomorphologies *Transactions of the Institute of British Geographers* 30 402–15

Swyngedouw E 1997 Neither global nor local: 'glocalization' and the politics of scale in **Cox K** ed *Spaces of globalization: reasserting the power of the local* Guilford, New York 137–66

Swyngedouw E 2000 Authoritarian governance, power and the politics of rescaling *Environment and Planning D: Society and Space* 18 63–76

Swyngedouw E 2004 Scaled geographies: nature, place and the politics of scale in **Sheppard E and McMaster R B** eds *Scale and geographic inquiry* Blackwell, Oxford 129–53

Taylor P 1982 A materialist framework for political geography *Transactions of the Institute of British Geographers* NS 7 15–34

Taylor P 2004 Is there a Europe of cities? World cities and the limitations of geographical scale analysis in **Sheppard E and McMaster R B** eds *Scale and geographic inquiry* Blackwell, Oxford 213–35

Thrift N 1995 A hyperactive world in **Johnston R J, Taylor P and Watts M** eds *Geographies of global change: remapping the world in the late twentieth century* Blackwell, Oxford 18–35

Urry J 2003 *Global complexity* Polity, London

Van Houtom H, Kramsch O and Zierhofer W eds 2005 *B/ordering space* Ashgate, Burlington VT

Welchman J C ed 1996 *Rethinking borders* University of Minnesota Press, Minneapolis MN

Whatmore S 2002 *Hybrid geographies: natures, cultures, spaces* Sage, London

White H 1973 *The content of the form* University of California Press, Berkeley CA

Woodward K and Jones J P III 2005 On the border with Deleuze and Guattari in **Van Houtom H, Kramsch O and Zierhofer W** eds *B/ordering space* Ashgate, Burlington VT 235–48

Comment

Eliminating scale and killing the goose that laid the golden egg?

Scott William Hoefle

Departamento de Geografia, Universidade Federal do Rio de Janeiro, Caixa Postal 68537, 21941-590 Rio de Janeiro, Brazil
email: scotthoefle@acd.ufrj.br

As an anthropologist who has worked with geographers for decades and has been inspired by the concept of scale as a means of overcoming the local–global dualism present in my discipline and in the other social sciences in general, I found the recent article in this journal by Marston *et al.* (2005) to be a timely and for the most part pertinent critique of Economic Neo-Darwinist conceptions of globalization, networks, flows and the sort. However, I am worried by the less pertinent aspects of their arguments and the suggested alternative concept of *site* within a *flat ontology*. First, I will focus on why scale is crucial for understanding political power and social movements, particularly in the Amazon, one of the world's great laboratories of alternative politics. Then, I will turn to the bogus issue of whether scale 'exists', where I will question the authors' understanding of philosophy. Finally, I will show how abandoning the concept of scale could prove to be dangerous for the long-term survival of geography, for if, as Dicken (2004) complains, geographers are forever missing the theoretical boat, then Marston, Jones and Woodward propose sinking one of the few boats crafted and launched by geographers themselves, which in effect could mean killing the goose that laid the golden egg.
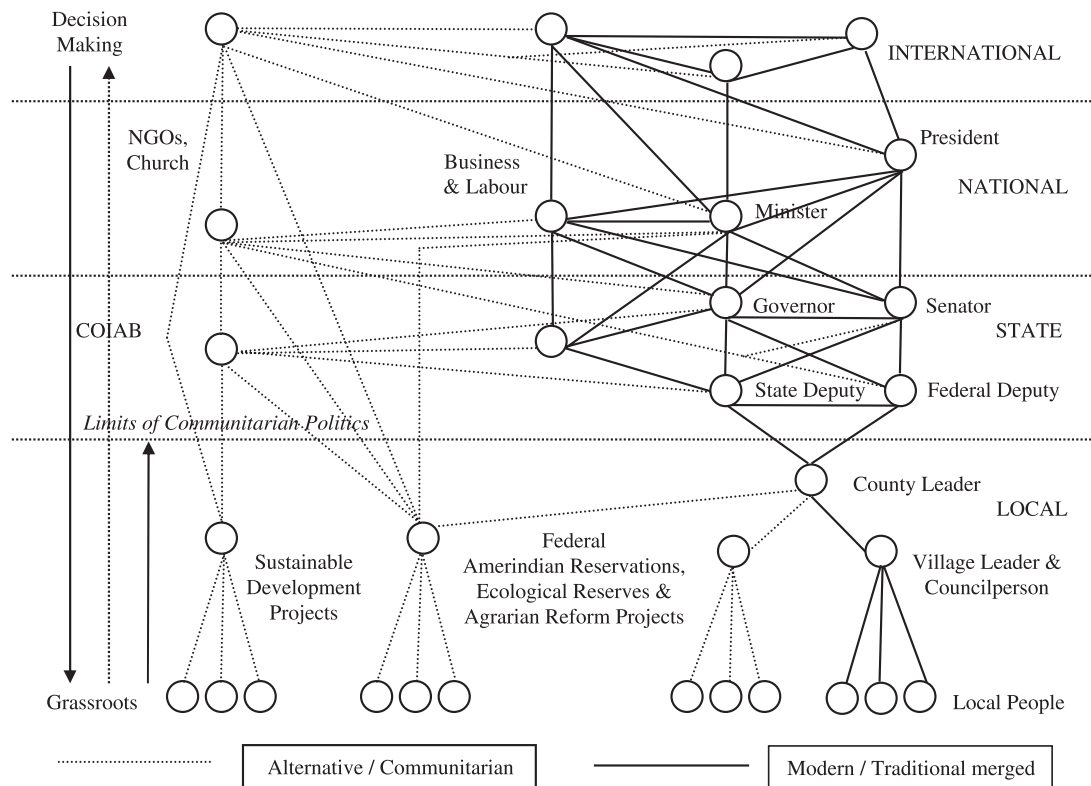
Scale, power and alternative politics

Marston, Jones and Woodward provide an excellent overview of the development of the concept of scale over the last decades, from Neo-Marxist views to contemporary Economic Neo-Darwinist formulations, which they rightly criticize for being economically deterministic, politically conservative and top-down in perspective. However, the authors rely too heavily on Derrida and only in passing refer to Post-Structuralist (Foucault) and other Post-Modernist (Lyotard, Baudrillard) views concerning power, networks and social movements, the spatiality of which Claval (1978), Friedmann (1992) and Raffestin (1980) were pioneers in Geography and was so well developed recently by Allen (2003), which amazingly are absent from the bibliography.

With this in mind, I defend the concept of scale allied to networks as applied to the complex political alliances which arose in the Amazon surrounding environmental, developmental and ethnic issues. The main reasons for this are that even if social movements try to circumvent top-down political hierarchies, one has to understand the latter to be able to understand what they are reacting to, and most importantly the success or failure of alternative politics in the Amazon hinges on working through *all* the scales of political alliances and not just getting off an international flight and barging into communities in a top-down fashion.

A host of global, national, regional, state-level, municipality-level and community-level actors interact and struggle over the fate of the Amazon, and the concept of scale is extremely important for understanding what appears to be political chaos (Figure 1). Within this process, international NGOs often become frustrated with the intermediary scales of power and try to go directly to the aid of local communities. No doubt, like that which happens on historical and contemporary frontiers all over the world, many national, regional and state-level players are committed to productivist and nationalist objectives and so act to stymie the efforts

Figure 1   The juxtaposition of hierarchical and alternative politics in the Brazilian Amazon
Source: Hoefle (2000 updated here)

of foreign NGOs. However, simply circumventing these scales of power short-circuits the process because in an environmentally and culturally complex world international players often do not have the detailed knowledge to choose the right place, time and amount of funding to give and end up throwing money at success-story communities, which do not always use it appropriately, while the great majority of less visible communities go wanting.

The famous craft fisher movement of Silves municipality is a case in point. The movement arose in the 1980s as a means of resisting the incursion of large commercial fishing boats supplying the insatiable markets of Belém, Manaus and Santarém. Progressive clergy and laypersons of the Catholic Church helped the communities organize a municipal-level association which effectively pressured local and later state and federal government for protection of their fishing grounds. The fishers were so successful that they attracted a good deal of outside attention, particularly during the UN Conference on

Environment and Development held in Rio de Janeiro in 1992. Various international NGOs and foreign governments provided millions of dollars and the movement split in two: a naive environmental movement controlled by local and outside urban actors whose objective was to maintain fishers as subsistence producers in order to preserve natural resources, and a farm production movement controlled by local rural people which sought financing for what was supposed to be environmentally-benign, commercial agro-forestry systems. The resulting disarticulation (of scales) was a disaster: the environmental movement turned into a make-work project which is now going through the throes of going cold turkey financially and the farm production movement became heavily indebted as agro-forestry systems failed because of overspecialization in a few products which provoked crop disease and caused produce prices to plummet.

Contrast this with the highly successful regional political movement COIAB (Coordenação das

Organizações Indígenas da Amazônia Brasileira), a consortium of Amerindian social movements of the Brazilian Amazon. Led by the acculturated Tucanos and Macuxis of Amazonas and Roraima states respectively, and helped by an impressive alliance of Brazilian and foreign anthropologists, environmentalists and religious organizations, the different Amerindian groups of the Amazon formed the consortium in 1989. Today COIAB includes 56 organizations representing over 200 000 Amerindians from 163 native peoples of the nine states that comprise the Brazilian Amazon. COIAB, together with its different political allies situated at all scales of political action, has been highly successful at setting aside enormous areas of the Amazon for reservations and at attracting funding for health and community development programmes. Representatives are regularly called upon to testify before state and federal congressional committees, to participate in ministry commissions and to attend all of the important world environmental and non-governmental association events.

What is important to note is that unlike projects undertaken by transnational NGOs, COIAB is truly multi-scalar and at the same time political participation occurs in a bottom-up fashion. Similarly, Bicalho (2003) and Miranda (2004) show that successful cases of alternative development in the Amazon have to be based on multi-scalar politics which go beyond the municipal level.

Consequently, it is hard to see how the concept of site would do justice to the complexity of Amazonian politics and maybe geographers should think twice before throwing scale out with the bath water. More importantly, the concept of site is politically conservative, even if less so than Economic Neo-Darwinism. However, in these troubled times of the early twenty-first century, this is not enough and I would prefer a theoretical perspective that Sayer (2001) called 'Critical Cultural Political Economy' in which a synthesis of Gregory (2004) and Harvey (2003), and maybe modestly helped by Hoefle (2004), is a far more powerful explanatory model for understanding a world in conflict.

There ain't no such thing as scale: philosophical red herrings

Whether scale has ontological existence or not is simply a bogus issue in philosophical terms. Of course the concept of scale, as all theoretical devices such as culture, society, economics, environment,

nature, site and a host of others, are just that, a word (symbol) in our head to which a string of ideas are associated concerning things, activities and processes perceived in the world. It is unfortunate that the authors were inspired by Mitchell (1995), who tried to argue that the concept of culture, unlike political economy or capital, does not exist ontologically. At the time, Cosgrove (1996) rightly objected to the 'foundationalism' (determinism and reductionism) present in Mitchell's arguments, which he characterized as 'sub-Marxian' because culture was considered to be located at a 'nebulous/ mystifying level' with 'no solid ontological ground/ foundation' and so was 'reifying', 'empty' and 'untethered' (Mitchell 1995, 103–7).

Perhaps the greatest problem with bandying about the word ontology, as Mitchell and the authors do, is that it cannot be disassociated from epistemology. Harvey (1973) clearly saw this connection when he simply and elegantly defined epistemology as procedures and conditions that make knowledge possible and ontology as a theory of what exists and that the two are interrelated in a (phenomenological) constructivist way rather than a (realist) empiricist or innatist (rationalist) way: 'the subject is thus regarded as both structuring and being structured by the object' (1973, 297–8). Consequently, one must have a clear idea of the overall epistemology in which theories of empirical perception are embedded (Table I).

The authors, like Mitchell, mix/confuse epistemologies and ontologies. Naïve realism of empiricist epistemology is grafted on to critical science which is usually based on phenomenological epistemologies. For the latter, and indeed for rationalism, the perception of what exists is no simple matter and the mind plays an important role in what is perceived. Perhaps this confusion has to do with national philosophical and educational traditions. Anglo-American intellectuals have a long tradition of empiricist thought, while phenomenological modes of thought have been the norm in Germany and rationalist, and from Sartre onward phenomenological, thought dominant in France. Perhaps because of this basic difference in scientific outlook, French intellectuals have been so important for generating original conceptual innovations in the social sciences since the end of the nineteenth century – Functionalism (Durkheim), Structuralism (Lévi-Strauss), Neo-Marxism (Godelier, Althusser), Cultural Neo-Marxism (Baudrillard), Post-Structuralism (Foucault), Post-Modernism

Table I   Epistemologies and associated ontologies

Philosophy of science	Phenomenology (Kant, Nietzsche, Heidegger)	Empiricism (Berkeley, Hume, Locke)	Rationalism (Descartes, Leibniz, Spinoza)
Epistemological spheres			
Scientific objective	Particularist juxtapositions	Probabilistic associations	Determinist and reductionist laws
Cultural scope	Inter-relational holism	Selective integration	Systematic specialization
Spatial scope	Contextualized localities	Case studies→region→world	Universe, world
Temporal scope	Diachronism	Synchronism	Universal evolutionism
Scientific method	Existential narrative, participant observation	Experimental inductive observation	Demonstrative deductive introspection
Analytical procedure	Intuitive qualitative interpretation	Quantitative description	Logical mathematical analysis
Ontological spheres			
Perceptive model	Idealism or constructivism	Realism	Essentialism or structuralism
Agent	Subject↔object	Object→subject	Subject→object

Source: Hoefle (1999 translated here)

(Baudrillard, Derrida, Lyotard) and Cultural Neo-Darwinism (Sperber) – which, as Godelier (1997) complains, are often poorly understood by Anglo-American intellectuals due to their empiricist bent (our case in point).

Consequently, before opting for the concept of site, maybe geographers should consult Geertz (1973), Clifford (1986) and Sperber (1995) about the intractable problems with analyses which are highly context dependent, whereby generalization hovers overhead closely to specific case studies being explained/interpreted and does not travel very far. Do geographers really want to be interpretative anthropologists? This brings us to my last, but not least, worry concerning eliminating scale from the geographical tool bag.

Suicidal tendencies?

One of the principal protagonists of the debate over scale, Taylor, once colourfully observed that after the Second World War, Geography was dragged squirming and screaming into its niche in twentieth-century specialized Science (1985, 103). This is to say the holistic regional Geography of Hartshorne cutting across the systematic sciences and speciality areas within the discipline (expressed in Figure 1, 1939) was replaced by an analytical division of labour within the discipline and between the discipline and the other social sciences best expressed in Figure 3 in Berry (1964) and Figure 3.1 in Abler *et al.* (1971). However, Hartshorne had it right and the New Geography of Spatial Science

had it tragically wrong with regard to the place of the discipline within the epistemological scope of Science. Not only the strength but also the very reason for the existence of Geography lies in its holistic regional (or what became spatial-scalar) approach to cultural topics. Spatial and temporal processes are not of the same epistemological scope as cultural processes and each of the (remaining) holistic social sciences (Geography, History and Anthropology) explore social phenomena in different ways along their respective epistemological axes, while the systematic sciences dissect social phenomena into analytic bits and pieces seldom reintegrated in a meaningful way (Figure 2).

Consequently, the spatial context is not the same thing as the economic, political, psychic, social, time or cultural contexts and to deny this and instead try to imitate the systematic social sciences is to condemn Geography to elimination. One wonders if US geographers are not suicidal by nature. During the 1945–1973 modernist phase, many geographers turned their discipline into a spatialized Economics, aping the paradigmatic social science of that time, and the result was a wave of departmental closures. Deans asked themselves why maintain Geography when Regional Economy does the same thing better. Where the spatial science emphasis was stronger in the East and Mid-West of the United States, Geography departments were closed at all of the elite research institutions, while the departments founded by the much maligned Berkeley School in an arc from California to Louisiana remained thanks to their holistic approach
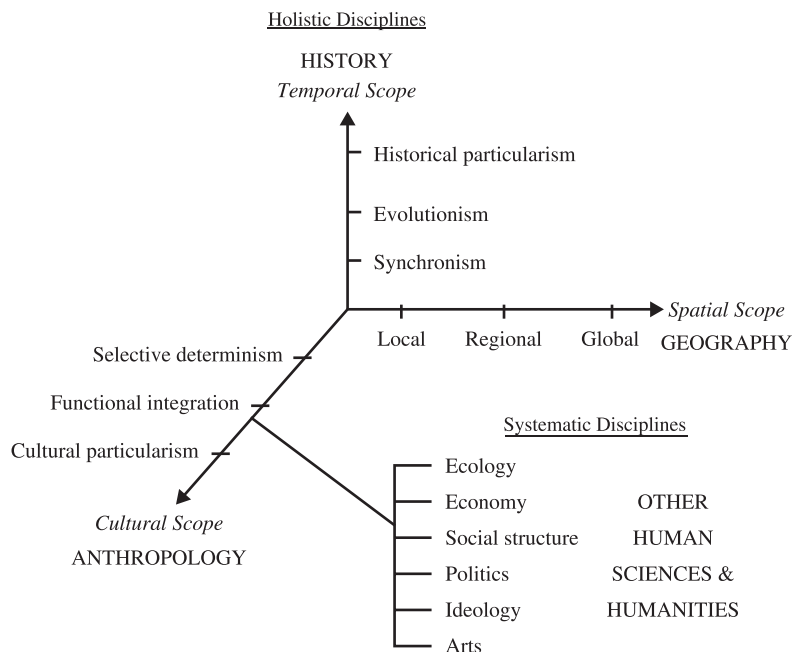
Figure 2   Holistic and systematic social sciences and humanities

rather than economic determinism. Bjelland (2004) shows how, when judged by the number of students and degree courses, Geography has fallen dangerously behind the other social sciences in the United States.

One needs only to visit the Barnes & Noble flagship bookstore on 5th Avenue in New York, which sells academic material to students and faculty of the numerous universities of the city. Anthropology occupies a full wall and is situated next to Cultural Studies, while a miniscule Geography section is located way back in the specialized stalls where one may encounter a couple of expensive regional textbooks. The books of most important contemporary geographers are scattered out in other areas, such as Cultural Studies. When Harvey published *The New Imperialism*, there was no Geography department in the East important enough to take in an academic of his stature and he ended up as Distinguished Professor of Anthropology at the City University of New York.

True, as Richardson (2005) shows, Geography is recovering during the present modernist phase dominated by different Neo-Darwinist currents thanks to the general interest in Geographical Information Systems (which dominate the advertisements for new positions in the *AAG Newsletter*,

and the GIS and Remote Sensing speciality groups are two of the largest of the Association). These are general purpose tools which can be used to monitor environmental and social relations (as well as land taxes, wars and homeland security). However, GIS and remote sensing are just that, mere methods which could be provided by a scaled-down Cartography department without any need for Human or even Physical Geography. Why buy the cow when you only need the milk?

In sum, Marston, Jones and Woodward should be read and digested *within* the discipline and for Geography's sake nary a word about the article outside it. To do the opposite would be as if Anthropology had followed Kahn's (1989) candid demolition of the concept of culture and had abandoned it exactly when the other social sciences and humanities were embracing Postmodernism. Indeed, I would have preferred that Marston, Jones and Woodward had limited their article to a critique of scale, left out the part on flat ontology and site and had ended their article like Kahn did,

> The . . . point in favour of retent[ing scale] is a purely negative one. There is no concept with which [we] could replace that of [scale within geographical] analysis and which would at the same time overcome the difficulties outlined here. (1989, 21, paraphrased)

References

Abler R, Adams J S and Gould P 1971 *Spatial organization* Prentice-Hall, Englewood Cliffs NJ

Allen J 2003 *Lost geographies of power* Blackwell, Oxford

Berry B 1964 Spatial analysis *Annals of the Association of American Geographers* 54 2–11

Bicalho A M 2003 Pro-active farmers and political participation in the Central Amazon in **Lauren L and Byrant C** eds *La durabilité des systèmes ruraux, une construction sociale et culturelle* Université Paul Valéry, Montpellier 77–89

Bjelland M D 2004 A place for geography in the liberal arts college? *Professional Geographer* 56 326–36

Claval P 1978 *Espace et pouvoir* Presses Universitaires de France, Paris

Clifford J 1986 Introduction: partial truths in **Clifford J and Marcus G E** eds *Writing culture* University of California Press, Berkeley CA 1–26

Cosgrove D 1996 Ideas and culture *Transactions of the Institute of British Geographers* 21 574–5

Dicken P 2004 Geographers and globalization: (yet) another missed boat? *Transactions of the Institute of British Geographers* 295–26

Friedmann J 1992 *Empowerment* Blackwell, Oxford

Geertz C 1973 *The interpretation of cultures* Basic Books, New York

Godelier M 1997 American Anthropology seen from France *Anthropology Today* 13 3–5

Gregory D 2004 *The colonial present* Blackwell, Oxford

Hartshorne R 1939 *The nature of geography* AAG, Lancaster

Harvey D 1973 *Social justice and the city* Arnold, London

Harvey D 2003 *The new imperialism* Blackwell, Oxford

Hoefle S W 1999 Débats épistémologiques recents dans la géographie culturalle anglo-américaine *Geographie et cultures* 31 49–64

Hoefle S W 2000 Patronage and empowerment in the central Amazon *Bulletin of Latin American Studies* 19 479–99

Hoefle S W 2004 Bitter harvest: the US frontier legacy of internal violence and belligerent imperialism *Critique of Anthropology* 24 277–300

Kahn J S 1989 Culture: demise and resurrection? *Critique of Anthropology* 9 5–25

Marston S A, Jones III J P and Woodward K 2005 Human geography without scale *Transactions of the Institute of British Geographers* 30 416–32

Miranda M 2004 Alternative experiments in land settlement in the Brazilian Amazon in **Bicalho A M and Hoefle S W** eds *The regional dimension and contemporary challenges to rural sustainability* LAGET-UFRJ/CSRS-IGU, Rio de Janeiro 359–73

Mitchell D 1995 There's no such thing as culture *Transactions of the Institute of British Geographers* 20 102–16

Raffestin C 1980 *Pour une géographie du pouvoir* LITEC, Paris

Richardson D 2005 Bringing geography back to Harvard *AAG Newsletter* 40 2, 5

Sayer A 2001 For a critical cultural political economy *Antipode* 33 687–708

Sperber D 1995 *Explaining culture* Cambridge University Press, Cambridge

Taylor P 1985 The value of a geographical perspective in **Johnston R J** ed *The future of Geography* Methuen, London 92–110

Commentary

Flat ontology and the deconstruction of scale: a response to Marston, Jones and Woodward

Chris Collinge

Centre for Urban and Regional Studies, University of Birmingham, Birmingham B15 2TT
email: c.j.collinge@bham.ac.uk

Structural space

To identify the subject matter of human geography it is generally necessary to draw spatial boundaries at some level of abstraction. Whether the focus is upon patriarchalism or the new imperialism, areal differentiation or economic integration, the determination of such boundaries will usually be required at some stage in the proceedings. Spaces do not however occur in the singular: each locality, for example, is defined not only by contrast with other localities, but also with non-local territories of different sizes (such as bodies or regions). Indeed, it is by codifying this system, projecting a world that is divided not only into a 'horizontal' structure (in which similar activities are organized at similar scales in different places) but also a 'vertical' structure (in which different activities are organized at different scales covering the same places), that scale analysis acquires its conceptual power. The framework of nested scales was introduced during the 1950s and 1960s as a categorical device for describing spatial patterns at different levels of aggregation. From the early 1980s it was however argued that scales reflect real differences in the territorial organization of society, and it is on this basis that scale analysis (including perhaps the body, home, locality, region, nation, supranational and global levels) has extended its influence: 'integral to the production of space, capital produces certain distinct spatial scales of social organisation' (Smith 1984, 87; see also Taylor 1982; Kurtz 2003; Gough 2004; Uitermark 2005; for

a useful review see Sheppard and McMaster 2004). But whether it is composed of nominal categories or real territories, the scale analytic cannot be segregated from the rest of traditional human geography but is symptomatic of this, and of the spatial structuralism with which it is generally imbued.

Over broadly the same period, however, the writings of Lacan and Foucault, Deleuze and Derrida, Cixous and Irigaray have informed a post-structural critique of presence and identity that challenges the coherence of abstract structures. Feminists have argued, for example, that the spaces of structural geography, the spaces that can be exhaustively analysed scale by scale, express the territorial logic of patriarchy (Rose 1993, 149; 1996, 62). The masculine desire to stabilize meaning leads therefore to the drawing of boundaries around territories: 'envelopes are another solid then; they depend on a certain kind of space to constitute the masculine subject and his feminine (m)other' (Rose 1996, 71). Indeed, in her deconstruction of these boundaries Rose pursues the language of a 'paradoxical space', a space that lurks beneath the bounded space of geography, a space of flows and melding that (for example) undermines the distinction between the real and the metaphorical: 'It is to write as if the mirrors were not solid but permeable, as if the tain could move . . .' (Rose 1996, 72; 1993, 140–1). But perhaps the first deconstruction of spatial structuralism – after that of Derrida himself – was provided by actor-network theory, which acknowledges the reality of macrostructures (such as nested scales)

whilst showing that these are sustained through networks of heterogeneous association (Callon and Latour 1981).

In their recent article Marston, Jones and Woodward develop an approach that is informed less by feminism or ANT, more by Schatzki and Deleuze, and that pursues not so much the deconstruction of scale as its elimination from the lexicon of human geography. Their article begins with a critique of scale, then sketches an alternative flat ontology, and in both respects makes an important contribution that reaches well beyond the scale debate to the wider investigation of social space. In developing a response, however, I have drawn out two particular strands from their argument – one strand, from their critique, that is informed by the work of Derrida; and another, from their proposed alternative, that is informed by Latour – and have used these to produce some critical leverage.

The critique of scale

Marston *et al.* open their paper by reviewing in particular the neo-Marxist scale writings of Taylor and Smith, Swyngedouw and Brenner, and by showing that in each case these project a framework of nested scales that rises vertically, providing a spatial scaffold up and down which social processes can supposedly flow (Marston *et al.* 2005, 418). But as the authors point out, this vertical formulation has a number of deficiencies. First of all it relies upon a confusion between scale as spatial size and scale as institutional or boundary level, confusion in which the two meanings are conflated:

> hierarchical scale cum boundary-making invites a mishmash of scalar talk with boundary talk, and until we can sort out the differences, we might as well use extensivity and bordering as separates. (Marston *et al.* 2005, 428, note 10)

Secondly, scalar hierarchies and the local/global distinction are confused in this context with the distinction between micro/macro levels of social analysis, or between agency/structure or concrete/abstract. Regarding the local/global, they note in particular that

> it is easy to see how this fundamental opposition could enter into the terrain of scale theorizing, for in one sense the local-global distinction is merely the spatial version of micro-macro. (Marston *et al.* 2005, 421)

Thirdly, they argue that hierarchical scales are taken for granted as units of analysis that shape

our thinking in implicit ways: 'once these layers are presupposed, it is difficult not to think in terms of social relations and institutional arrangements that somehow fit their contours' (Marston *et al.* 2005, 422). Fourthly, they claim that hierarchical scales provide an apparently transcendental perspective which discourages researchers from acknowledging their own positionality: 'How, we might ask, can a researcher write seriously about situated positionality after having just gone global' (Marston *et al.* 2005, 422). On the basis of this critique the authors suggest that the concept of scale is inherently hierarchical and should be eliminated from the terminology of human geography:

> These problems, we believe, are inherent to hierarchies and cannot be resolved by integrating them with network formulations. For these reasons we elect to expunge scale from the geographical vocabulary. (Marston *et al.* 2005, 422)

Strand 1: the analogic of deconstruction

Such criticisms are surely correct as far as they go. But before moving on it is perhaps worth seeing if they, especially the suggestion that local–global is merely a spatial version of micro–macro, can be extended further by reference (for example) to the writings of Neil Smith. Throughout his scale writings Smith draws a distinction between space and society – asserting a 'historical dialectic' between these, arguing that different societies produce space, that space is a repository of social assumptions – and suggests that the relationship between these is mediated dialectically through the production of scale, a process in which society produces scales that reproduce society:

> scales should be seen as materially real frames of social action. As such, geographical scales are historically mutable and are the products of social activity. (Smith 1995, 60; see also 1979, 376; 1984, 77; 1990, 169; 1992, 73; 2004, 197)

Smith also draws a distinction between material and metaphorical space, develops a critique of spatial metaphor for undermining the reality of space, and argues that such metaphors must be harnessed to material space within a geographical language that he describes as a 'spatial grammar' (Smith 1984, 75; 1990, 169; 1992, 66; Smith and Katz 1993). Metaphor is defined here by the use of homology: 'metaphor functions by asserting the homology or at least resemblance between something to be known and something assumed as

already known' (Smith 1992, 66). But despite this critique, when we examine Smith's writings about scale, then alongside the differences between society and space we find a series of homologies – metaphors – between these spheres, a series that is central to his conceptual architecture:

1 In 1984 Smith presents his spatial concepts as analogous to a series of social concepts that he derives from Marxism, identifying parallels between (for example) immobile/mobile capital and fixed/circulating capital, between the spatial and the social concentration/centralization of capital, between spatial scale and the scale of production (e.g. Smith 1984, 89, 119, 122, 129, 142, 146).

2 In 1984 and 1990 Smith proposes a homology between spatial scales and social functions, with 'the home' viewed as 'the inscription primarily of the reproduction of social relations', whilst the global space 'is the product of the economic relations of the market' (Smith 1990, 173).

3 In 1990 and 1992 the phrase 'contained in space' identifies the different scales as spatial mechanisms of political regulation, and highlights the equation that is made in these texts between spatial and social notions of 'scale', between scales as categories of spatial size and scales as instruments of political control (in which they apparently distil 'the oppressive and emancipatory possibilities of space') (Smith 1990, 173–4; 1992, 70).

4 In 1992 Smith broaches his analysis of spatial scale through the homology between hierarchies of spatial size and hierarchies of social power: for example, between hierarchical space and divisions of race and class, gender and ethnicity; and between the local–global and the agency–structure distinctions (Smith 1992, 67–70, 73, 78; see also 2004, 197).

5 In 1992 it is a one-to-one correspondence between spatial scales and social functions (between the globe and financial capital, the nation and politics, the locality and social reproduction, the home and gender construction) that forms the basis of Smith's theoretical framework whereby 'systematically different social processes are involved in the arbitration and construction of different scales of social activity' (Smith 1992, 73, see also 70, 75–6; Marston and Smith 2001).

6 In 2004 key economic concepts such as the 'expansion and centralisation of capital' and 'scale of economic accumulation' are once again placed in a spatial context and used in ways that

encourage a spatial interpretation (e.g. Smith 2004, 206).

7 A homology is identified in 2004 between spatial scales and political agents (city governments, nation states, global corporations, private individuals, neighbourhood organizations) organized at different levels, a homology that forms the basis of Smith's argument about 'scale bending' (e.g. Smith 2004, 193–4).

Taken together these parallels betoken a more general homology between Smith's geography and Marxian sociology. But unfortunately this homology opens the door to a series of displacements and substitutions between spatial and social concepts within the texts concerned, substitutions that create uncertainty as to which sense (the spatial, or the social, or the-spatial-and-the-social) is being invoked on any particular occasion. So by using economic terms such as 'fixed/circulating capital' or 'concentration and centralisation of capital' to describe spatial patterns without at the same time foreclosing their economic usage (in 1984 and again in 2004), Smith superimposes spatial upon social meanings and creates uncertainty in the application of these terms. By using 'scale' (in 1990 and 1992) without distinction to describe not only categories of spatial size but also instruments of political control, Smith addresses political and spatial referents in the same terms and confuses the spatial form of a struggle with its political oppression through the imposition of spatial boundaries. By using 'scale' (in 1992) to cover not only hierarchies of spatial size but also hierarchies of social power, Smith assimilates social meanings to spatial terms, and creates uncertainty as to whether on particular occasions 'hierarchial space' refers simply to a hierarchy of spatial sizes, or to a hierarchy of spatial size that is by virtue of this also a hierarchy of social power. The homology between spatial scales and social functions (in 1990 and 1992) produces confusion by assimilating the latter to the former, with 'interpersonal interactions' treated as 'local' interactions and inter-state relationships as 'global' relationships, the global scale treated as 'the scale of finance' whilst the local scale is 'the scale of reproduction'. By asserting (in 2004) that the hierarchy of spatial scales is at the same time a hierarchy of political status, in which it is improper for political agents at smaller spatial scales to engage on equal terms with those embracing larger

scales, Smith assumes a homology which (as in 1992) permits political status and spatial size to be addressed in the same terms.

The homologies between space and society that inform Smith's writings therefore produce a series of homonyms in which key terms ('the centralisation of capital', 'hierarchial space', the 'local' and the 'global', 'spatial scale') cover both social and spatial meanings. Indeed, by extending the scope of social concepts to include spatial objects or patterns, Smith produces a series of what are in his terms social metaphors, in which (for example) the term 'centralisation of capital' is applied to spatial processes (capital collocation), whilst at the same time also retaining its social meaning (capital consolidation). But, despite his critique of spatial metaphor, most of the metaphors that emerge from the ana-lysis of Smith's texts (and the homologies they involve) are spatial in character. To use 'spatial scale' for a measure of spatial size and an instrument of political control (or a measure of social function or social power or political status) is to encompass spatial and social meanings within the same (spatial) term. Indeed, in the context of Smith's project of grounding spatial metaphors in material space, each of the metaphors identified above is used here to draw their social or metaphorical referents back into the material or literal space that is the milieu of Smith's geography. It is precisely by means of such metaphorical folds that Smith attempts to secure the material grounding of metaphorical space, and so the spatial grounding of society. But through the operation of these metaphors Smith conflates the social and spatial phenomena which at the same time he distinguishes, eliding the difference between society and space upon which his analysis depends. A recurrent pattern of undecidability is therefore produced – in which spatial scale (for example) is undecidable between metaphorical and literal and metaphorical-and-literal meanings, between social and spatial and social-and-spatial meanings – an undecidability that renders Smith's theoretical formulations indeterminate.

Through the work of this undecidability Smith's texts systematically deconstruct themselves, both asserting and eroding the distinction between society and space – and between metaphor and material – upon which they depend. With time this analysis could no doubt be developed in a direction similar to that which I have set out elsewhere (Collinge 2005). But for present purposes it is enough to note that a perverse logic works itself out across Smith's

texts – and indeed across those of Taylor and Swyngedouw – a paradoxical analogic by which their composition depends upon manoeuvres that at the same time bring their decomposition. The implications of this deconstructive logic go well beyond mere error and point, as Derrida has shown, towards the general conditions of all metaphysical understanding (see, for example, Derrida 1973 1976 1978 1982). But by addressing them simply as mistakes Marston *et al.* miss these wider implications and the relevance they may have for their own project of eliminating the metaphysical concept of scale and (by implication) the structural spatiality with which this concept is bound up.

A flat ontology

Having set out their critique, Marston *et al.* move on to propose their own model. Citing not only Deleuze but also Latour as sources, they suggest an alternative, flat ontology of self-organizing systems

> where the dynamic properties of matter produce a multiplicity of complex relations and singularities that sometimes lead to the creation of new, unique events and entities, but more often to relatively redundant orders and practices. (Marston *et al.* 2005, 422)

The authors hope that by focusing upon both material composition and decomposition, by accommodating the differential relations that drive this process, and by acknowledging that complex systems generate both systematic orderings and open creative events, they will avoid the excessive voluntarism associated with pure openness. They argue convincingly that we must invent new spatial concepts to address the materialities and singularities of space, the 'localized and non-localized event-relations productive of event-spaces' (Marston *et al.* 2005, 424). A flat ontology must be rich enough to account for socio-spatiality without reproducing static conceptual categories or 'bordered zones' that require 'higher' spatial categories to bound them (Marston *et al.* 2005, 425).

To this end they draw upon Schatzki's ontology whereby a 'site' is a milieu within which some or all of its inhabitants are inherently incorporated, and a 'social site' is 'the site specific to human coexistence: the context, or wider expanse of phenomena, in and as part of which humans co-exist' (Schatzki 2002, 146–7). Social sites are dynamic contexts that allow inhabitants (including stable objects and practices) to hang together in event-relations by

virtue of the activities which take place, and that are rendered determinate through the working out of certain latent tendencies. For Schatzki social sites are necessarily human centred: 'I agree with Laclau and Mouffe that practices are human activity and that causality in social affairs is centred in such activity' (2001, 46). But practices within these sites are enabled and delimited by the arrangement of material objects, including the layout of the built environment and of those things regarded as 'nature':

> nature, consequently, is part of the arrangements that constitute the site of the social: Organisms and things of nature number among the phenomena through, around, and by reference to which human coexistence transpires. (Schatzki 2002, 181)

Each site is therefore a 'manifold' that does not precede the interactive processes which assemble it but emerges from the interactions of its human and non-human inhabitants, and to discuss its composition requires a processual mode of thought: 'we can talk about the existence of a given site only in so far as we can follow interactive practices through their localized connections' (Marston *et al.* 2005, 425).

The emphasis of the argument then shifts somewhat towards Deleuze. In Deleuzian terms the bodies composed within the world are material actualizations resolved through the play of differential virtualities that, given other combinations of potential and actual relations, would resolve themselves differently (Deleuze 1994). Through this step the authors hope they can acknowledge not only the extensive repetitiousness of the world, but also its intensive capacity for change and newness, and they recommend that we

> think of the complex potentialities that inhere in the actualization of event-relations in even the most banal of sites, to make them problematic, complex and dynamic. The virtual, or potentiality, draws the forces of a site into intensive relations that are actualised in extensity. It is thus through the event that we find the expression of the differential in the unfolding of space. (Marston *et al.* 2005, 426)

Localization, for example, is not conceived in terms of the 'local', but as the site actualized out of a complex number of connective potential processes: 'through the activity of intensive relations, extensive space finds moments of coherence' (Marston *et al.* 2005, 426). The authors suggest that

> approached as manifolds, neighbourhoods are not discrete, permanent, and linked 'locales', but the localized expressions of endo-events and exo-events, the 'inside-of'

and 'outside-of' force relations that continuously enfold the social sites they compose. (Marston *et al.* 2005, 426)

Marston *et al.* therefore conclude that consideration should be given to what is problematic about spatiality, and that by leaving the emergence of space folded within its own relations site approaches avoid predetermining or concealing its contents:

> in the spirit of this project, we suggest an approach that begins with the recognition that scale and its derivatives like globalisation are axiomatics: less than the sum of their parts, epistomological *trompe l'oeil* devoid of explanatory power. In contrast, a flat ontology problematizes a world in which 'all contemporaneous lives' (Schatzki 2002, 149) are linked through the unfolding of intermeshed sites. (Marston *et al.* 2005, 426)

Strand 2: the scaled Leviathan

From its inception in the early 1980s actor-network theory has challenged the ontological status of macroscopic structures such as nested scales, arguing that these are composed as realities within the practices of everyday life. Indeed, over the years ANT and post ANT writings on complexity have developed sophisticated accounts of the performance of scale differences in bodies of various sorts (e.g. Callon and Latour 1981; Latour 1994; Thrift 1995; Law 2004). Given the strength of its own challenge to spatial structuralism, and given certain affinities which are acknowledged between this and Marston *et al.*'s flat ontology, it is perhaps worth drawing a comparison with actor-network theory – as an *alternative* alternative to political economy – and (in this context) to do so by imagining what an ANT or post ANT approach to scale would look like.

ANT was developed by radicalizing the sociology of knowledge, bracketing out not only the 'reality' to which knowledge refers but also the 'social' from which it was said to derive, leaving behind the phenomenal immanence of meaning in all its forms. The material semiotics of actor-network theory has developed a language for exploring the constitution of meanings (of, for example, dualistic identities) through the discourses, devices and practices that comprise heterogeneous networks (Akrich and Latour 1992). Indeed, Latour has suggested that actor-network theory involves a change in the metaphor used to describe essences, a change in which the 'real' space of traditional geography is replaced by a space that is articulated within networks and proximity is defined by connectability (Latour 1998, 3). Spatial structures of

the sort that are embodied within nested scales involve a 'regional' as against networked or fluid spatiality, a topology 'in which objects are clustered together and boundaries are drawn around each cluster', and homogeneities are identified within boundaries (Mol and Law 1994, 643). The existence of regional spaces is from this perspective a function of network connections, connections in which physical boundaries and differences of scale are achieved through the differential enrolment of objects within these networks, enrolments that (for example) produce differences in the size measurements of the spaces concerned (Callon and Latour 1981, 286; Law 2004). A system of nested scales does not therefore inhere as such within terra firma but is performed through the practices that comprise actant-networks:

- in the maintenance of street signs that agencies erect to produce thresholds between places, and between places within places;
- in the practices of postal workers who, referring to the nested hierarchies that comprise addresses, assign letters through different pathways to different destinations;
- within the strategy documents, structure charts and dispersed communications of (for example) HSBC, communications in which differences of status and power between employees – and the status of HSBC as a global entity – are constituted;
- within the writings of civil servants who maintain official definitions of addresses in (for example) lists of postcodes that correlate with grid references, and with physical landmarks, as things mutate on the ground;
- in the activities and products of statistical departments which assemble census returns and produce documents in which these are linked to boundaries and the identities of places are constituted;
- in the allocation of tasks between agencies – perhaps between police forces – in dealing with problems, with (say) crimes that whilst linked are physically remote;
- in the ideas that people have about their locations at different levels of abstraction, about the identities which attach to these locations and to themselves in these contexts;
- in the writings and other practices of academic geographers which produce differences of scope and power by assembling data that enrols spaces within systems of (say) uneven development or multi-level governance: 'to state that

there is a system is to make an actor grow by disarming the forces which he or she "systematizes" or "unifies"' (Callon and Latour 1981, 294).

These practices and the nested scales which they deploy need not be consistent with one another, for as Law has observed there is no general logic of emergence:

> the global is situated, specific, and materially constructed in the practices which make each specificity . . . It is specific to each location, and if it is bigger or smaller then it is because it can be made bigger or smaller at this site or that. (Law 2004, 24)

There are therefore as many globals and locals, and as many ways of relating these to one another, as there are sites that project such objects, and the relationships between such relations – between scale schema – is not resolved in advance in favour of consistency:

> there is no possibility whatsoever of an emergent overview . . . because there *is* no final coherence. There *is* no system, global order, or network. These are at best partially enacted romantic aspirations. Instead there are local complexities and local globalities, and the relations between them are uncertain. (Law 2004, 23–4)

Indeed, drawing upon Callon and Latour's reading of Hobbes we can interpret each system of nested scales – each system of postal addresses and each organizational chart – as a Leviathan, a durable sovereign or macro-actant that interpellates a compound body through a complex sequence of translations. But neither Leviathans nor scale systems exist in the singular, as can be seen from the plurality of these produced across the different practices set out above:

> there is not just *one* Leviathan but many, interlocked one into another like chimera, each one claiming to represent the reality of all, the programme of the whole. (Callon and Latour 1981, 294, 297)

Conclusion

In developing a critique of scale and in proposing a flat ontology, Marston, Jones and Woodward have made an important and challenging contribution, not only to the scale debate, but to the analysis of space more generally – and indeed to the reception of Deleuze's work within human geography (on this latter point see, for example, Doel 2000). In reading their article, however, I have drawn out two strands of argument – one from their critique and another from their revised model – that are informed by the work of Derrida and Latour respectively, and that suggest different directions from those which the

authors have taken. There are on this basis several observations to be made.

First of all, Schatzki's site ontology resembles actor-network theory in viewing sites like networks as self-organizing processes in which order is always tenuous and does not precede the practices through which it is composed. Schatzki's ontology also resembles Latour's in acknowledging that the material (e.g. technological) content of heterogeneous orders not only mediates but also stabilizes their composition and renders these durable, overcoming the problem of evanescence that are encountered in baboon society (Callon and Latour 1981). That said, however, Schatzki does not follow Latour in treating humans and nonhumans symmetrically – in allowing the source of agency as between humans and nonhumans to be resolved reflexively through network formation – but makes the (metaphysical, sociological) assumption that initiative resides primarily with humans within human society. This approach assumes a distinction and discontinuity between human and non-human materiality that is, however, difficult to sustain in practice, involves an act of faith that prejudges circumstances, and indicates that (of the two) Latour's work is not only the more radical but also the more realistic.

Callon and Latour have criticized sociologists because they either help macro-actors to grow more vigorous by asserting that these really do exist (macrosociologists), or they deny that such actors exist and on this basis deny us the right to investigate them (microsociologists) (Callon and Latour 1981, 280). Rather than erasing scale as a theoretical notion, ANT and post ANT accounts therefore reinterpret such macro-structures as topological phenomena in their own right, as constructs produced from long networks in which records circulate and translations are effected:

> *There are* of course macro-actors and micro-actors, but the difference between them is brought about by power relations and the constructions of networks that will elude analysis if we presume a priori that macro-actors are bigger than or superior to micro-actors . . . (Callon and Latour 1981, 280; see also Latour 1990; Thrift 1995)

We are therefore encouraged to ask how differences of size within totalities that embrace everything are constructed in practice, a question that we can perhaps begin to answer by addressing the kinds of practices identified above (see also Callon and Law 2004, 4–5). But Marston *et al.* suggest that there are only three options regarding the scale paradigm: to accept and augment the hierarchical view, to develop a hybrid approach that integrates vertical and horizontal understandings, or to abandon scale and put an alternative in its place (Marston *et al.* 2005, 419–20). They therefore overlook this fourth, deconstructionist, option and with it the possibility that scale talk cannot simply be purged from the geographical lexicon. Indeed, if we follow Callon and Latour, then whilst 'scale' would exit the language of human geography from one side as an explanans, it would return to this from the other side as an explanandum, as something that is amenable to ANT-like (or perhaps Deleuzian) deconstruction in terms of heterogeneous networks (or endo/exo-events).

ANT and post ANT topologies are good at showing how the composition of entities and orders is accomplished in practice, avoid the descriptive holism to which neo-Marxist political economy is generally prone, and (on the evidence of an initial assessment set out above) offer a potentially rich ANT-like account of nested spatial scales. But the Deleuzian distinction between the actual and the virtual gives Marston *et al.*'s framework a power and dynamism that Latour's lacks, perhaps helping it to avoid the deadpan sense of happenstance that informs so much actor-network theory. It is by invoking this model and by highlighting its applicability that in my opinion Marston *et al.* make their most telling contribution – although it remains to be seen whether it will be able to produce the kind of empirical focus that is offered by ANT. The critique of scale writings that the authors develop also points, however, towards a different kind of deconstruction – one that raises other questions about their paper, about the project of eliminating scale and of purging structural ontology. Indeed, the deconstruction which is sketched out above suggests that the problems with scale analysis go well beyond simple error and express a wider tendency, a wider logocentrism or metaphysics of presence within the language of human geography. The lesson of Derrida's many deconstructions is, however, that it is impossible to jump clear of metaphysics in one bound, that it is necessary rather to work metaphysical terminology back against itself, to displace and reinscribe this terminology into the context from which it has come:

> There is no sense in doing without the concepts of metaphysics in order to shake metaphysics. We have no language – no syntax and no lexicon – which is foreign to this history; we can pronounce not a single destructive

proposition which has not already had to slip into the form, the logic, and the implicit postulations of precisely what it seeks to contest. (Derrida 1978, 280–1)

There is therefore a danger that by purging scale too hastily its replacement will remain within the metaphysical circuit, and within the spatial structuralism, from which it seeks to escape.

Acknowledgements

References

Akrich M and Latour B 1992 A summary of a convenient vocabulary for the semiotics of human and nonhuman assemblies in **Bijker W and Law J** eds *Shaping technology/building society: studies in sociotechnical change* MIT Press, Cambridge 259–64

Callon M and Latour B 1981 Unscrewing the big Leviathan: how actors macro-structure reality and how sociologists help them to do so in **Knorr-Cetina K and Cicourel A** eds *Advances in social theory and methodology* Routledge & Kegan Paul, London 277–303

Callon M and Law J 2004 Introduction: absence-presence, circulation and encountering in complex space *Environment and Planning D: Society and Space* 22 3–11

Collinge C 2005 The *différance* between society and space: nested scales and the returns of spatial fetishism *Environment and Planning D: Society and Space* 23 189–206

Deleuze G 1994 *Difference and repetition* **Patton P** trans Continuum, London

Derrida J 1973 *Speech and phenomena* Northwestern University Press, Evanston IL

Derrida J 1976 *Of grammatology* The John Hopkins University Press, London

Derrida J 1978 *Writing and difference* Routledge and Kegan Paul, London

Derrida J 1982 *Margins of philosophy* The Harvester Press, Brighton

Doel M 2000 Un-glunking geography: spatial science after Dr Seuss and Gilles Deleuze in **Crang M and Thrift N** eds *Thinking space* Routledge, London 117–35

Gough J 2004 Changing scale as changing class relations: variety and contradiction in the politics of scale *Political Geography* 23 185–211

Kurtz H 2003 Scale frames and counter-frames: constructing the problem of environmental justice *Political Geography* 22 887–916

Latour B 1990 Drawing things together in **Lynch M and Woolgar S** eds *Representation in scientific practice* The MIT Press, London 19–68

Latour B 1994 On technical mediation – philosophy, sociology, genealogy *Common Knowledge* 4 29–64

Latour B 1998 On actor-network theory: a few clarifications (http://amsterdam.nettime.org/Lists-Archives/nettime-l-9801/msg00019.html) Accessed 7 November 2005

Law J 2004 And if the global were small and noncoherent? Method, complexity, and the baroque *Environment and Planning D: Society and Space* 22 13–26

Marston S and Smith N 2001 The limits to scale? Methodological reflections of scalar structuration *Progress in Human Geography* 25 591–614

Marston S, Jones III JP and Woodward K 2005 Human geography without scale *Transactions of the Institute of British Geographers NS* 30 416–32

Mol A and Law J 1994 Regions, networks and fluids: anaemia and social topology *Social Studies of Science* 24 641–71

Rose G 1993 *Feminism and geography: the limits of geographical knowledge* Polity Press, Oxford

Rose G 1996 As if the mirrors could bleed in **Duncan N** ed *Bodyspace: destabilizing geographies of gender and sexuality* Routledge, London 56–74

Schatzki T 2001 Practice mind-ed orders in **Schatzki T, Knorr Cetina K and von Savigny E** eds *The practice turn in contemporary theory* Routledge, London 42–55

Schatzki T 2002 *The site of the social: a philosophical account of the constitution of social life and change* Pennsylvania State University Press, State College PA

Sheppard E and McMaster B eds 2004 *Scale and geographic inquiry: nature, society and method* Blackwell, Oxford

Smith N 1979 Geography, science and post-positivist modes of explanation *Progress in Human Geography* 3 356–83

Smith N 1984 *Uneven development: nature, capital and the production of space* Blackwell, Oxford

Smith N 1990 *Uneven development: nature, capital and the production of space* 2nd edn Blackwell, Oxford

Smith N 1992 Geography, difference and the politics of scale in **Doherty J, Graham E and Malek M** eds *Postmodernism and the social sciences* Macmillan, Basingstoke 57–79

Smith N 1995 Remaking scale: competition and cooperation in prenational and post-national Europe in **Eskelinen H and Snickars F** eds *Competitive European peripheries* Springer, Berlin 59–74

Smith N 2004 Scale bending and the fate of the national in **Sheppard E and McMaster B** eds *Scale and geographic inquiry: nature, society and method* Blackwell, Oxford 192–212

Smith N and Katz C 1993 Grounding metaphor: towards a spatialized politics in **Keith M and Pile S** eds *Place and the politics of identity* Routledge, London 67–83

Taylor P 1982 A materialist framework for political geography *Transactions of the Institute of British Geographers NS* 7 15–34

Thrift N 1995 A hyperactive world in **Johnston R J, Taylor P J and Watts M T** eds *Geographies of global change: remapping the world in the late twentieth century* Blackwell, Oxford 18–35

Uitermark J 2005 The genesis and evolution of urban policy: a confrontation of regulationist and governmentality approaches *Political Geography* 24 137–63

Commentary

Pro scale: further reflections on the 'scale debate' in human geography

Andrew E G Jonas

Department of Geography, University of Hull, Hull HU6 7RX
email: A.E.Jonas@hull.ac.uk

The case against – and for – scale

In a widely-anticipated paper, Marston, Jones and Woodward (2005) make a case for a human geography without scale.[1] The main premise of their argument is that scalar theorists (or 'scalists', as a colleague at my present institution likes to call them/me) are susceptible to working within the limits of a vertical ontology. By this Marston *et al.* appear to mean that scalar analysis either proceeds 'downwards' from 'scale-as-structure' (the global or meta-theoretical level) to 'scale-as-agency' (the local or the level of events and outcomes), or 'upwards' so that the arrow of causality is 'local-to-global'. This, they maintain, 'is in the end limited by top-down structural constraints' and, accordingly, 'can delimit entry into politics – and the openness of the political – by pre-assigning it to a cordoned register for resistance' (2005, 427). The main target of their criticism is work on scalar politics. Here they note that concepts and metaphors such as 'scale-jumping', 'levels of the state' or 'spaces of engagement' convey a sense that strategic action and politics operate through vertical hierarchies rather than around multiple sites of activity and resistance. More generally, Marston *et al.* have concerns about the growing amount of confusion, frustration and ambivalence surrounding the deployment of scale in human geographical knowledge and practice. Therefore they propose that we abandon notions of scale altogether.

In its place, they offer an alternative 'site-based' ontology. This ontology flattens space (and scale) into multiple sites of practices, relations, events and processes, which are both situated in place and extended through space (i.e. sites are connected to other sites). By this, they mean that

> a social site is not roped off, but rather that it inhabits a 'neighbourhood' of practices, events and orders that are folded into variously other unfolding sites. (2005, 426)

This site ontology, they suggest, opens up the possibility of a true 'politics of scale' in which social structures, power relations and hierarchies are rendered identifiable, accessible and transformable.

In my comments, I want to argue – *contra* Marston *et al.* – *pro* scale. Although recent attempts to incorporate a language of scale into the lexicon of human geography have created some unique challenges, these are not insurmountable. They arise out of genuine attempts to understand and theorize real-world contexts wherein new territorial and scalar identities, structures, practices and discourses have arisen. Given an increasing sensitivity to the production of, for example, new state spaces, extra-state territorial hierarchies and scalar discourses, it is hardly surprising that researchers have attempted critically to unpack geographic and non-geographic processes and representations of 'scale'. Instead of abandoning this task, we should communicate it more widely amongst non-geographical constituencies. To reject 'scale' altogether would be to miss out on an important dimension of thinking about and acting upon contemporary economic, political, social and environmental change. The politics of scale is partly about getting scholars of different disciplinary persuasions to embrace wholeheartedly concepts and practices of scale-spatiality.

My comments are organized around three asser-
tions. That human geographers must, first, recognize
that scalar concepts are fundamental to the organi-
zation and presentation of human-geographical
narrative and that this is a challenge in itself;
second, pay less attention to an epistemology of local-
to-global (or equivalents) and more to one of the
'inbetweenness' of scale; and, third, try to work
with rather than around or outside particular
scalar categories, not least 'the local'.

Tales of scales: a note on narrative and explanation in human geography

The new regional geography and problems of scaling narrative

In recent years, geographers have struggled with
ways of incorporating concepts of scalar process,
structure and difference into their analyses of
social and economic change. For a while, the new
regional geography (NRG) seemed to offer a way
of responding to the challenge of narrative (Sayer
1989). The NRG was (is?) sensitive to context,
empirics and ethnography, at the same time as it
was (is?) cognisant of the power of political-
economic and geo-historical analysis. In practice,
the NRG struggled to work with different spatial
scales (from the world-economy to the micro-
social), and all-too-often privileged 'localities' as
providing the most fertile ground for geo-historical
synthesis (Jonas 1988). The 'locality debate' (Smith
1987; Cooke 1987) taught us *inter alia* that thinking
critically about and through scalar categories is
essential to the ways that human geographers need
to come to terms with the changing world around
them, not least because important causal processes
seem to operate in a scalar dimension. If nothing
else, the ensuing discussions have opened up a
world of *multiple* scales. It has freed our narratives
from the singular and limiting preoccupations of
locality on the one hand, and of globality on the
other.

Nonetheless, the relationship between scale,
process and explanation continues to pose enor-
mous challenges for received conventions of narra-
tive, theory and epistemology. As Sayer (1989)
indicated, the unexamined use of scalar (or any
other) categories is no substitute for the hard work
of geo-historical synthesis. Here it is important to
recognize that structuring narratives around scales
is not necessarily the same thing as engaging in

causal analysis. In practice, it may be true that
some analysis does, in effect, elide claims about
the dominance of the global scale with causality
but the theoretical claims of the NRG emphasize
synthesis *and* analysis, abstraction *and* empirical
investigation. To imply that 'scalists' deal with the
one and not the other amounts to riding roughshod
over the NRG and denigrating the necessity of
thinking critically through and with scale-spatiality
(Jonas 1994).

It is also true that geographers of all stripes have
sometimes appeared to offer rather crude scalar
frameworks that appear to act as pre-given spaces
or domains of social and economic life. In some
cases, the scalar hierarchy is rendered explicit in
the form of an 'ordering-framework' narrative tech-
nique, such as in Peter Taylor's (1982) seminal
paper, and subsequently the book (Taylor and Flint
2000), on the world-economy, nation-state and
locality, or in Gill Valentine's (2001) text on social
geography. How much this is a function of what
Sayer (1989) calls the 'problem of narrative' and
how much it is a genuine substitute for causal ana-
lysis or critical synthesis is less clear. Something
important is happening here that suggests that any
attempt to abandon scale *tout court* is likely to
impose unrealistic limitations on narrative. Is it
productive to accuse 'scalists' of a preoccupation
with the territorial hierarchies through and around
which political and economic spaces of capitalism
and the state are reworked if such reworking is
indeed what is happening? The reworking of these
spaces is not necessarily caused by structures,
processes and mechanisms that themselves consti-
tute vertical relationships; rather they are com-
prised of complex and spatially co-determined sets
of processes, structures, contingencies and outcomes.
Synthesis of the sort demanded by the NRG is not
a question of meshing the vertical (structure, scale,
etc.) and the horizontal (agency, network, etc.);
rather it is a way of writing about complex processes
of change that occur around multiple sites and
scales, and in ever-changing spatial, temporal and
scalar settings. Marston *et al.* are therefore correct
in their belief that these processes do not converge
around discrete scales and territorial hierarchies,
but unambiguously misguided in their claim that
those of us who work with scalar concepts believe
that such elegant structures and categories actually
exist, other than as heuristic abstractions.

Now one can think of circumstances where
'scale' in the sense of 'size' and/or 'geographic

scope' *can* be causal in the sense that certain scalar properties of an object, process or activity make a difference to the way it operates or to the ways that groups act upon its knowledge-context. Take, for example, debates around schools desegregation in the United States. One thing I discovered in the course of my research was that discourses and struggles around desegregation have often changed – and do change – depending on whether they have been framed in relation to neighbourhoods, suburbs, central cities, metropolitan areas, or the federal level, respectively and together. These scalar frames have informed strategic actions on the part of interest groups and coalitions, which otherwise conduct their struggles in terms of discourses of race, colour, class, age, parenthood, and so forth. For example, the ongoing fiscal fallout of suburbanization coupled with so-called 'white flight' has created a space where debates about metropolitan re-integration as a territorial 'solution' have once again come to the fore, prompting attempts to organize commensurate scalar divisions of labour inside, or alongside those of, the state (Cox and Jonas 1993). Here thinking in terms of scale *can* be empowering, provided one is clear as to what these categories contain (material resources, pressure on state agencies by social groups, fiscal powers, legal liabilities, etc.). Yet one only has to think about the legacy of forced transportation of students across school catchment-area boundaries to appreciate the limitations of, for example, attempts to impose a 'metropolitan' solution on recalcitrant 'local' (suburban school-district, neighbourhood, middle class, parental, white, black, etc.) interests. To say that something significant is happening at a particular 'scale' (e.g. the 'metropolitan') is not necessarily saying that it is *that particular* 'scale' which 'decides' (cf. Swyngedouw 1997).

Consumption, the politics of distribution and scale

In an earlier intervention, Marston (2000, 233) argued that contemporary writings about scale have been preoccupied with production and have failed to comprehend the real complexity behind the social construction of scale. Yet one very important contribution of work around scalar politics has been to reveal the complex ways that scalar-defined geographic processes, operating simultaneously and in combination with each other, variously empower or disenfranchise economic and social actors. It has also aided in demonstrating how struggles for social recognition, political identity and social justice are framed by, or represented at, different spatial scales (Walsh 2000). I would strongly suggest that it is misleading to represent work on scalar politics as over-concerned with production, state levels and fixed territorial hierarchies to the neglect of how social reproduction and consumption processes are implicated in the politics of rescaling. The example of work on school desegregation above or Michael Brown's studies of AIDs, citizenship and the politics of identity suggest otherwise (Brown 2000).

Consider, for example, the writings of one key figure in the 'scale debate', Eric Swyngedouw. In commenting on the 'European project' of monetary and political integration, Swyngedouw notes that:

> The upscaling of the economy in a context of trimmed-down national redistributive mechanisms [has] intensified interplace and interregional competition, contributed to an acceleration of processes of exclusion and marginalisation, and deepened social polarisation in ways that ties down a growing part of the European population in unemployment, poverty, and reduced citizenship rights. (2000, 72–3)

In the spirit of Marston *et al.*, Swyngedouw could be accused of 'vertical' thinking here (alongside functionalist reasoning, sweeping generalizations and a lack of attention to causality), though accusations that the debate ignores the scalar politics of social reproduction and distribution are evidently wide of the mark. However, easy accusations are no substitute for critical engagement: a closer reading of Swyngedouw's writing reveals imaginative ways that scalar-hierarchical metaphors are being deployed ('upscaling of the economy', 'national redistributive mechanisms', etc.) alongside non-scalar hierarchical metaphors ('ties down', 'trimmed down', 'deepened social polarisation', etc.). This language conveys a powerful sense of the messy way that real structures and processes operate. Swyngedouw often mixes metaphors with causal reasoning; but he does not ignore sites and scales of social reproduction, nor is he found wanting in the creative use of scalar metaphor. Marston's own writings reveal how difficult it is *not* to invoke scalar concepts in writing about consumption and social reproduction, as exemplified by the following extract:

> In addition to the household as a *site* of social reproduction, it is also necessary to recognize this *scale* as one where capitalist consumption practices are also entrained. (Marston 2000, 233; my emphases)

In my view, it is imperative that scalar-sensitive geographical research responds to the problem of narrative. It should examine the ways that structures and processes of scalar-territorial organization constitute forms of strategic and political action for a variety of social, economically and politically marginalized groups, or indeed for the powerful and elites. This is not to say 'scales' are the only territorial structures and forms of identity around which social actors mobilize; rather we must concern ourselves with the strategic interplay of scalar and non-scalar processes and political identities. Here a concept of scale – vertical, hierarchical or indeed site-scale – can reveal the 'inbetween-spaces' of action, which hitherto have been marginalized in work too often preoccupied with global–local binaries, localization/globalization paradoxes or glocalization. Why not 'regionationalization'?

The 'inbetweenness' of spatial scale: why (for example) regions continue to matter

A sympathetic reading of Marston *et al.* is that they do not want to ditch *all* work on scale but that their particular concern is with recent work on state rescaling and the re-territorialization of capitalism (the work of Neil Brenner (1998) is especially evocative). In so far as it explores the reworking of state territorial hierarchies and regulatory structures, this work could be accused of capital-centric logic and functionalism but not an obsession with hierarchy or scale *per se*. By replacing scalar constructs with a site-based epistemology, Marston *et al.* seem to be privileging non-scalar represent-ations and categories over and above spatial (scalar) concepts and identities. The difficulty here is that any emphasis put on the site, place, practice, agency, social reproduction, the home, the local and so forth, requires implicitly or explicitly situating such concepts in relation to what (spatially) they are assumed *not* to be, i.e. the global, region, network, extensiveness, hierarchy, flow, scope, etc. It is an ontology of space that in effect collapses one 'scale' or 'site' onto another and, in doing so, under-privileges the *inbetweenness* of processes, sites, agencies, flows, etc., many of which work at 'scales' that are neither simply 'local' nor 'global'.

Geographers are becoming more attuned to rela-tional approaches to spatiality. Take, for example, recent work on the 'region'. For human geographers, the region carries with it enormous intellectual baggage, almost to the point that the discipline is replete with attempts to undermine, reject and abandon the concept altogether. Yet time and again the 'region' reasserts itself and each time the way we write about the 'region' changes so that we no longer think of it as a fixed geographic scale but more as a relational and political construct (Jones and MacLeod 2004). The 'region' is less a material object, a static geographic category or a taken-for-granted scale and much more a subject with iden-tity, a strategic domain, an object of struggle and/or a site-and-scale-in-the-process-of-becoming.

For example, recent years have seen a healthy revival of interest in the region both as a site of economic activity and scale for socially integrating civil society (Storper 1997). There has also been growing attention to the challenge of writing about regions as real-and-imagined places and territories, which are constituted by complex forces of distan-ciation and co-presence (Soja 1996; Allen *et al.* 1998). One of the advantages of (re)thinking regions along these lines is that the 'region' can be seen to operate both as a *between* space and a *meso-level* concept, which is amenable to thinking about a spatial combination of flows, connections, proc-esses, structures, networks, sites, places, settings, agencies and institutions. This 'new regionalism' is not just about trying to explain the production of a particular *scale* of economic and social life but also represents a new way of approaching 'regions' theoretically as strategic *sites* in the geography of capitalism after Fordism (Lipietz 1993).

To be sure, there has been a tendency of late in regional political-economic analysis to separate the economic from the political, to talk of regional eco-nomic spaces as if they can be treated as analyti-cally distinct from spaces of political regionalism (Jones and MacLeod 2004). This is a deeply prob-lematic position, but it is not the same problem as treating regions as levels in a territorial hierarchy or causal chain. A *scalar* ontology could in fact help to recombine knowledge of the economic and the political in the study of regions. One can, for exam-ple, point to a need to recognize the potential for counter-regionalist processes to operate within and across regional economies or to acknowledge that as a political project or social movement the new regionalism cannot avoid but to work around and through pre-existing spaces and scales of national, regional and local state structures (Jonas and Pin-cetl 2006). These structures are all interconnected through particular configurations of fiscal flows,

social movements, agencies, power relations and democratic practices. Whether or not these territories form scalar *hierarchies* (i.e. the flows and linkages are 'top down' or controlled 'from above') is a function of the precise geographical direction of flow and connections between each 'space' or 'level' of state and governance. Here it would be almost impossible not to use the language of scale to describe and explain how different economic and political projects converge, or come into conflict, at or around the region.

The point is not that we should abandon the region altogether as a (discrete) scalar or theoretical construct but that we should be explicit about how different scalar and non-scalar understandings come into play in the making of regions as new economic and political spaces. There is something causally and politically important about the 'region', but one does not necessarily need a concept of the 'region-as-scale-in hierarchy' to discover why this might be the case.

The 'local', political empowerment and geographic scale

Although Marston *et al.* are primarily concerned about vertical thinking in approaches to scale (or what they characterize as local-to-global approaches), it seems to me that more work needs to be done on thinking through and about the 'local' as a scalar category in its own right. Whilst I am not of the view that concepts of local should be replaced henceforth by those of 'site', 'place', 'home' or any other non-scalar language (there seems to be an assumption in Marston *et al.*'s critique that these concepts *can* replace the local), I can see where there are limits to an epistemology that starts out from the 'local'. Methodologically, geographical research has to start from some*where* – looking from 'in here' to 'out there' or from 'out there' to 'in here' – and usually this involves starting out at a particular geographic scale (as in looking at a scalar-economic process like mergers of global corporations, examining an international or national environmental organization, or working with a set of data constructed at or around some sort of identifiable scale like the city or metropolitan area). In doing this, some researchers on the politics of scaling are working 'up' from a 'local' perspective; but many are working 'out' from the region or 'in' from the nation-state. It is perhaps more the case that they are using other (non-local) concepts and

categories to unpack the causal and political significance of 'the local' or 'the global', and that there is much more to this than a belief that by working 'out' from the local one is therefore likely to be engaging in a transformative politics.

Although often accused of an over-preoccupation with the national scale and the nation-state, political geographers have proven quite sensitive to the strategic interplay *between* scalar structures and identities as, for instance, when thinking about the 'local', the 'regional' and the 'national' in social movement activity and political party organization (Miller 1994; Agnew 1995). An important development here has been moving away from ideas about the control of groups in place – authoritarian governance – to a view of the ways that place- or site-based groups transcend or engage with the territorial structures that contribute to their domination or empowerment (e.g. those of the state, capital, civil society, etc.). From the notion that social and political movements are constructed unevenly from place-to-place, they now occupy a position that the scalar organization of social movements and struggles for access to, for example, local, regional, national and trans-national instrumentalities and resources are primary strategic-theoretical concerns. Cox (1998) develops this theme in making a distinction between spaces of dependence (the spatial embedding of various economic actors and organizations) and spaces (scales) of engagement (the ways that these actors and organizations draw upon resources and instrumentalities available outside their spaces of dependence). Although Marston *et al.* interpret Cox's approach to local politics as an example of 'examining scale from underneath' (2005, 419), there is nothing in this approach that places ontological or epistemological priority on the 'local' *per se*; nor is it working with the 'local' simply as a lens through which to examine wider processes. Instead, it is concerned with untangling the conditions that produce politics of a 'local' form. Any approach that does not recognize the constitutive role of scalar-organized material resources, scalar identities and scaled discourses in political struggles and social movements – and surely a human geography without scale is one such approach – is likely to come unstuck very quickly.

To equate scalar hierarchies with a vertical (and by implication state- or capital-centric) view of political action and change is misleading. Empowerment is more than simply a question of jumping

'up' (or 'down') scales – of moving out from a 'local' context that production, social reproduction and consumption occur to engage with wider sites and scales of spatiality. Rather different site-scalar configurations and territorial structures create opportunities for a variety of different site-scalar-strategic actions. Spatial-material scales and identities are constantly defined/redefined through struggles; the dialectic of social empowerment and disempowerment depends upon control at different site-scales; resistance to these 'scales'; and the ways that concepts and practices in turn facilitate such resistance. As many participants in the scale debate recognize, scales are not fixed geographical structures, pre-assigned arenas of action or static identities; they are dynamic and always constituted in and through strategic actions and struggle (Swyngedouw 1997). Moreover, scale is a lens through which to think about and act upon change. To ignore this process by rejecting any concept or category of geographic scale out-of-hand amounts to a denial of the necessary scale-spatiality of social, economic and political life.

Even when geographers have (and for very good reasons) asserted 'the power of the local' in the face of relentless globalization processes, there is no presumption that empowerment is a case of breaking out of the limits of the local or that the local itself is not scalar-structured from within in complex ways. For example, much of the recent work on diverse economies suggests the importance of working beyond 'local–global binaries' not least because this provides a lens through which to think about the possibility of alternative ways of organizing social and economic life at all scales (Gibson-Graham 2002). Yet when one looks more closely at how alternative economic and political practices unfold in particular geographical contexts, local and extra-local conditions facilitate or block alternative actions. Local alternatives can develop spontaneously without reference to economic discourses or practices constructed around the global; and often what might be defined as 'local economies' are in fact products of *national* rather than global (or local) structures. The clear consequence is that a site-based ontology offers little prospect of identifying non-site-specific conditions for the creation of diverse and alternative economies.

In fact, a site-based ontology of strategic action would, in reality, find it impossible not to invoke collective identities, structures and resources that have some sort of scalar configuration. By focusing on the limits of local-to-global analysis and replacing it with a site or action-based epistemology, such a perspective says little about the advantages of locally-oriented action, of the importance of 'staying local' or of protecting interests, ideals and values that might in a practical sense best be constructed in terms of local, collective identities.[2]

Conclusion: for scale

I end my commentary with the observation that the incorporation of scalar constructs and categories into human-geographical narratives in recent years has transformed the discipline for the better. Scalar-attuned critical synthesis has the potential to reinvigorate our contribution to social scientific knowledge of economies, regions, places, nations and globalization. This is a challenging task. My own attempts to educate non-geographers about emerging debates around scale and spatiality have usually fallen well-and-truly (like Marston *et al.*'s proposed ontology) 'flat', as happened at a conference of urbanists in New Orleans in 1994. Yet I remember thinking at the time it was telling that at the very same conference much of the discussion was about replacing urban policies with policies for metropolitan regions. I was faintly amused by this sudden and unexamined scalar shift in policy analysis. A dozen years later, and the city, region and people of New Orleans confront a crisis of a magnitude that resonates appropriately with discourses of scale, hierarchy and power.

Marston *et al.*'s attempt to abandon scale will have the effect of replacing productive ideas of scalar structuration with a false 'site-versus-scale' dualism. Upon close inspection, many so-called 'scalists' are not writing about 'scales-as-fixed-structures'; nor are they treating scalar territories as 'vertical structures' or 'rational abstractions' in the realist sense. Instead, they are responding to the challenge of narrative and deploying scalar categories in ways that attempt to show how particular material structures and processes have become fixed at or around certain sites and scales, are in the process of becoming unfixed at a specific scale, or combine to differentiate the world in complex scalar and site-specific dimensions. Long may this activity continue.

Geography has much to thank the main protagonists in the 'scale' debate for, not least Peter Taylor

and Neil Smith for starting it, Doreen Massey, Ritchie Howitt, Neil Brenner, Anssi Paasi, Kevin Cox, Andy Mair, John Agnew, Helga Leitner, Andy Herod, Melissa Wright, Eric Sheppard, Eric Swyngedouw, Mark Purcell and a host of others for sharpening the debate, and Sallie Marston, John Paul Jones and Keith Woodward for having the courage to argue that we *might* be better off without it. Here, I have argued that even if we cannot have *a* theory of scale, nor can we envision a human geography *without* scale. Such a disciplinary orientation creates a world without spatial difference or connection, devoid of identities and hierarchies of a territorial nature: in short, a world without human geography. Do we really want that?

Acknowledgements

Notes

1 Earlier versions of the Marston *et al.* paper were presented at packed sessions at the IGU-RGS/IBG annual conference in Glasgow (2004) and the AAG annual conference in Denver (2005). I was able to attend both conferences and participated in some of the debate and responses to Marston *et al.* These reflections respond both to the general tenor of the debates at these events and the published version of their paper.

2 In some work Duncan Fuller and I have been doing on credit unions in Great Britain, we have been thinking about the ways that struggles inside the credit union movement have involved a struggle for control over and around the 'local' and 'national' scales, respectively and together, not least in terms of how to create materially and socially sustainable and *locally* accessible financial alternatives (Fuller and Jonas 2002). In this respect, it is misleading to talk of 'local' alternatives as if these occur around sites that have no relationship with – or indeed are not in opposition to – what is happening at the 'national' and 'international' scales. Moreover, in thinking about *local* financial alternatives, it makes a big difference whether one is talking about community (residential) credit unions or city-wide (work-live) credit unions. The 'local' itself is constituted by other scalar-structured relations and processes.

References

Agnew J 1995 The rhetoric of regionalism: the Northern League in Italian politics, 1983–1994 *Transactions of the Institute of British Geographers* 20 156–72

Allen J, Massey D and Cochrane A with Charlesworth J, Court G, Henry N and Sarre P 1998 *Rethinking the region* Routledge, London

Brenner N 1998 Between fixity and motion: space, territory and place in the social production of spatial scale *Environment and Planning D: Society and Space* 16 459–81

Brown M P 2000 *Closet space* Routledge, London

Cooke P 1987 Clinical inference and geographic theory *Antipode* 19 407–16

Cox K R 1998 Spaces of dependence, scales of engagement and the politics of scale, or: looking for local politics *Political Geography* 17 1–23

Cox K R and Jonas A E G 1993 Urban development, collective consumption and the politics of metropolitan fragmentation *Political Geography* 12 8–37

Fuller D and Jonas A E G 2002 Institutionalising future geographies of financial inclusion: national legitimacy versus local autonomy in the British credit union movement *Antipode* 34 85–110

Gibson-Graham J K 2002 Beyond global vs. local: economic politics outside the binary frame in **Herod A and Wright M** eds *Geographies of power: placing scale* Blackwell, Oxford 25–60

Jonas A E G 1988 A new regional geography of localities? *Area* 20 101–10

Jonas A E G 1994 The scale spatiality of politics *Environmental and Planning D: Society and Space* 12 257–64

Jonas A E G and Pincetl S 2006 Rescaling regions in the state: the New Regionalism in California *Political Geography* forthcoming

Jones M and MacLeod G 2004 Regional spaces, spaces of regionalism: territory, insurgent politics and the English question *Transactions of the Institute of British Geographers NS* 29 433–52

Lipietz A 1993 The local and the global: regional individuality or interregionalism? *Transactions of the Institute of British Geographers* 18 8–18

Marston S A 2000 The social construction of scale *Progress in Human Geography* 24 219–42

Marston S A, Jones III J P and Woodward K 2005 Human geography without scale *Transactions of the Institute of British Geographers* 30 416–32

Miller B 1994 Political empowerment, local-central state relations, and geographically shifting political opportunity structures: The Cambridge, Massachusetts, peace movement *Political Geography* 13 393–406

Sayer A 1989 The 'new' regional geography and problems of narrative *Environment and Planning D: Society and Space* 7 253–76

Smith N 1987 Dangers of the empirical turn: some comments on the CURS initiative *Antipode* 19 397–406

Soja E 1996 *Thirdspace: journey to Los Angeles and other real-and-imagined places* Blackwell, Oxford

Storper M 1997 *The regional world: territorial development in a global economy* Guildford, London

Swyngedouw E 1997 Neither global nor local: 'Glocalisation' and the politics of scale in **Cox K R** ed *Spaces of globalisation: reasserting the power of the local* Guilford, New York 137–66

Swyngedouw E 2000 Authoritarian governance, power, and the politics of rescaling *Environment and Planning D: Society and Space* 18 63–76

Taylor P J 1982 A materialist framework for political geography *Transactions of the Institute of British Geographers NS* 7 15–34

Taylor P J and Flint C 2000 *Political geography: world-economy, nation-state and locality* Longman, Harlow

Valentine G 2001 *Social geographies: space and society* Prentice Hall, London

Walsh J 2000 Organising the scale of labor regulation in the United States: service-sector activism in the city *Environment and Planning A* 32 1593–610

Commentary

The 'ontological turn' in social theory. A Commentary on 'Human geography without scale', by Sallie Marston, John Paul Jones II and Keith Woodward

Arturo Escobar

Department of Anthropology, University of North Carolina, Chapel Hill, NC 27599-3115, USA
email: aescobar@email.unc.edu

Assemblages and 'flat alternatives'

'Human geography without scale' is a complex argument about scale, space, ontology and social theory itself. Although I am not an expert on these issues – and certainly not on the rich literature on scale and space – I found the paper to be one of the most thought-provoking I have read in a long time; this is perhaps because I have been thinking for some time about related issues, particularly in connection to place and networks. Marston, Jones and Woodard's argument, I feel, is intended to entice the theoretical and political imagination into alternative conceptions of space and scale.

What is most exciting about the argument for me is that it is part and parcel of what seems a growing, and daring, attempt at looking at social theory in an altogether different way – what could broadly be termed 'flat alternatives'. The language itself is indicative of this aim: flat versus hierarchical, horizontality versus verticality, self-organization versus structuration, emergence versus transcendence, attention to ontology as opposed to epistemology, and so forth. Whether all of this amounts to a complete overhaul of the notion of scale, I think, remains an open question (more on this below). Notwithstanding, the argument stands sharply and firmly on its own. In this short Commentary, I would like to place it in the context of the larger trend in social theory to which I just alluded. One of my main sources is cited but not discussed in the article, and this is the framework developed by Manuel de Landa out of what I believe are two of the most important sources for flat ontologies: theories of complexity, particularly in the natural sciences, and the philosophy of Deleuze and Guattari.

It is important to mention that flat alternatives and theories of complexity and self-organization have not emerged in a vacuum; the history of their most important antecedents is rarely told, since they pertain to traditions of thought that lie outside the immediate scope of the social sciences. These include cybernetics and information theories in the 1940s and 1950s; systems theories since the 1950s; early theories of self-organization; and the phenomenological biology of Maturana and Varela. More recently, the sources of flat alternatives include some strands of thought in cognitive science and informatics and computing; complexity theories in biology; network theories in the physical, natural and social sciences; and Deleuze and Guattari's 'neo-realism'. One could also see Foucault's work within this frame – e.g. Foucault's theory of the archaeology of knowledge may be seen as a theory of autopoiesis and self-organization of knowledge; his concept of 'eventalization' resembles recent proposals in assemblage theory; and his conception of power anticipated developments in actor-network theory.

Flat alternatives can also be seen as building on, and responding to, the various waves of social constructionism, deconstruction and discursive approaches of the past few decades. These movements

brought with them a critique of realism as an epistemological stance. It is not yet readily recognized that some of the most interesting social theory trends at present, including flat ontologies, entail a return to realism. Since this is not a return to the naïve realisms of the past (particularly the Cartesian versions, or the realism of essences or transcendent entities), these tendencies might be called neo-realists. One could use other viable metaphors for the emerging social theories, such as 'biological sociologies', a term applied to the phenomenological biology of Maturana and Varela (1980) in particular, or new materialist sociologies (e.g. actor-network theories). Deleuze and Guattari have inspired some of these developments, including Manuel de Landa's extended commentary on these philosophers (2002) and his own neo-realist assemblage theory (2005).[1] Deleuze, in de Landa's view and unlike many constructivists, is committed to a view of reality as autonomous (mind-independent); reality is the result of dynamical processes in the organization of matter and energy that leads to the production of life forms (morphogenesis); things come into being through dynamical processes of matter and energy driven by intensive differences; these processes are largely self-organizing. This view amounts to 'an ontology of processes and an epistemology of problems' (2002, 6). Deleuze's morphogenetic account, in other words, makes visible the form-generating processes which are immanent to the material world.

A central aspect in de Landa's social ontology arises from Deleuze's concept of the virtual. There are three ontological dimensions in the Deleuzian world: the virtual, the intensive and the actual. The larger field of virtuality is not opposed to the real but to the actual. This is a very different way to think about the relation between the possible and the real – here, the possible is not thought about in terms of a set of pre-defined forms that must retain their identity throughout any process of change, thus already prefiguring the end result (this is one of the most fatal, and self-serving, modernist assumptions, since it precludes real difference). The actualization of the virtual in space and time entails the transformation of intensive differences into extensive (readily visible) forms through historical processes involving interacting parts and emerging wholes; this leads to what de Landa calls 'a *flat ontology*, one made exclusively of unique, singular individuals, different in spatio-temporal scale but not in ontological status' (2002, 47).

> The existence of the virtual is manifested . . . in the cases where an assemblage meshes differences as such, without canceling them through homogenization. . . . Conversely, allowing differences in intensity to be cancelled or eliminating differences through uniformization, effectively hides the virtual and makes the disappearance of process under product seem less problematic. (2002, 65)

This concealment is the result of human action – hence the need to investigate the unactualized tendencies of the virtual wherever they are expressed.

Based on a careful reconstruction of Deleuze's concepts, de Landa goes on to propose his own approach to 'social ontology' as a way to rethink the main questions of classical and contemporary sociology (including notions of structure and process, individuals and organizations, essences and totalities, the nation-state, scale, markets and networks). His goal is to offer an alternative foundation for social theory (an alternative 'ontological classification' for social scientists). His starting point is the realist stance of asserting the autonomy of social entities from the conceptions we have of them. This does not mean that social science models do not affect the entities being studied, which certainly happens in many cases; this was one of post-structuralism's stronger arguments. It means that the focus of realist social ontology is a different one; the focus is on the objective, albeit historical, processes of assembly through which a wide range of social entities, from persons to nation-states, come into being. The main objects of study are 'assemblages', defined as wholes whose properties emerge from the interactions between parts; they can be any entity: interpersonal networks, cities, markets, nation-states, etc. The idea is to convey a sense of the irreducible social complexity of the world. Assemblage theory is thus an alternative to the organic or structural totalities postulated by classical social science. It does not presuppose essential and enduring identities.

A particular problem for social theory is the causal mechanisms that account for the emergence of wholes from the interaction between parts; this impinges on the question of the micro and the macro, and so on scale. Conventional approaches assume two levels (micro, macro) or a nested series of levels (the proverbial Russian doll). The alternative approach is to show, through bottom-up analysis, how, at each scale, the properties of the whole emerge from the interactions between parts, bearing in

mind that the more simple entities are themselves assemblages of sorts. Moreover, through their participation in networks, elements (such as individuals) can become components of various assemblages operating at different levels. This means that most social entities exist in a wide range of scales, making the situation much more complex than in conventional notions of scale:

> Similar complexities arise at larger scales. Interpersonal networks may give rise to larger assemblages like the coalitions of communities that form the backbone of many social justice movements. Institutional organizations, in turn, tend to form larger assemblages such as the hierarchies of government organizations that operate at a national, provincial, and local levels. . . . All of these larger assemblages exist as part of populations: populations of interpersonal networks, organizations, coalitions, and government hierarchies. (de Landa 2005, ch 2, 6)

The processes of assembly through which physical, biological or social entities come into being are recurrent. This means that assemblages always exist in populations that are generated by the repeated occurrence of the same processes. It is through collectivities interacting with one another that assemblages develop many of their features or become more or less stable macro-assemblages. There is recurrence of the same assembly process at a given spatial scale, and recurrence at successive scales, leading to a different conceptualization of the link between the micro and the macro levels of social reality. For de Landa, the question becomes:

> How can we bridge the level of individual persons and that of the largest social entities (such as territorial states) through an embedding of assemblages in a succession of micro and macro scales? (2005, ch 2, 7)

For the case of markets, for instance, this means showing how differently-scaled assemblages operate, with some being component parts of others which, in turn, become part of even larger ones. In his historical work on the development of markets, de Landa (1997) shows how larger entities emerged from the assembly of smaller ones (including town, regional, provincial, national and world markets, following the Braudelian explanation).

In sum,

> social assemblages larger than individual persons have an objective existence because they can causally affect the people that are their component parts, limiting them and enabling them, and because they can causally affect other assemblages at their own scale. The fact

that in order to exercise their causal capacities, internally as well as externally, these assemblages must use people as a medium of interaction does not compromise their ontological autonomy any more than the fact that people must use some of their bodily parts (their hand or their feet, for example) to interact with the material world compromises their own relative autonomy from their anatomical components. (2005, ch 2, 9)

To sum up:

> The ontological status of any assemblage, inorganic, organic or social, is that of a unique, singular, historically contingent, individual. Although the term 'individual' has come to refer to individual persons, in its ontological sense it cannot be limited to that scale of reality. . . . Larger social assemblages should be given the ontological status of individual entities: individual networks and coalitions; individual organizations and governments; individual cities and nation states. This ontological maneuver allows us to assert that all these individual entities have an objective existence independently of our minds (and of our conceptions of them) without any commitment to essences or reified generalities. On the other hand, for the maneuver to work the part-to-whole relation that replaces essences must be carefully elucidated. The autonomy of wholes relative to their parts is guaranteed by the fact that they can causally affect those parts *in both a limiting and an enabling way,* and by the fact that they can interact with each other in a way not reducible to their parts, that is, in such a way that an explanation of the interaction that includes the details of the component parts would be redundant. Finally, the ontological status of assemblages is two-sided: as actual entities all the differently-scaled social assemblages are individual singularities, but the possibilities open to them at any given time are constrained by a distribution of universal singularities, the diagram of the assemblage, *which is not actual but virtual.* (2005, ch 2, 10, 11; emphasis added)

The above explanation is by necessity schematic. Let me mention a few other aspects of de Landa's assemblage theory of interest to the argument about scale. Assemblage theory seeks to account for the multi-scaled character of social reality, and provides adjustments to this end. First, it recognizes the need to explain the historical production of the assemblage, but without placing emphasis only in the moment of birth (e.g. as in the origin of a given collectivity or social movement) or on the original emergence of its identity at the expense of the processes that maintain this identity through time. Second, assemblages are produced by recurrent processes; given a population of

assemblages at one scale, these processes can generate larger-scale assemblages using members of existing populations as components. Assemblages (e.g. organizations), in other words, come into being in a world already populated by other assemblages. Finally, there is the question of how assemblages operate at longer time scales. Does it take longer to effect change in organizations than in people, for example? In general, the larger the social entity targeted for change, the larger the amount of resources that must be mobilized. This implies that the spatial scale does have temporal consequences since the necessary means for change may have to be accumulated over time. There is no simple correlation, however, between larger spatial extension and long temporal duration. In the case of assemblages that do not have a well defined identity, such as dispersed, low-density networks, this dynamic is a strength and a weakness at the same time: On the one hand,

> low density networks, with more numerous weak links, are for this reason capable of providing their component members with novel information about fleeting opportunities. On the other hand, dispersed networks are less capable of supplying other resources, like trust in a crisis, the resources that define the strength of strong links. They are also less capable of providing constraints, such as enforcement of local norms. The resulting low degree of solidarity, if not compensated for in other ways, implies that as a whole, dispersed communities are harder to mobilize politically and less likely to act as causal agents in their interaction with other communities. (2005, ch 2, 7)

Sites without scale?

Let us now return to 'Human geography without scale'. The authors are correct in stating that most conceptions of scale remain trapped in a foundational hierarchy and verticality, with concomitant problems such as micro–macro distinctions and global–local binaries. An important part of the their argument is that these problems cannot be solved just by appealing to a network model; the challenge is not to replace one 'ontological-epistemological nexus (verticality)' with another (horizontality)' but to bypass altogether the reliance on 'any transcendent pre-determination' (Marston *et al.* 2005, 422). This is achieved thanks to a flat (as opposed to horizontal) ontology that discards 'the centering essentialism that infuses not only the up-down vertical imaginary but also the radiating (out

from here) spatiality of horizontality' (2005, 422). Here flat ontology refers to complex, emergent spatial relations, self-organization and ontogenesis.

This framework also moves away from the 'liberalist trajectories' that fetishize flows, freedom of movement and 'absolute deterritorialization' at larger abstract scales that are present in some sociological and geographic theories inspired by Deleuze and actor-network theories. In contradistinction, the geographical application of flat ontology emphasizes the assemblages constructed out of composition/decomposition, differential relations and emergent events and how these result in both *systemic orderings* (including hierarchies) and *open-ended events* (akin to de Landa's limiting and enabling aspects). One conclusion is that 'overcoming the limits of globalizing ontologies requires sustained attention to the intimate and divergent relations between bodies, objects, orders and spaces' – that is, to the processes by which assemblages are formed, again with de Landa; for this, they propose to invent 'new spatial concepts that linger upon the singularities and materialities of space', avoiding the predetermination of both hierarchies and boundlessness (2005, 424). In this flat alternative, 'sites' are reconceptualized as contexts for event-relations in terms of people's activities. Sites become 'an emergent property of its interacting human and non-human inhabitants'; they are manifolds that do not precede the interactive processes that assemble them, calling for

> a processual thought aimed at the related effects and affects of its *n*-connections. That is, we can talk about the existence of a given site only insofar as we can follow the interactive practices through their localized connections. (2005, 425)

It follows that processes of localization should not be seen as the imprint of the global on the local, but *as the actualization of a particular connective process, out of a field of virtuality.* Indeed, what exists is always a manifold of interacting sites that emerge within unfolding event-relations that include, of course, relations of force from inside and outside the site. This site approach is of relevance to ethnography and anthropology as much as it is to geography. It provides an alternative to established state-centric, capitalocentric and globalocentric thinking, with their emphasis on 'larger forces', hierarchies, determination and rigid structures. In this newer vision, entities are seen as made up of always unfolding intermeshed sites. To paraphrase

a well-known work (Gibson-Graham 1996), flat approaches spell out the end of globalization (as we knew it). To the disempowering of place and social agency embedded in globalocentric thinking, these approaches respond with a new plethora of political possibilities (Gibson-Graham 2006). Some of these possibilities are being tapped into by social movements, and even by individuals seeking to become new kinds of subjects of place and space. Today, it could be argued, a good part of what movements do is precisely to enact a politics of the virtual so that other social/natural/spatial/cultural configurations might become possible (for a more extended exploration of these concepts when applied to social movements see Escobar and Osterweil forthcoming).

Open networks and distributed control

Let me now add a second source for contextualizing 'Human geography without scale' within other trends in social theory. Building on the field of biological computing, Tiziana Terranova adds useful elements to the conceptualization of networks as self-organizing systems which engender emergent behaviour. For her, networks can be thought of in terms of 'abstract machines of soft control – a diagram of power that takes as its operational field *the productive capacities of the hyperconnected many*' (2004, 100; emphasis added). Social phenomena are seen as the outcome of a multitude of molecular, semi-ordered interactions between large populations of elements. Individual users become part of a vast network culture – of the 'the space-time of the swerve', which may lead to emergence (2004, 117). These systems only allow for soft control (as in cellular automata models); it is from this perspective that Terranova's definition of network ('the least structured organization that can be said to have any structure at all', 2004, 118) makes sense. The open network (such as the Internet or network of networks)

> is a global and large realization of the liquid state that pushes to the limits the capacity of control of mechanisms effectively to mould the rules and select the aims. (2004, 118)

This network culture emphasizes distributed/autonomous forms of organization rather than direct control. In short:

> The biological turn is, as we have seen, not only a new approach to computation, but it also aspires to offer a

social technology of control able to explain and replicate not only the collective behavior of distributed networks such as the internet, but also the complex and unpredictable patterns of contemporary informational capitalism. . . . The biological turn thus seems to extend from computing itself towards a more general conceptual approach to understanding the dynamic behavior of the internet, network culture, milieus of innovation and contemporary 'deregulated markets' – that is of all social, technical and economic structures that are characterized by a distributed and dynamic interaction of large numbers of entities with no central controller in charge. (Terranova 2004, 121)

This applies to many social phenomena that can be studied under the rubric of social emergence, from markets to social movements. It marks a sharp contrast to concepts of control based on Taylorism, classic cybernetics and governmentality, even if these have by no means completely disappeared. Similar to de Landa, Terranova sees pros and cons in this situation; on the downside the multitude/ mass cannot be made to unite under any common cause, and the space of a network culture is that of permanent dissonance; yet the benefits in terms of opportunities for self-organization and experimentation based on horizontal and diffuse communication (again, as in the case of many social movements) are clear. In the best of cases, the simultaneous tendencies to diverge and separate, on the one hand, and converge and join, on the other, shown by networked movements might lead to

> a common passion giving rise to a *distributed movement* able to displace the limits and terms within which the political constitution of the future is played out. (2004, 156)

The logic of distributed networks thus amounts to a different logic of the political, as a number of social movement observers are pointing out. In addition, and akin to de Landa and Marston *et al.*, Terranova envisions a cultural politics of the virtual, understood as the opening up of the real to the action of forces that may actualize the virtual in different ways.

  To sum up, a number of theories of networks of the past two decades have tried to make different sense of the contemporary logic of the social and the political. The trends based on flat alternatives, self-organization and complexity articulate notions from the perspective of an ensemble of new logics operating at the levels of ontology, the social and

the political. Flat alternatives make visible design principles based on open architectures allowing for interconnection of autonomous networks, and the potential for expansive inter-networking enabled by decentralization, resilience and autonomy. Does this entail human/natural geographies without scale, or does it necessarily lead to a conceptualization of human geography which has no longer any use for 'scale'? De Landa, as we have seen, does hold on to some notion of scale, albeit significantly transformed. More a process and a set of mechanisms of connection than a nested verticality, he sees 'differently-scale social assemblages' as individual singularities with no predetermined structures linking them up. Does this notion avoid the ontological verticality of established views of scale? Do 'embedded assemblages' (de Landa) amount to a manifold of sites which are themselves composed as a manifold (Marston *et al.*), whether with emergent and adaptive properties or not? What happens to the logic of control, to minoritarian logics, to the enabling and open-ended character of dispersed network formations dreamt up by some contemporary movements if gains cannot be thought about in terms of scalar effects? Is every politics of scale not reduced to the conjunctural integrals of dispersed power if seen in terms of a notion of horizontality and mobility, even when 'conceived as both open multi-directionally and unfolding non-linearly' (Marston *et al.* 2005, 26)? These are a few of the questions that emerged for me as I placed this important argument in the context of some other trends in theory and political practice.

Note

1 De Landa (2005) is a completed draft book manuscript but still work in progress. I have chosen to reference this work according to the chapter in question, followed by a page number that corresponds to a single space printout with a 12 point font.

References

de Landa M 2002 *Intensive science and virtual philosophy* Continuum, New York

de Landa M 2005 Social ontology. A theory of assemblages Unpublished book manuscript

de Landa M 1997 *A thousand years of nonlinear history* Zone Books, New York

Escobar A and Osterweil M forthcoming Social movements and the politics of the virtual. Deleuzian strategies in **Jensen C B and Rödje K** eds *Deleuzian intersections in science, technology, and anthropology* Berghahn, Oxford

Gibson-Graham J K 1996 *The end of capitalism (as we knew it)* Blackwell, Oxford

Gibson-Graham J K 2006 *A postcapitalist politics* University of Minnesota Press, Minneapolis MN

Marston S, Jones II J P and Woodard K 2005 Human geography without scale *Transactions of the Institute of British Geographers NS* 30 416–32

Maturana H and Varela F 1980 *Autopoiesis and cognition* Reidel, Boston MA

Terranova T 2004 *Network culture* Pluto Press, London

Commentary

Scale and the limitations of ontological debate: a commentary on Marston, Jones and Woodward

Helga Leitner* and Byron Miller**

*Department of Geography, University of Minnesota, Minneapolis, MN 55455, USA
**Department of Geography, University of Calgary, Calgary, Alberta, Canada T2N 1N4
email: bavrmill@ucalgary.ca

In their recent essay, 'Human Geography without Scale', Marston, Jones and Woodward (2005) take stock, albeit selectively, of almost 25 years of scale research and find it wanting. Given how substantial and influential the scale literature has become, not only in human geography but also now in political science, sociology and anthropology, we welcome their efforts to assess and critique this literature. We agree with a number of the specific concerns they raise, but disagree with their representation and diagnosis of the literature, as well as their call to 'expurgate scale from the geographic vocabulary' (422) and replace it with a flat ontology.

We share the concerns of Marston *et al.* regarding the recent tendency in human geography to privilege scale over other spatialities, such as networks, space, place, region and mobility, or to subsume these spatialities under a fetishized master concept of scale. To the extent that such privileging has occurred, e.g. when complex processes of resistance to neoliberal globalization are reduced to scale jumping, it has resulted in inadequate attention to the practices and spaces of everyday and not-so-everyday life. We concur that scalar discourses of globalization might contribute to the reification of the global scale and the suppression of resistance, and share their concern that certain discourses of globalization are used to obscure the particular spaces and places, e.g. boardrooms, where decisions are made. Finally, we concur with their critique of hierarchical, top-down, notions of scale that represent causal processes as necessarily high level and broad scale, 'touching down' locally. Such notions indeed obscure the myriad

local material and discursive practices through which the very fabric of globalization is produced.

Nevertheless, we take exception to their general characterization of the scale literature and the alternative they offer to remedy its purported deficiencies. Specifically, their analysis is flawed in five crucial ways. It

1 consistently conflates 'hierarchical' with 'vertical' scale and greatly overestimates the prevalence of accounts of the former;
2 ignores virtually all accounts of agency in the scale literature, painting it as not only structural but structuralist;
3 builds an argument for a flat ontology based on an analysis of abstract 'spatial imaginaries' that marginalizes the technologies of power employed in the social production of scale;
4 sets forth a flat ontology alternative that would entail an *a priori* 'expurgation' of scale from geographical research; and
5 points toward a political strategy that is unnecessarily constrained.

Conflation of 'hierarchical' and 'vertical' scale

Marston *et al.* claim that scale theorizing in geography is based on a 'foundational hierarchy – a verticality that structures the nesting so central to the concept of scale' (419) and that 'scalar hierarchies' possess a 'structuralist calculus' (423). Their interchangeable use of 'hierarchical' and 'vertical' ignores

an important distinction between these terms in much of the scale literature. The metaphor of verticality need not imply a top-down hierarchy, but rather refers to a relationship that may be 'bottom-up', 'top-down' or both simultaneously. Hierarchy is a particular form of verticality, suggestive of top-down power relations. In physical geography and ecology, scales are indeed often conceptualized this way, whereby geographically more extensive scales dominate smaller scales (Sheppard and McMaster 2004a 2004b).

> According to what is known as hierarchy theory, slower moving, larger scale processes operate as constraints, limiting the operation of smaller scale, and faster, processes. Under these conditions broader scales shape conditions of possibility at local scales, making local agency subservient to macro-logics of structural power. (Leitner and Sheppard forthcoming)

Yet broad areas of the scale literature in human geography, not reviewed by Marston *et al.*, reject this assumption that scalar power simply operates through a top-down hierarchy (e.g. Herod 1991 1997 2001; Delaney and Leitner 1997; Swyngedouw 1997a; Miller 1997 2000; Kurtz 2003; Sheppard and McMaster 2004a 2004b; McCarthy 2005). These and many other authors do not equate scale with a top-down hierarchy, do not 'assume the hierarchy in advance' (422) and do not suggest that the global sets the rules and the local accommodates. Some reject any necessary existence of top-down power hierarchies linking scales (Swyngedouw 1997a). For others hierarchies are important, e.g. in the sense that neighbourhoods are embedded in national and global space, but the larger scale need not dominate such relationships (Collinge 1999; Martin 2003). As Leitner (1997) suggests, power asymmetries between different scales are always contested and subject to struggle, including not only human actors but also non-human actants (McCarthy 2005; Swyngedouw 2005).

Marston *et al.* use theories of globalization to exemplify their claim about the hierarchical nature of scale thinking. They write that

> over the past 20 years, political and economic geographers have tended towards macro pronouncements that assigned the global more causal force, assumed it to be more orderly (if not law-like) and less contingent, and by implication relegated its other to the status of case study. (421)

While not completely unfounded, we take issue with the sweeping, exaggerated character of this claim and the way it ignores important differences within the literature. Much of the research in geography and related disciplines during the past 10–15 years,[1] rather than reifying the all-embracing power of the global, has theorized how local and transnational processes and practices are producing (materially and discursively) the very fabric of the global (Smith and Guarnizo 1998; Boudreau and Keil 2001; Katz 2001; Smith 2001; Amin 2002; Gibson-Graham 2002; Latham 2002; Nagar *et al.* 2002; Sheppard 2002; Goldmann 2005). A substantial literature analyses the roles states and institutional actors have played in creating global institutions and processes (Peck and Tickell 1994; Dicken *et al.* 1997; Weiss 1998; Yeung 1998; Swyngedouw 2000), denaturalizing any notion of globalization as a natural and immutable 'juggernaut' (427). Stressing the permeability of state territory and control (Agnew 1994; Adams 1996; Amin and Thrift 1997; Martin 1999; Sheppard 2002; Peck 2004), the power of the local in the context of globalization (Cox 1997; Escobar 2001; Miller 2004) and social struggle (Herod 1991 1998 2001; Swyngedouw 1997a 1997b 2000; Waterman and Wills 2001; Routledge 2003; Miller 2004), much of the scale and globalization/transnationalism literature foregrounds the central role of social struggle in the construction of scale and the fact that scales 'are never fixed, but are perpetually redefined, contested, and restructured in terms of their extent, content, relative importance, and interrelations' (Swyngedouw 1997a, 141). We contend that the vast majority of the contemporary literature on scale and globalization in geography and beyond does not equate the 'global' with structure and the 'local' with agency. It does, however, clearly recognize the mutual constitution of structure and agency.

Missing agents

Reading Marston *et al.* (2005), one is led to believe that agents play virtually no role in the scale literature, that the literature is only about structures and, worse yet, it is structuralist. Indeed, a search of their text shows that 'agency' and 'agents' are referred to 12 times, but never in relationship to the scale literature. By contrast, 13 of their 15 uses of 'structures' and 'structuralist' are related to the scale literature. This extremely one-sided representation ignores the literature's central theme of the 'social construction of scale' (Marston 2000) and its attention to the roles of agents in struggles that construct scale. The basic idea of scalar analysis was succinctly stated by Neil Smith early on: the 'scale of struggle

and the struggle over scale are two sides of the same coin' (Smith 1992, 74). We take two basic points from this statement: the scalar characteristics of social struggles can have important implications for the dynamics and outcomes of those struggles; scales are themselves constructed through social struggles. While the pace of scalar change varies depending upon the context and dynamics of specific social struggles, scales are anything but 'rigid'.[2] The literature on these struggles and the actual practices of scale (re)construction by actors and institutions is so vast that we cannot hope to survey it here. Fortunately, others already have. Marston's extensive 2000 survey was followed by another insightful 2004 essay analysing the central role of the women's movement in constructing and shifting the scales of social welfare provision. In her 2004 essay she also discusses a diverse range of other agents involved in the production of scale: 'nonstate level political actors such as labor, . . . political parties, . . . political activists, . . . and ensembles of urban actors known as "urban regimes" ' (2004, 174). Similarly, Howitt (2003) discusses a variety of agents constructing scalar relations, including indigenous peoples, trade unions, political parties, food corporations, urban planners, environmentalists and territorial movements. Paasi's (2004) recent survey provides another wide-ranging account of the complex processes of scale construction through agents' material and discursive practices. A recent and particularly insightful in-depth account of struggles over scale construction in the English context is provided by Jones and MacLeod (2004).

Given the prominent role of agency in the scale literature, we are at a loss to explain why all references to agency have been expurgated from Marston *et al.*'s 2005 account of the literature. It would appear they have selectively reframed the scale literature with 'scale' made to stand in for structuralism and their own 'flat ontology' standing in for agency, thus setting up a re-run of the 1980s structure–agency debate. It goes without saying that this was one of the most significant and influential debates in human geography (Gregory 1981 1994, 106–24; Duncan and Ley 1982; Chouinard and Fincher 1983; Thrift 1983; Giddens 1984; Storper 1985; Pred 1986). Frustration with deterministic structuralist formulations that denied a significant role to human agents, minimized their knowledgeability and reflexivity, reified structures as causal forces 'behind' human subjects and frequently offered functionalist explanations in which systems necessarily maintained their integrity, led

to a barrage of critiques followed by numerous innovations in social theory, ontology and epistemology. The debate fizzled out rather than being definitively resolved, but a loose consensus coalesced around: (1) the rejection of functionalism; (2) acknowledgement of agents as knowledgeable and reflexive; (3) acknowledgement of structure and agency as mutually constitutive, with agents enacting and transforming structures through their actions and structures enabling and constraining human action; and (4) recognition that social processes can be reduced neither to the sum of individual actions nor to a societal totality, rather, they must be understood as 'social practices ordered across space and time' (Giddens 1984, 2). Emphasis was placed on overcoming binaries and dualisms, seeking instead relationships and 'dualities'.

Marston *et al.* attempt to link scale research to structuralism by associating it with critical realism. But critical realism posits the mutual constitution of structures and agency; it is not structuralist. Indeed, Gregory associates the sea change that took place in human geography in the late 1980s with the rise of 'realism *rather than* structuralism' (2000, 797; emphasis added). Clearly, the structure–agency debate did not resolve all of the key dilemmas of human geography and was especially deficient with regard to epistemological issues of difference and positionality.[3] But it did represent a major break with previous structuralist formulations and a clear recognition of importance of agency. The contemporary scale literature, which we trace back to Herod's 1991 agency-focused account of labour struggles, developed in the wake of this sea change and is, not surprisingly, suffused with relational accounts of agency and structure playing out in, as well as shaping, diverse geographical contexts.

An ontological critique based on 'spatial imaginaries'

While we find Marston *et al.*'s accounts of hierarchical scale and structure versus agency to be highly skewed, we believe they have raised some important questions about the ontological status of scale that deserve to be taken seriously. Specifically, what social practices are we talking about when we talk about the social construction of scale? Definitions of scale are frequently diverse and ambiguous. In what is probably the best overview of scale definitions and their ambiguities, Howitt (2003) identifies three dimensions of scale: size, level and relation. He does not, however,

define what is meant by these terms. These terms need to be interrogated and, indeed, Marston *et al.* ground their ontological critique in an interrogation of 'scale as size' and 'scale as level'. Noting their frequent conflation in the literature, they proceed to compare them as 'spatial imaginaries', pitting metaphors of 'horizontal geographies' against metaphors of 'vertical geographies'. Ultimately they conclude that there is no difference between 'scale as size' and 'scale as level' and that 'one of the terms might be simply and effectively collapsed into the other' (420). On this basis, they contend that a notion of 'horizontality' (420, 427) can do all of the analytical heavy lifting of 'scale as size' and 'scale as level'.

Their interrogation of 'imaginaries' is premised on the notion that scale is merely an 'epistemological ordering frame' or a representational practice (420). But it is *not only* these things. It is, above all, a diverse array of material and representational practices, shot through with power. Some of the scale literature is grounded in Henri Lefebvre's (1991) theorization of the social production of space. Lefebvre's work focuses on (a) material spatial practices, especially bureaucratization (primarily involving the state) and commodification (based on the expansion of capitalist market relations), (b) representations of space, produced first and foremost through instrumental and strategic discourses of institutions of the state and capital, and (c) spaces of representation, including a wide range of discourses of everyday life and emancipatory alternatives. The inextricable intertwining of the production of space and the production of power is the overriding theme of Lefebvre's work. But concepts of power are absent from the Marston *et al.* interrogation of 'scale as size' and 'scale as level'. Instead of examining the socio-spatial power relations these terms might represent, they conduct an idealist comparison of power-emptied spatial metaphors. Whether a term draws 'one's vision downward and outward' or 'upward and onwards' (420) tells us nothing about socio-spatial power relations at play.

Marston *et al.*'s 'imaginary' critique of the scale literature points us only toward bordering practices as a technology of scale production. For Marston *et al.* scale is 'the result of marking territories horizontally through boundaries and enclosures, documents and rules, enforcing agents and their authoritative resources' (420). How these practices shape socio-spatial power relations is left severely underdeveloped, as if the socio-spatiality of life can be reduced to abstract questions of spatiality. Nonetheless, we concur that bordering practices are *one* technology of scale production. Social power is necessarily (re)constituted by bordering practices – both material and discursive – that regulate alliance building, resource mobilization, trade, investment, exploitation, labour mobility, identity construction, and more. But acknowledging this fact leads us to ask whether social power is imbricated in the social construction of scale in still other ways. Howitt (2003), after all, identifies size, level and relation as the key dimensions of scale. Bordering practices deal only with 'scale as size' or 'horizontal measure of "scope" or "extensiveness"' (420).

If one begins with the practices and power relations treated in the scale literature rather than abstract 'spatial imaginaries', one finds considerably more than bordering practices. While necessarily affected by relations of inclusion and exclusion across differentially permeable borders, power relations, processes and capacities within bounded spaces cannot be reduced to bordering practices. Processes and characteristics internal to borders also shape power relations and capacities. Different spaces, accordingly, may exhibit different socio-spatial power relations that are reducible neither to size nor bordering practices. Spaces, moreover, exist in nested relationship to other spaces, creating differential opportunities and constraints for practices of individual and collective agents. How then to conceive of these relationships? The notion of 'scale as level' points toward such differences in powers and capacities, opportunities and constraints, among nested spaces. To take a common example, a substantial portion of the scale literature deals with the regulatory practices of 'the state'. While the state is heavily implicated in bordering practices as well as entangled in power relations beyond its borders (Agnew 1994; Adams 1996; Cox 1998), its activities cannot be reduced to bordering practices. States engage in a wide range of regulatory practices relating to resource allocation, authorization, legitimation and signification. They invariably exhibit internal geographical differentiation by level, e.g. local, state/provincial, national, as well as differentiation in relationship to supra-national regional institutions and institutions of global governance, e.g. NAFTA, EU, WTO, IMF, World Bank (Peck and Tickell 1994; Goodwin and Painter 1996; Swyngedouw 1997a; Brenner 1998 2004; Swyngedouw *et al.* 2002). This differentiation is associated not only with geographically uneven development and geographically

differentiated processes of identity formation and struggle, but with differences in responsibilities and capacities that ultimately flow from social struggle. Responsibilities and capacities of different state levels, as well as relationships among these levels, are reconstituted on an on-going basis. Indeed, the scalar restructuring of state responsibilities and capacities has been one of the hallmarks of neoliberal globalization (Peck and Tickell 1994; Swyngedouw 1997a; Brenner 1998 2004). Differential resource allocation and authorization capacities, e.g. the power to tax income or profits or regulate trade, are commonly at issue. Responsibilities previously accorded to one level of the state have frequently been 'downloaded' or 'uploaded' to other levels, usually levels with considerably less capacity to allocate resources or issue authoritative rulings. This process of 'mismatched rescaling' has been integral to the neoliberal gutting of democratic institutions and their replacement by market institutions (Miller 2007). One result has been an evisceration of many forms of social welfare provision – e.g. daycare provision, social housing, education, healthcare, environmental protection, investment in public facilities – as state institutions assigned particular responsibilities lack the capacity to carry them out. Marston *et al.* will no doubt recognize a 'vertical imaginary' in this example. The far more important point, however, is that power relations have been altered through the differential restructuring of state responsibilities and capacities. The production of this new power geometry, while often intertwined with bordering practices,[4] cannot be reduced to them.

These examples by no means exhaust the range of scalar power relations. Indeed, a vast array of relationships exist among not only structures, agents and institutions operating at various scalar 'levels', but also among individual and collective agents, and structures and institutions, across scales, e.g. through constitutional or legislative mandates. Keck and Sikkink (1998) in their now classic book, *Activists Beyond Borders*, succinctly capture the complex multi-scalar relationships of transnational social movement activism:

> This focus on [transnational social movement] campaigns highlights *relationships* – how connections are established and maintained among network actors, and between activists and their allies and opponents. We can identify the kinds of *resources* that make a campaign possible, such as information, leadership, and symbolic or material capital. And we must consider the kinds of *institutional structures*, both domestic and international, that encourage

or impede particular kinds of transnational activism . . . [These relationships must be] viewed dynamically, as . . . changes in formal or informal political power relations over time. (Keck and Sikkink 1998, 7); emphasis in original.

We contend, then, that a variety of technologies of power are implicated in both the social construction of scale and the multi-scalar dynamics of social struggle. While bordering practices are an important technology of power, they are only one among several. As a corollary, 'scale as size' and 'scale as level' cannot simply be collapsed into a single 'spatiality of horizontality'.

Toward a flat ontology?

Nonetheless, Marston *et al.* argue that scale should be 'expurgate[d] . . . from the geographic vocabulary' and replaced with a 'flat ontology' (422). Drawing on Deleuze, DeLanda and Schatzki, they sketch out a conceptualization of a flat ontology based on

> analytics of composition and decomposition that resist the increasingly popular practice of representing the world as strictly a jumble of unfettered flows; attention to differential relations that constitute the driving forces of material composition and that problematize axiomatic tendencies to stratify and classify geographic objects; and a focus on localized and non-localized emergent events of differential relations actualized as temporary – often mobile – 'sites' in which the 'social' unfolds. (423)

Site is the master spatial concept in Marston *et al.*'s flat ontology. Site is conceptualized as a milieu composed of human and non-human practices and orders, an actor network that is always emergent and transformed through network connections.[5]

In so far we understand their conception of a flat ontology, it seems the authors present a framework analogous to a highly idealized actor network. In its earlier anti-scalar phase, actor-network theory (ANT) drew on a 'flat' ontology that represented networks as non-hierarchical, self-organizing, collaborative and flexible with a topological spatiality. A large literature now exists critiquing this network conception as propagating a highly selective representation of networks (e.g. Leitner and Sheppard 2002; Leitner *et al.* 2002; Grabher 2006). Critics argue that earlier versions of ANT ignored the power hierarchies that appear within networks, the emergence of internal cores and peripheries, and the tendency of networks to reproduce rather than challenge inequalities among network members, and contend that networks and

hierarchies are co-present in social life across space and time. Even the father of the actor-network approach, Bruno Latour (2005), has recently backed away from representing networks as 'flat lands'. As Ryan Holifield writes:

> For Latour (2005: 176), adopting a 'flat ontology' does not mean proclaiming that hierarchies and scales do not exist: 'It's not that there is no hierarchy, no ups and downs, no rifts, no canyons, no high spots. It is simply that if you wish to go from one site to another, then you have to pay the full cost of relation, connection, displacement, and information.' (2006, 14–15)

Holifield goes on to argue that

> In Latour's actor-network approach, the task is not to ignore or reject hierarchies, but to trace them to the sites of their production and the actors producing them. 'Flatness' is not a description of the world, but simply 'the default position of the observer': '. . . this flattening does not mean that the world of the actors themselves has been flattened out. Quite the contrary, they have been given enough space to deploy their own contradictory gerunds: scaling, zooming, embedding, 'panoraming,' individualizing, and so on. The metaphor of a flatland was simply a way for the ANT observers to clearly distinguish their job from the labor of those they follow around' (Latour 2005, 220). (Holifield 2006, 15)

Similarly, John Protevi, in his commentary on the Marston *et al.* paper at the 2005 annual meeting of the Association of American Geographers, argued that any understanding of a flat ontology, with its focus on differential relations, localization and sites, must also identify constraints to individual practices and behaviour in their spatial and temporal scales. Taking the example of globalization, he suggested we must ask questions about the disciplinary effects of IMF structural adjustment policies 'in creating an atomized and normalized, urbanized and de-skilled, work force' (Protevi 2005, 5).

These arguments resonate with the recent arguments of geographers critiquing scale centrism and the privileging of scale as *the* central ordering principle of space and time (Brenner 2001; Latham 2002; Leitner and Sheppard forthcoming). Arguing that we should not jettison scale, they advocate a focus on how diverse spatialities – place, region, mobility, networks, as well as scale – are co-implicated in the construction of social life across space and time (Leitner and Sheppard forthcoming).[6]

The flat ontology proposed by Marston *et al.* entails an *a priori* expurgation of scale. If we were to accept it, we would be left with an impoverished understanding not only of the power relations that

inhere in scale, but of the power relations that inhere in the intersections of diverse spatialities with scale. We favour an approach that recognizes a diversity of spatialities, not because every concept is equally important, but because decades of geographical research have demonstrated that many forms of spatiality shape our lives. We contend, moreover, that scale (and other spatialities) cannot be reduced to an explanandum with actants as the explanans (cf. Collinge 2006). Space, social life and nature are mutually constituted and inseparable. Actants are not only implicated in the production of spatialities, they are also enabled and constrained by them. The challenge that lies ahead is in understanding the articulation of diverse spatialities and, in turn, what this means for more effective emancipatory politics.

Political implications

A central claim of Marston *et al.* is that a flat ontology offers the potential to be politically transformative. They suggest that a flat ontology provides more entry points for progressive politics. We share Marston *et al.*'s desire to open spaces for progressive politics, but disagree with their assertion that scalar thinking and the acknowledgement of structural constraints necessarily 'delimit entry points into the political' (427). To the contrary, recognition of scalar orders and existing power asymmetries is crucial to a progressive politics, both in terms of the development of alternative political spaces and the deployment of socio-spatial strategies of resistance.[7] Indeed, the recent scholarly literature on imaginaries and practices of progressive social movements challenging neoliberal globalization suggests that erasing scale and structure as theoretical notions in geographical inquiry is problematic and unproductive (Bond and McInnes 2007; Leitner *et al.* 2007a 2007c; Mayer 2007; Miller 2007; Oldfield and Stokke 2007; Sites 2007; Wainwright 2007). This literature shows how social movements decipher the structures and dynamics of neoliberal governance, its presence at a variety of scales, and relational and constitutive connections to extra-local sources, channels and agents of neoliberalization. On this basis terrains and targets for effective resistance are established. Scale is one important dimension of strategies of social action and is the subject of intense debate among many social movements. What is the most effective scale for organizing? Very often the conclusion reached is to pursue a coordinated multi-scalar politics to effectively respond to the shifting politics of neoliberalism.[8]

A multi-scalar politics implies operating simultaneously at multiple scales at multiple sites to expand the geographical and political reach. Bond and McInnes (2007), for example, describe how a place-based community group contesting electricity cut-offs, rising prices and service failures in Soweto, South Africa, joined forces with other local and national civic organizations to form a national alliance of 'Social Movements Indaba' to fight for a common agenda of 'turn[ing] basic needs into genuine human rights'. Yet scaling up must be complemented by attending to the local. Thus Mayer (2007) notes that transnational social movements, such as ATTAC, have recognized the need to build stronger, broader bases of support among residents in participating places. Similarly, Oldfield and Stokke (2007) stress the need for urban activists to 'scale down' to, and engage organically with, residents in neighbourhoods, both to keep them informed and to build stronger support (Leitner *et al.* 2007a).

This scholarship does not reduce the spaces of social movements to a scalar politics, but rather shows how social movement strategies draw on and are interleaved with diverse spatialities – networks of spatial connectivity, mobility, place, as well as scale. 'Those practicing contestation make use of multiple spatialities in complex and unpredictable ways to make new geographies' (Leitner *et al.* 2007c, 20). For example, the living wage and anti-WTO movements, as well as immigrants' rights initiatives, have shown how networking across space strengthens initiatives that initially operated independently in individual places around the globe. Networking prevents contestations from being contained spatially by stretching them to other places. Extensive networking among activists across space has allowed these movements to create new scales of organizing and action. For example, in the aftermath of the Immigrant Workers' Freedom Ride – an initiative to publicize a broad agenda for immigrants' rights and US immigration policy reform – sponsors of the ride formed the New American Opportunity Campaign (NAOC), which mobilizes, coordinates and organizes grass-roots lobbying on immigrants' rights at the national scale (Sziarto and Leitner 2007).

In conclusion, we would like to suggest an alternative way forward that decentres abstract theorizing and ontological debates about space. Such debates can be important: different philosophies and theoretical frameworks alert us to and imply different ways of seeing and interpreting the world, yield distinctive insights and are suggestive of different political strategies. Yet they may also distract our attention from the concrete spaces, practices and understandings of human and non-human agents, their power relations and their impacts. When this happens, debates about the superiority of one master concept over another become unproductive. We suggest it is more productive to ground conceptual arguments about the spatiality of social life in the study of practices and power relations, not just abstract ontological debate.

Acknowledgement

Notes

1 Indeed, one has to go back to the 1980s to find many examples to support Marston *et al.*'s claim.

2 A key area of contention revolves around the question of whether relationships, generally speaking, have a degree of durability or are largely ephemeral, comprised only of events. We take this to be an empirical question that cannot be resolved through ontological assertion, flat or otherwise.

3 Drawing on Haraway (1991), Marston *et al.* ask 'How . . . can a researcher write seriously about situated positionality after having just gone global?' (422). They argue that analysis of the global scale 'impl[ies] a transcendent position for the researcher [that] cannot help but undermine attempts at self-reflexivity' (422). While we absolutely agree that positionality and reflexivity are crucial epistemological concerns, we are not convinced by their argument. One response might be to ask at what scales does the researcher become sufficiently self-reflexive and cognizant of her position? We believe that Haraway goes a long way toward answering this question when she writes that 'The science question in feminism is about objectivity as positioned rationality. Its images are not the products of escape and transcendence of limits, i.e. the view from above, but the joining of partial views and halting voices into a collective subject position' (1991, 196). From this statement we understand that it is indeed possible to comprehend processes that operate beyond the scales and life paths of situated personal experience, but such understandings always represent the 'joining' of a multitude of 'partial views', not transcendent knowledge gained from an Archimedean vantage point. To deny this would lead us to conclude, pace the Buddhist parable of the Blind Men and the Elephant, that an elephant is like a pot, winnowing basket, ploughshare, plough, granary, pillar, mortar, pestle and brush – all understandings based on the situated

knowledge of the blind men. It is only by joining together our partial views that we come to understand what sort of object an elephant is.

4 Notable examples include the abolition of the Greater London Council and the abolition of the Alberta regional planning commissions.

5 In our opinion it would have been helpful if the authors had elaborated on how their master concept is related not only to scale, but also to other spatial concepts that have been the mainstay of geographic research such as place and mobility.

6 To their great credit, Marston *et al.* recognize and critique idealistic formulations of unencumbered spaces of flows commonly associated with pure agency positions and some varieties of post-structuralism. Instead, they argue that 'particular movements and practices in social sites are both enabled and delimited by orderings in the forms of arrangements of material objects' (2005, 425). Note the strong resonance with the consensus formed in the wake of the structure–agency debate.

7 A politics that drops notions of structure and scale in favour of an agent-focused politics of someone to 'blame' (427) is a double-edged sword. Putting a face to oppression can indeed be a very effective mobilization strategy and agents should, of course, be held accountable for their actions. But ignoring the structures in which agents operate can lead us to call for the removal of particular corporate CEOs (not necessarily a bad thing), rather than changing the structure of corporate charters, to call for the removal of the Managing Director of the IMF (again not necessarily a bad thing), rather than changing the structures of global governance. These contrasting political strategies need not be posed as an either/or binary. Indeed, recognizing the mutual constitution of structure and agency, they should be seen as complementary. Similarly, concern with scalar relations is not a call to structural determinism, but rather to understanding how agents produce, and are affected by, a particular form of spatiality.

8 Part of this argument and the examples draw on Leitner *et al.* (2007b).

References

Adams P 1996 Protest and the scale of telecommunications *Political Geography* 15 419–41

Agnew J 1994 The territorial trap: the geographical assumptions of international relations theory *Review of International Political Economy* 1 53–80

Amin A 2002 Spatialities of globalization *Environment and Planning A* 3 385–99

Amin A and Thrift N 1997 Globalization, socio-economics, territoriality in **Lee R and Willis J** eds *Geographies of economies* Arnold, London 147–57

Bond P and McInnes P 2007 Decommodifying electricity in postapartheid Johannesburg in **Leitner H, Peck J and Sheppard E** eds *Contesting neoliberalism: urban frontiers* Guilford Press, New York 157–78

Boudreau J A and Keil R 2001 Seceding from responsibility? Secession movements in Los Angeles *Urban Studies* 38 1701–31

Brenner N 1998 Between fixity and motion: accumulation, territorial organization and the historical geography of spatial scales *Environment and Planning D: Society and Space* 16 459–81

Brenner N 2001 The limits to scale? Methodological reflections on scalar structuration *Progress in Human Geography* 25 591–614

Brenner N 2004 *New state spaces: urban governance and the rescaling of statehood* Oxford University Press, Oxford

Chouinard V and Fincher R 1983 A critique of 'Structural Marxism and human geography' *Annals of the Association of American Geographers* 73 137–46

Collinge C 1999 Self-organization of society by scale: a spatial reworking of regulation theory *Environment and Planning D: Society and Space* 17 557–74

Collinge C 2006 Flat ontology and the deconstruction of scale: a response to Marston, Jones and Woodward *Transactions of the Institute of British Geographers NS* 31 244–51

Cox K ed 1997 *Spaces of globalization: reasserting the power of the local* Guilford, New York

Cox K 1998 Spaces of dependence, spaces of engagement and the politics of scale, or: looking for local politics *Political Geography* 17 1–23

Delaney D and Leitner H 1997 The political construction of scale *Political Geography* 16 93–97

Dicken P, Peck J and Tickell A 1997 Unpacking the global in **Lee R and Willis J** eds *Geographies of economies* Arnold, London 158–66

Duncan J and Ley D 1982 Structural Marxism and human geography *Annals of the Association of American Geographers* 72 30–59

Escobar A 2001 Culture sits in places: reflections on globalism and subaltern strategies of localization *Political Geography* 20 139–74

Gibson-Graham J K 2002 Beyond global vs local: economic politics outside the binary frame in **Herod A and Wright M** eds *Geographies of power-placing scale* Blackwell, Oxford 274–303

Giddens A 1984 *The constitution of society* University of California Press, Berkeley CA

Goldman M 2005 *Imperial nature: the World Bank and struggles for social justice in the age of globalization* Yale University Press, New Haven CT

Goodwin M and Painter J 1996 Local governance, the crises of Fordism and the changing geographies of regulation *Transactions of the Institute of British Geographers* 21 635–48

Grabher G 2006 Trading routes, bypasses, and risky intersections: mapping the travels of 'networks' between economic sociology and economic geography *Progress in Human Geography* 30 163–89

Gregory D 1981 Human agency and human geography *Transactions of the Institute of British Geographers* 6 1–18

Gregory D 1994 *Geographical imaginations* Blackwell, Cambridge MA

Gregory D 2000 Structuralism in **Johnston R J, Gregory D, Pratt G and Watts M** eds *The dictionary of human geography* Blackwell, Malden MA 797–98

Haraway D 1991 *Simians, cyborgs, and women* Routledge, New York

Herod A 1991 The production of scale in United States labor relations *Area* 23 82–8

Herod A 1997 Labor's spatial praxis and the geography of contract bargaining in the US east coast longshore industry, 1953–89 *Political Geography* 16 145–69

Herod A 2001 *Labor geographies: workers and the landscapes of capitalism* Guilford Press, New York

Holifield R 2006 Spaces of risk, spaces of difference: environmental justice and science in Indian country Doctoral Dissertation, Department of Geography, University of Minnesota

Howitt R 2003 Scale in **Agnew J, Mitchell K and Toal G** eds *A companion to political geography* Blackwell, Malden MA 138–57

Jones M and MacLeod G 2004 Regional spaces, spaces of regionalism: territory, insurgent politics and the English question *Transactions of the Institute of British Geographers* 29 433–52

Katz C 2001 On the grounds of globalization: a topography for feminist political engagement *Signs: Journal of Women in Culture and Society* 26 1213–34

Keck M and Sikkink K 1998 *Activists beyond borders* Cornell University Press, Ithaca NY

Kurtz H 2003 Scale frames and counter scale frames: constructing the social grievance of environmental injustice *Political Geography* 22 887–916

Latham A 2002 Retheorizing the scale of globalization: topologies, actor-networks, and cosmopolitanism in **Herod A and Wright M** eds *Geographies of power – placing scale* Blackwell, Oxford 115–44

Latour B 2005 *Reassembling the social: an introduction to actor-network-theory* Oxford University Press, Oxford

Lefebvre H 1991 *The production of space* Blackwell, Malden MA

Leitner H 1997 Reconfiguring the spatiality of power: the construction of a supranational migration framework for the European Union *Political Geography* 15 123–43

Leitner H and Sheppard E 2002 Die Stadt ist tot, es lebe das Netz – harnessing inter-urban networks for a neoliberal urban agenda? *Antipode* 31 495–518

Leitner H and Sheppard A forthcoming The spatiality of contentious politics: more than a politics of scale in **Keil R and Mahon R** eds *Leviathan undone? Towards a political economy of scale* University of British Columbia Press, Vancouver

Leitner H, Pavlik C and Sheppard E 2002 Networks, governance and the politics of scale: inter-urban networks and the European Union in **Herod A and Wright M**

eds *Geographies of power – placing scale* Blackwell, Oxford 274–303

Leitner H, Peck J and Sheppard E eds 2007a *Contesting neoliberalism: urban frontiers* Guilford Press, New York

Leitner H, Peck J and Sheppard E 2007b Squaring up to neoliberalism in **Leitner H, Peck J and Sheppard E** eds *Contesting neoliberalism: urban frontiers* Guilford Press, New York 301–28

Leitner H, Sziarto K, Sheppard E and Maranganti A 2007c Contesting urban futures: decentering neoliberalism in **Leitner H, Peck J and Sheppard E** eds *Contesting neoliberalism: urban frontiers* Guilford Press, New York 1–25

Marston S 2000 The social construction of scale *Progress in Human Geography* 24 219–42

Marston S 2004 A long way from home: domesticating the social production of scale in **Sheppard E and McMaster R** eds *Scale and geographic inquiry* Blackwell, Oxford 170–91

Marston S, Jones J P III and Woodward K 2005 Human geography without scale *Transactions of the Institute of British Geographers* 30 416–32

Martin D 1999 Transcending the fixity of jurisdictional scale *Political Geography* 18 33–8

Martin D 2003 Place framing as place-making: constituting a neighborhood for organizing and activism *Annals of the Association of American Geographers* 93 730–50

Mayer M 2007 Contesting the neoliberalization of urban governance in **Leitner H, Peck J and Sheppard E** eds *Contesting neoliberalism: urban frontiers* Guilford Press, New York 90–115

McCarthy J 2005 Scale, sovereignty, and strategy in environmental governance *Antipode* 23 731–53

Miller B 1997 Political action and the geography of defense investment: geographical scale and the representation of the Massachusetts miracle *Political Geography* 16 171–85

Miller B 2000 *Geography and social movements* University of Minnesota Press, Minneapolis MN

Miller B 2004 Spaces of mobilization: transnational social movements in **Barnett C and Low M** eds *Spaces of democracy* Sage, London 223–46

Miller B 2007 Modes of governance, modes of resistance: contesting neoliberalism in Calgary in **Leitner H, Peck J and Sheppard E** eds *Contesting neoliberalism: urban frontiers* Guilford Press, New York 223–49

Nagar R, Lawson V, McDowell L and Hanson S 2002 Locating globalization: feminist (re)readings of the subjects and spaces of globalization *Economic Geography* 78 257–84

Oldfield S and Stokke K 2007 Political polemics and local practices of community organizing and neoliberal politics in South Africa in **Leitner H, Peck J and Sheppard E** eds *Contesting neoliberalism: urban frontiers* Guilford Press, New York 139–56

Paasi A 2004 Place and region: looking through the prism of scale *Progress in Human Geography* 28 536–46

Peck J 2004 Geography and public policy: constructions of neoliberalism *Progress in Human Geography* 28 392–405

Peck J and Tickell A 1994 Searching for a new institutional fix: the after Fordist crisis and global–local disorder in **Amin A** ed *Post-Fordism: a reader* Blackwell, Malden MA 280–316

Pred A 1986 *Place, practice, and structure* Barnes and Noble Books, Totowa NJ

Protevi J 2005 Comments on Marston, Jones, and Woodward: 'Human geography without scale' 2005 AAG meeting, Denver, CO, 7 April

Routledge P 2003 Convergence space: process geographies of grassroots globalisation networks *Transactions of the Institute of British Geographers* 28 333–49

Sheppard E 2002 The spaces and times of globalization: place, scale, networks, and positionality *Economic Geography* 76 307–30

Sheppard E and McMaster R 2004a Introduction: Scale and geographic inquiry in **Sheppard E and McMaster R** eds *Scale and geographic inquiry* Blackwell, Oxford 1–22

Sheppard E and McMaster R 2004b Scale and geographic inquiry: contrasts, intersections and boundaries in **Sheppard E and McMaster R** eds *Scale and geographic inquiry* Blackwell, Oxford 256–67

Sites W 2007 Contesting the neoliberal city? Theories of neoliberalism and urban strategies of contention in **Leitner H, Peck J and Sheppard E** eds *Contesting neoliberalism: urban frontiers* Guilford Press, New York 116–38

Smith M P 2001 *Transnational urbanism – locating globalization* Blackwell, Oxford

Smith M P and Guarnizo L E eds 1998 *Transnationalism from below* Transaction Publishers, New Brunswick

Smith N 1992 Geography, difference and the politics of scale in **Doherty J, Graham E and Malek M** eds *Postmodernism and the social sciences* Macmillan, London 57–79

Storper M 1985 The spatial and temporal constitution of social action: a critical reading of Giddens *Environment and Planning D: Society and Space* 3 407–24

Swyngedouw E 1997a Neither global nor local: 'Glocalization' and the politics of scale in **Cox K** ed *Spaces of globalization: reasserting the power of the local* Guilford Press, New York 137–66

Swyngedouw E 1997b Excluding the other: the production of scale and scaled politics in **Lee R and Wills J** eds *Geographies of economies* Arnold, London 167–76

Swyngedouw E 2000 Authoritarian governance, power, and the politics of rescaling *Environment and Planning D: Society and Space* 18 63–76

Swyngedouw E 2005 Governance innovation and the citizen: the Janus face of governance-beyond-the-state *Urban Studies* 42 1991–2006

Swyngedouw E, Moulaert F and Rodriguez A 2002 Neoliberal urbanization in Europe: large-scale urban development projects and the new urban policy *Antipode* 34 542–77

Sziarto K and Leitner H 2007 Migrant labor and spaces of social justice activism Paper presented at the annual meeting of the Association of American Geographers Chicago, IL

Thrift N 1983 On determination of social action in space and time *Environment and Planning D: Society and Space* 1 23–57

Wainwright J 2007 Spaces of resistance in Seattle and Cancun in **Leitner H, Peck J and Sheppard E** eds *Contesting neoliberalism: urban frontiers* Guilford Press, New York 179–203

Waterman P and Wills J eds 2001 *Place, space, and the New Labour internationalisms* Blackwell, Oxford

Weiss L 1998 *The myth of the powerless state: governing the economy in a global era* Polity, Cambridge

Yeung H W-C 1998 Capital, state, and space: contesting the borderless worlds *Transactions of the Institute of British Geographers* 23 291–301

Reply

Situating Flatness

John Paul Jones III*, Keith Woodward** and Sallie A Marston*

*Department of Geography and Regional Development, University of Arizona, Tucson, AZ 85719, USA
email: jpjones@email.arizona.edu
**Department of Geography, University of Exeter, Exeter, Devon EX4 4RJ

Introduction

Our paper, 'Human Geography without Scale' (Marston *et al.* 2005), is developed in two parts: a critique that is immanent to scale, where we show that, even on the grounds of contemporary spatial theory, the concept is deficient; and a critique that is extrinsic to those grounds, where we make a contribution to an alternative ontology that does not rely on the transcendental abstraction of scale. The paper is of course *about* scale, but these alternately internal and external critiques mean that it is also in play with two different domains of spatial thought more generally. On the one hand, most theorists of scale have come to rely on Henri Lefebvre's dialectical materialist approach to overcoming long-standing divisions between social and spatial ontologies. On the other hand, inspired by thinkers such as Deleuze, Latour and others, a small but increasing number of geographers are charting a different approach to space, one that is also materialist but poststructuralist and non-dialectical (Bonta and Protevi 2004). Our paper can be read as the latest salvo in the scale debates, but as this reply should make clear, it also speaks directly to widening differences in these theorizations of space in critical human geography.

One does not have to be a Kuhnian to realize that any time a shift in dominant thinking takes place there will be 'sides' – and reading some of the comments on our paper reveals that this word is not too strong. Here we suggest that, in order to develop a more complete and analytically rigorous account of these differences, non-dialectical theorists of space will have to respond to a number of questions, the answers to which dialecticians have already filled in while developing their own approach to social space. These questions, which amount to something of an agenda for an alternative spatiality, include the following:

- How are power and politics theorized?
- How does the theory address agency and structure, identity and difference?
- What is the relationship between 'the social' and 'the spatial'?
- How are the 'human' and 'non-human' theorized?
- What is the relationship between materiality and discourse?
- How is causality specified in general and determined in particular?
- How is knowledge produced theoretically and verified empirically?
- What research questions emerge and what methods are needed to answer them?
- How does the theory address core concepts such as place, region and scale?
- How do new concepts emerge from the theory?

While our paper touches on a number of these questions through the entry point of scale, finding a satisfactory set of answers is a much more extensive project. A small contribution to it, we hope, is this response to the wide-ranging comments on our paper by Chris Collinge (2006), Arturo Escobar (2007), Scott William Hoefle (2006), Andrew Jonas (2006) and Helga Leitner and Byron Miller (2007). In short, we take up their specific criticisms, while at the same time making an effort to indicate some of the implications for the wider terrain of geographic thinking onto which 'Human Geography without Scale' has landed. But first, we briefly review the key threads of our argument.

Our paper begins by noting that after over 20 years of scale theorizing in geography, disagreement remains about what it is and, even, whether it exists. We note that geographers have been steadily 'complexifying' their concepts of scale since the seminal work of Peter Taylor (1982) and as vehicles in the large literature on this topic we offer synoptic readings of the work of Taylor and six other geographers: Neil Smith, Erik Swyngedouw, Neil Brenner, Kevin Cox, Richie Howitt and Doreen Massey. In brief, these writers have elaborated on: (a) the social production, structuration and relational character of scale; (b) the ways that different social processes are unevenly and complexly distributed across various scalar levels; and (c) the relationship between scalar theorizing and horizontal, or network theorizing.

We go on to note that in spite of these complexities, a vertical view of scale as a series of nested spaces – from the neighbourhood to the locality to the region, nation and globe – continues to hold sway, and we outline four major problems with this conceptualization. First, as many others have noted, there is widespread confusion over the relationship between vertically stratified scales and horizontally extensive spaces. Both carve territory equally well, but using them interchangeably compounds confusion. There are, we argue, advantages to demarcating horizontally. Second, we note that vertical scale is anchored by the endpoints of the local and global, and that these appear inescapably tied to a host of other binary oppositions that even the best orthogonal thinkers are prone to conflate, including: agency and structure, subjectivity and objectivity, parochial and cosmopolitan, concrete and abstract, static and dynamic. The result of these alignments, we argue, has been a pervasive association in which:

> economic macro-isms are articulated alongside their attendant 'global spaces', while (minor? reproductive?) social practices are cordoned off in their respective localities (or even homes), thereby eviscerating agency at one end of the hierarchy in favour of such terms as 'global capitalism', 'international political economy', 'larger scale forces', and 'national social formations', while reserving for lower rungs examples meant to illustrate the 'unique manifestations' of these processes in terms of local outcomes and actions. . . . (Marston *et al.* 2005, 421)

Third, we observe with Howitt (1993) a tendency for researchers to approach scale as a conceptual given, an already ordered spatial imaginary onto which they project an endless number of phenomena and processes. We claim that, in spite of increasingly pliant accounts of the concept: 'events and processes come pre-sorted, ready to be inserted into the scalar apparatus at hand' (Marston *et al.* 2005, 422). Fourth, we maintain that the global imaginary, in part because of its association with an Archimedean conceit of objectivity, defies self-reflexive and situated accounts of social life.

One alternative to vertical scale that we consider – one that quite possibly could work within a dialectical approach to spatiality – is the increasingly popular approach sometimes referred to as 'spaces of flows' (Castells 1989; Amin 2002). Network-based horizontality does avoid some of the problems discussed above, but in reviewing this literature we see significant evidence of 'flowsterism': the idea that people, phenomena and processes somehow fly above the stickiness of space in an atmosphere of frictionless fluidity. We find, moreover, the same tendency to spatial abstraction in the horizontal view that we also criticize in the vertical one, with scattering lines of flows now standing as transcendental counterparts to layers of nested territories. So we opt, instead, for a 'flat ontology', largely based on the work of Deleuze, DeLanda and Schatzki. In it we conceptualize 'sites' as immanent (self-organizing) event-spaces dynamically composed of bodies, doings and sayings. Sites are differentiated and differentiating, unfolding singularities that are not only dynamic, but also 'hang together' through the congealments and blockages of force relations. The 'actuality' of any site is always poised for compositional variation – subject to reorganizations and disorganizations – as its inexhaustible 'virtuality' or potential continually rearticulates itself (Deleuze 1994). Finally, the ontology is called 'flat' because it neither incorporates *a priori* transcendental forms nor deploys 'axiomatic' or typological analytics that pre-ordain a series of solutions to critical inquiry. As we mention, these too often characterize the analytic procedure of scale theory. Sites must be approached problematically through analysis conditioned by the compositional specificities particular to each.

We end the paper with a brief response to what we knew to be on the minds of most readers: what about the politics of the site ontology? Perhaps, we offer, sites might be porous and dynamic enough for us to imagine multiple outlets for and connections among a range of political struggles. But if nothing else, then the site should at least stand in opposition to the juggernaut of 'globe talk' (Robertson 1992), which is continually marched out in efforts to mystify the concrete assemblages (e.g. boardrooms) that hide behind the banners of 'globalization', 'global capitalism', etc.

Anxieties over geography

Once critical geographers made scale an object of inquiry, its relationship to the discipline became much more than simply a cartographic device (McMaster and Sheppard 2004), which helps explain the anxious tone in some of the responses to our paper. We of course recognize that scale has been a productive vehicle for theorizing all sorts of political, economic and social processes (Marston 2000; Marston *et al.* 2005), and the fact that most of the sophisticated work on the concept has emerged from geographers should be a point of pride. As Jonas puts it, 'The politics of scale is partly about getting scholars of different disciplinary persuasions to embrace wholeheartedly concepts and practices of scale-spatiality' (2006, 399). Jonas concludes his response with the claim that he cannot imagine a human geography without scale. On the other side of this coin is Hoefle, who believes that abandoning the concept threatens geography's very existence. To make his point, Hoefle paints us as the killers of the 'goose' (geography) that laid the 'golden egg' (scale). He suggests that any attempt to venture from underneath the shadow of scale is 'suicidal' (Hoefle 2006, 241–2). Moreover, were geographers to think outside of the conceptual confines of scalar frameworks, Hoefle writes, the result would no longer fall under the purview of the discipline (2006, 241). Concerned about the possibility, Hoefle goes so far as to advise that our paper be 'read and digested *within* the discipline and for Geography's sake nary a word about the paper outside it' (Hoefle 2006, 242).

In our view, Hoefle's anxieties warrant two brief responses. First, geographers can no more claim ownership of scale than political scientists can of nation-state. Moreover, if scale exists in the bedrock terms that some critics contend, then it must certainly have been around prior to any claims on it by the social constellation of knowledge that Hoefle refers to as 'Geography'. On the other hand, if scales are historically and socially produced, as most Marxists claim, then it is clearly not a class of geographers who have been doing the bulk of the manual labour! Second, such talk about survival and suicide does not stand up to the historical record. Back in the 1970s and 1980s, many thought that the broadsides launched against Cartesian epistemology and spatial fetishism would spell the end of the discipline, but clearly that did not occur. Instead, the dialecticians of space – as Jonas and Leitner

and Miller note in their responses – took us in lots of interesting directions. So will other geographers as they continue to sort out answers to the ten questions listed in our Introduction.

Trotting out the scalar axiomatic

One of the early responses to the paper came from a prominent theorist whose reply went something like this: 'I completely agree with you, but you have to remember that scale exists!' The presumed self-evidence of scale is also present in the responses by Jonas, Hoefle, and Leitner and Miller. Jonas – his concluding comment about not being able to imagine human geography without it notwithstanding – is noteworthy for paying close attention to scale's causal powers, a task that leads down an ambivalent path that we also followed when rethinking scale. First, he is careful to note the difference between the scalar organization of material resources and that organization's causal effectivity, if it can be said to have any (2006, 400–3). For example, he discerns differences between capital 'doing this' or nation-states 'doing that' and the complex of causalities that arise 'in the sense that certain scalar properties of an object, process or activity make a difference to the way it operates or to ways that groups act upon its knowledge-context' (2006, 401). With respect to those knowledge-contexts, we are in agreement with Jonas that scale could in one sense be nothing more than a discursive device (something that was of concern in our paper, inspired by Katherine Jones 1998). Like us, he acknowledges that scale operates epistemologically – as a 'lens' – and he spends a part of his response explaining how scales help researchers think through and write up research. Scale helps resolve, he offers, problems of narrative. And indeed, at a crucial point he seems to agree with us in suggesting that scale exists only as an analytic device:

> Marston *et al.* are therefore correct in their belief that these processes do not converge around discrete scales and territorial hierarchies, *but unambiguously misguided in their claim that those of us who work with scalar concepts believe that such elegant structures and categories actually exist, other than as heuristic abstractions.* (2006, 400; emphasis added)

Jonas might respond that this passage applies only to fixed scales and not to complex ones, which is presumably what he means by referring to 'spatial-material scales' (2006, 404). But it is important to remember that taking complexity into account does

not by extension secure ontological status. Just because the scale concept has become more fluid and complex over time does not make *it* any more real. In any event, Jonas ultimately wants it both ways: scale as abstraction, conceptual lens and aid to narration; and scale as a complex specificity that results from the '*necessary* scale-spatiality of social, economic and political life' (2006, 404; emphasis added):

> [We 'scalists', i.e., the 'pro scale' geographers] are responding to the challenge of narrative and deploying scalar *categories* in ways that attempt to show how particular material structures and processes have become fixed at or around *certain* sites and scales, are in the process of becoming unfixed at a *specific* scale, or combine to differentiate the world in complex scalar and site-specific dimensions. (2006, 404; emphasis added)

Our point is not whether scale can be both a narrative device and a 'spatial-material' object. It is, rather: first to caution against abstractions that become real through reification; and second, to be equally wary of abstractions that emerge as their presumptively concrete referents are destabilized through social constructivism. Indeed, perhaps scale as *both* epistemology and ontology is trapped in the revolving door of discourse and materiality that has consumed so much energy since the 1980s – the same time frame over which it has been increasingly complexified. Is scale so axiomatic that it had to be reinvented as a discourse once geography discovered deconstruction? Is the corollary in that operation found in the production of scale as an object out of such raw materials as narrative conventions and epistemological lenses?

Compared to Jonas, Hoefle adopts a similar but less nuanced analytic strategy, while also treating us to a short course on the history of geographic thought. Specifically, he offers a contradictory reading of Mitchell (1995), which he uses to criticize our project:

> Of course the concept of scale, as all theoretical devices such as culture, society, economics, environment, nature, site and a host of others are [sic] just that, a word (symbol) in our head to which a string of ideas are associated concerning things, activities and processes perceived in the world. It is unfortunate that the authors were inspired by Mitchell (1995), who tried to argue that the concept of culture . . . does not exist ontologically. (2006, 240)

He is right about Mitchell, who famously critiqued culture for its lack of ontological status. But it is hard to see how Hoelfe could criticize us for invoking Mitchell when in the same passage he *also* rejects a 'thingified' version of culture – and scale. Resonating alongside Jonas's discursive-material duplet, Hoefle later goes on to discuss 'real' scales, as in claims that 'the success or failure of alternative politics in the Amazon hinges on working through *all* the scales of political alliances' (Hoefle 2006, 239; emphasis in original). The 'idea' of scale, which we do not deny, is here trumped by scale as an axiomatic object – the transcendental abstraction becomes reified.

Leitner and Miller also attest to the representational aspects to scale, doing so through the Lefebvrean production of space more generally. Lefebvre of course had a lot to say about both spatial ontology and epistemology, but Leitner and Miller object strenuously to the notion that scale is merely an epistemological ordering frame. Scale is for them an ontological aspect of space itself:

> Spaces, moreover, exist in nested relationship to other spaces, creating differential opportunities and constraints for practices of individual and collective agents . . . The notion of 'scale as level' points toward such differences in powers and capacities, opportunities and constraints, among nested spaces. (2007, 119)

But how is this nesting produced? Leitner and Miller answer this question by analysing the social practices involved in the social construction of scale. We think this is a good way to proceed, for a focus on social practices is at the heart of the site ontology developed in our paper (also see Schtazki *et al.* 2001). But before continuing they criticize us for reducing the choices to idealist versions of scale as a level and as a size: 'Marston *et al.* ground their ontological critique in an interrogation of "scale as size" and "scale as level"' (2007, 119). But we do not do that. The part of the paper they are referring to is not about ontology at all, but is instead a straightforward empirical discussion of the relative merits of thinking size versus level, a point of confusion in the scale literature that has been widely acknowledged but never resolved (see Howitt 2003). Our ontological commitments should have been quite clear: to reject transcendental imaginaries that circulate in scalar thought and to reposition analytics at the sites of doings and sayings, events and orders.

At this point in their response Leitner and Miller seize on a comment in our paper about 'bordering practices', erroneously suggesting that we reduce scale to these prosesses. But let us compare some text. They write:

Marston *et al.*'s 'imaginary' critique of the scale literature points us only toward bordering practices as a technology of scale production. For Marston *et al.* scale is 'the result of marking territories horizontally through boundaries and enclosures, documents and rules, enforcing agents and their authoritative resources. (Leitner and Miller 2007, 119)

This, however, is a perversion of the printed page, which reads as follows:

> For one encounters these 'structures' [legal, juridical, and organizational] not at some level once removed, 'up there' in a vertical imaginary, but on the ground, in practice, the result of marking territories horizontally through boundaries and enclosures, documents and rules, enforcing agents and their authoritative resources. (Marston *et al.* 2005, 420)

In short, we never reduce scale to 'bordering practices'. Quite the opposite, in fact: we suggest in the above quote that 'marking territories' is part of site-talk, not scale-talk. Leitner and Miller go on to make much out of this misreading, admonishing us in this section about power being 'shot through' this or that, and about the irreducibility of politics to boundary making. They accuse us of lacking an analytic of power, as if our 'documents and rules, enforcing agents, and their authoritative resources' are not about power.

But getting back to the practices that socially construct scale, Leitner and Miller write:

> While necessarily affected by relations of inclusion and exclusion across differentially permeable borders, power relations, processes, and capacities within bounded spaces cannot be reduced to bordering practices. (2007, 119)

Irrespective of the fact that we did not say they were (see above), what they offer as their version of legitimate practices behind the social construction of scale are the following:

> While the state is heavily implicated in bordering practices as well as entangled in power relations beyond its borders . . . its activities cannot be reduced to bordering practices. States engage in a wide range of regulatory practices relating to resource allocation, authorization, legitimation, and signification. They invariably exhibit internal geographical differentiation by level, e.g., local, state/provincial, national, as well as differentiation in relationship to supra-national regional institutions and institutions of global governance, e.g., NAFTA, EU, WTO, IMF, World Bank. (Leitner and Miller 2007, 119)

There are two points to be made about this passage. First, the practices named – regulatory, allocative, authoritative and signifying – are in fact good

places to start looking for the social production of scale, but we should be precise: strictly speaking, all of them rest on 'bordering practices', on the seizure of alterity, on its reduction to exploitative forms of difference, and on the social power that maintains such difference. Seen in this way, bordering practices are in fact all about power. As such, they oversee all of Leitner's and Miller's practices: of who to regulate and how to regulate different bodies differently; who gets what sort of allocation and how much is allocated; who has the right to exercise authority and how that authority is activated differently on different people; and what is signified and how it is signified differently. So, even when taking their misreading of our paper on their terms, we stand by the idea that bordering practices (through their enforcing agents and their documents and rules) are in fact a good place to see the operation of power (or what we referred to as 'force relations').

Second, we need to ask how one studies these messy aspects of power when one shifts, as they immediately do in the quote, to the scalar axiomatic, which departs from the factories, offices and stores; the traffic intersections and sidewalks; the schools and border-crossing posts; and the council chambers and courtrooms. Surely we are not going to find their practices at work, 'bordering' or otherwise, at 'levels' that are positioned as rungs above these sites of social practice, i.e. at their 'local, state/provincial, national' or 'supra-national regional' and 'global' levels. Here Leitner and Miller reveal a tendency for causal slippage that Jonas makes a conscious effort to avoid – not so easy when one is enrolled in the scalar axiomatic. The problem so thoroughly infuses scale talk that we soon find Leitner and Miller talking about things being 'downloaded' and 'uploaded' to other levels, while at the same time claiming that these restructurings of scale 'flow from social struggle' (2007, 120). Which sites those struggles took place in, and which practices are involved, is left unresolved.

Dusting off the usual political subjects

As we noted in our original paper, the scale debates of the last 20 years emerge out of strong political commitments, and we do not question the sincerity of those we review in our critique of scale. But in the responses to our paper, we find that what stands for political is in danger of calcification and caricature. Hoefle and Leitner and Miller return repeatedly to a small variety of political 'hot

topics' meant to illustrate the utility of the scale concept for mapping solutions to political crises. While we also do not question our commentators' political commitments, we nevertheless note that too frequently their reluctance to engage an alternative theory of spatiality is due not to an evaluation of its intrinsic merits, but to their sense – misguided in our estimation – of the self-evident value of scalar frameworks for pushing forward socio-political change. Specifically, the discussions of politics tend to appear either: (a) in the place of strong analysis, support and refutation in the respondents' arguments in support of scale; or (b) as a 'reading off' of politics through scale in order to demonstrate its concreteness, while at the same time being tautologically framed in its terms. Hoefle and Leitner and Miller pull together various examples in which supposedly 'scalar' politics – e.g. the global scale of the WTO versus those of local, grassroots social movements – stand in for arguments against our critiques of the scale concept, but they do so as if these examples were transparently scaled beforehand. When political empirics are pre-treated with a scalar analytic and then used in support of the scalar concept itself, it not only naturalizes scale thinking, more importantly it does an injustice to political thought, falsely suggesting that scale theorizing is the only way – or at least *the* right way – to frame a given political struggle. The political risk in this rhetorical strategy is to defuse the real potential of academic activism by reductively assigning the virtualities of political struggles of diverse groups to a scalar *a priori*. In such cases, the political work of academics might rightly be viewed by non-academic activists as exploitative, undertaken in order to prop up a theoretical argument incapable of standing on its own.

To illustrate, in the first proper section of his response, Hoefle enlists his 2000 analysis of Brazilian political movements to develop an argument for the political relevance of scalar analytics. Here Hoefle attempts to convince readers of the political relevance of scale by carving up a political context in scalar terms and then asserting its significance:

> A host of global, national, regional, state-level, municipality-level actors interact and struggle over the fate of the Amazon, and the concept of scale is extremely important for understanding what appears to be political chaos. (2006, 238)

This research, however, does not prove the political value of scale but simply exercises the analytics (Hoefle 2006, Figure 1, 239) he brought from Rio to the rainforest. Absent of any analysis, and without having engaged our conceptualization of the site, Hoefle instead offers an abrupt announcement that 'it is hard to see how the concept of a site would do justice to the complexity of Amazonian politics' and that 'the concept of the site is politically conservative' (2006, 240).

In contrast, we maintain quite simply that the flat ontology is *deeply* concerned with questions of politics, and that assuming that power only flows through a logic of scale, taken as a given from the outset (whether it looks like this ↕ or this ↔, etc.), restricts rather than enhances its analysis. We advance a site ontology specifically to address politics, calling it an approach that:

> allows us to avoid falling into the trap of naïve voluntarism by embedding individuals within *milieux* of force relations unfolding within the context of orders that constrict and practices that normativize. (Marston *et al*. 2005, 424)

Reading closely

Our review of the literature in 'Human Geography without Scale' was organized to illustrate the increasingly complex character of scale theorizing over the past 20 years. Given the brevity of our review, it is not surprising that some of the participants in the scale debates would take exception to one or another aspect of our analysis. Among these respondents, it is Jonas and Leitner and Miller who most challenge our characterization of the scale literature. Jonas is concerned that we have unfairly presented scale as a choice between two poles, the local and the global, without acknowledging the vast amount of literature that addresses what goes on in the complicated middle ranges of scale (urban areas, regions and states), where actors tend to engage institutions and states. On the one hand, we describe at several points in the paper the attention paid to these middle scales, and in fact the overall intent of the section 'Complexifying scale' is to acknowledge progress in dismantling the rigidities first elaborated in Peter Taylor's three-level model (1982) on the production of scale. On the other hand, as Jonas notes, we do focus considerable attention on the binaries associated with the local and the global, and in various passages it might appear that scale pivots on that polarity. Our numerous references to the local-global model are not, however, based on a

reductive reading of scale, but rather a consideration of its 'limit concept'. As formulated in the literature, the local and the global do not exclude levels within a continuum, but rather enable a variety of *relative* differences in power, flexibility and mobility constituting the in-between of any given set of scalar levels. We acknowledge this complexity throughout the paper, but what is of importance to us is not how many levels or how complex their intersection, but the various binarizations associated with its endpoints (e.g. cosmopolitan-parochial, objective-subjective, masculine-feminine), which we find unnecessarily constrictive.

For their part, Leitner and Miller claim that we neglected a large body of empirical literature that elaborates the scales at which agency is operative. They contextualize their criticism in terms of the disciplinary impact of the agency versus structure debates in geography. Leitner and Miller are correct in pointing out that there are several parts of our paper where we claim that the scalar imaginary pits local actors against broad-scale economic forces. The following example from our paper is especially apposite:

> hierarchical scale (de)limits practical agency as a necessary outcome of its organization. For once hierarchies are assumed, agency and its 'others' – whether the structural imperatives of accumulation theory or the more dynamic and open ended sets of relations associated with transnationalism and globalization – are assigned a spatial register in the scaffold imaginary. Invariably, social practice takes a lower rung on the hierarchy, while 'broader forces', such as the juggernaut of globalization, are assigned a greater degree of social and territorial significance. (Marston *et al.* 2005, 427; also see the extended quote from page 421, above)

On Leitner's and Miller's point, we concede that a close reading of the literature will reveal examples of agents who are thought to tap the resources of mid-level scales in opposition to the forces of capitalism (Herod 1991, who we cite, is, as Leitner and Miller note, a case in point). Nonetheless, there is also a great deal of evidence in support of our reading of the literature, so much so that it barely requires supportive citation these days. For example, consider this relatively recent assessment by Gibson-Graham:

> We are all familiar with the denigration of the local as small and relatively powerless, defined and confined by the global: the global is a force, the local is its field of play; the global is penetrating, the local penetrated and transformed. Globalism is synonymous with abstract

space, the frictionless movement of money and commodities, the expansiveness and inventiveness of capitalism and the market. But its Other, localism, is coded as place, community, defensiveness, bounded identity, *in situ* labor, noncapitalism, the traditional. (2002, 27)

Finally, while our review of nearly 25 years of scale theory in a few pages may have produced some synoptic gloss, our commentators had a much smaller text to work with. Hence it is unfortunate to see some of their textual infidelities, as in: (a) Leitner's and Miller's equation of our flat ontology with agency, a hangover from *their* local-global binarism (2007, 118); their unexplained conflation of our ontology with that of Latour's, after which their response to *his* is presented without explanation as a response to *ours* (2007, 121); and their use, as 'evidence' against our 2005 paper, of a string of citations to unavailable book chapters from a single forthcoming volume:

> the recent scholarly literature on imaginaries and practices of progressive social movements challenging neoliberal globalization suggests that erasing scale and structure as theoretical notions in geographical inquiry is problematic and unproductive (Bond & McInnes 2007; Leitner *et al.* 2007a, c; Mair 2007; Miller 2007; Oldfield & Stokke 2007; Sites 2007; Wainwright 2007). (Leitner and Miller 2007, 121)

(b) Jonas's adaptation of an unpublished 2000 commentary, wherein he cites a six-year-old paper by Marston (2000), who was critical of scale theorists' failure to address social reproduction, and interrogates it on the critical ground and perspective of Marston *et al.* (2005), as if the arguments were or even need be the same (Jonas 2006, 401); and (c) Chris Collinge's attempt to conduct a deconstructive reading of Neil Smith's contributions to socio-spatial theory, which is problematically approached as if: (i) the author's intentions were immune to conceptual re-positionings, and (ii) the texts needed to form a singular and coherent *oeuvre*; and (d) Hoefle's claim that we rely 'too heavily' on Derrida (Hoefle 2006, 238), whom we never cite and mention only in passing, by way of an adjective (2005, 423).

Thinking Latour and Derrida with Collinge

While we take issue with Collinge (2006) on certain points, we nevertheless find his to be a generally encouraging response to our effort to articulate a human geography without scale. By turns, he blends an analysis of the two trajectories of our argument – a critique of the scale concept and the

creation of a flat ontology devoid of scale – with two alternate strands, presented as divergent routes that our paper might have taken.

Responding to our flat ontology, Collinge proposes that a turn to Latour and Actor Network Theory (ANT) provides a different approach to exploring terrains beyond scale, even though he affirms our use of Deleuze's distinction between the actual and the virtual to avoid that 'deadpan sense of happenstance' (Collinge 2006, 250) one sometimes finds in ANT. While page constraints prevented us from providing a comparative analysis of the differences between Latour's and our position, Collinge's commentary enables us a brief excursion here. He highlights three crucial distinctions: (a) Latour neutrally includes both humans and non-humans in his notion of the network, whereas Schatzki (2002) – the central inspiration for our turn to site ontology – includes both, but privileges the human; (b) Latour's ANT offers a more politically efficacious and indeed potentially radical account of social life; and (c) the spatialities of our project are unnecessarily restrictive, precluding the interrogation of scale altogether, a move that Collinge argues against, alternately through Latour and Derrida.

With regard to the first distinction, it is important to note that, while Schatzki does indeed develop his social site through human-centred contextualization, this portion of the theory is *not* something that we take up in the paper. On the contrary, our descriptions of the site are predicated on avoiding privilegings and other *a priori* distinctions between the human and the non-human. We further opt to forego entirely the compulsion to frame spatialities in the yet-still-privileged terms of humans and their negations (distributing 'agency' to other objects only serves to spread the liberalist philosophy more, well, liberally); for this reason, we chose instead the generic term 'bodies' to register the material contents of the site. The Spinozism that lurks behind this terminology is intended: the various ways that bodies assemble and move, affect and are affected together are enormously important for discussing both the constitution of a site and how it might cohere and maintain itself (Spinoza 2000).

Our response to Collinge's second point is related to the issue of the non-human, for it is the Latourian tendency to include the non-human as agents in networks that Collinge affirms to be 'more radical' than those who, like Schatzki, centre the human (Collinge 2006, 250). While we agree with his inclination to opt for the more radical in a

series of choices, it is not entirely clear to us that Latour's work can be held up as the exemplar of radical theorizing. For example, in reviewing a number of Latour's recent works, Wainwright noted the tendency for Latour's politics to be lamely bourgeois:

> It's nice to imagine, as Latour beckons, 'that a [wine] cellar in Burgundy invites you to a wine tasting,' but what does this have to do with political struggles? Latour never deigns to apply his approach to a complex historical-political situation. (Wainwright 2005, 119)

In the third point Collinge makes clear that he considers Latour's picture of the network to be more spatially inclusive than our own. Collinge notes that Latour's project is designed to be completely inclusive, open to explorations of scales as well as sites. Yet we note that the scalar imaginary is not simply the most pervasive of spatial imaginaries, but that it has become so normativized and centralized as to make it impossible to think space without it (note the tone of inevitability adopted by some of the other commentators). While the thought of alternative spatialities (*qua* the creation of concepts, following Deleuze and Guattari 1994) is indeed appealing to us, it is necessary to make room for them as they are encountered. Considering the size of the ground that the scalar theorists have crowned, such a proposal seems impossible.

And finally, why not turn to Derrida after all and take up Collinge's very interesting point that:

> the problems with scale analysis go well beyond simple error and express a wider tendency, a wider logocentrism or metaphysics of presence within the language of human geography. (Collinge 2007, 250)

On these grounds, Collinge suggests that we *need* scale – more or less to be the negative moment, the trace, in the production of the site. An alternative to this interesting suggestion is to do something we never attempted in our paper: *deconstruct* scale.

In his analysis of the metaphysics of presence, which he directed to such terms as 'God' and 'Man', Derrida pointed to the problematic 'structurality of structure' (1972, 248), by which he meant to signal the contradictory openness of a structure that closes off the very 'freeplay' that structure itself makes possible (see also Foucault 1994, on the analytic of finitude). Had we taken up the metaphysics of scale, then we might have indicted the 'global' as the transcendental spatial signifier – the mother (Genesis) of all signifiers? – producing the very

possibility of scalar thinking (see Tagg 1997). We could then see the global operating as a constant presence, an essence, a substance, a subject, a logos that, as with all centres, organizes its attendant structure (scales from it to the local), while *limiting* (by conceptually and politically fixing space) and *enabling* (through scalar structurations, glocalizations, scale bendings, etc.) freeplay. Hence we reach a paradox: the global is both the 'origin' of scalar complexity and the barrier to thinking (spatially) outside of the binary. As Derrida put it in a different but parallel context:

> The concept of centered structure is in fact the concept of a freeplay based on a fundamental ground, a freeplay which is constituted upon a fundamental immobility and a reassuring certitude, which is itself beyond the reach of the freeplay. (Derrida 1972, 248)

In the absence of the structuring centre of the global and the resultant scalar hierarchy, might not this constrained freeplay be set *loose* to become the real 'messiness' of space (also see Marston *et al.* 2007)?

Thinking Deleuze and DeLanda with Escobar

Escobar's (2007) response expresses multiple affinities with our paper and advances questions that invite further refinements of its ontological argument. He situates our paper within a small-but-growing number of social theorists – Manuel DeLanda and Tizianna Terronova among them – who are developing an 'ontological turn' characterized by 'flat' theorizing. We are flattered to find ourselves in such good company and appreciate his overall affirmation of our project:

> It follows that processes of localization should not be seen as the imprint of the global on the local, but *as the actualization of a particular connective process, out of a field of virtuality*. Indeed, what exists is always a manifold of interacting sites that emerge within unfolding event-relations that include, of course, relations of force from inside and outside the site. This site approach is of relevance to ethnography and anthropology as much as it is to geography. It provides an alternative to established, state-centric, capitalocentric and globalcentric thinking, with their emphasis on 'larger forces', hierarchies, determination and rigid structures. (Escobar 2007, 109; emphasis in original)

Given Escobar's central concerns for politics and complex organization (2004), we also appreciate his recognition that: 'Flat alternatives make visible design principles based on open architectures allowing for interconnection of autonomous networks, and the potential for expansive inter-networking enabled by decentralization, resilience and autonomy' (Escobar 2007, 111).

Yet while Escobar is enthusiastic about the shifts that emerge within our flat ontology, he retains some reservations about our project:

> What is most exciting about the argument for me is that it is part and parcel of what seems a growing, and daring, attempt at looking at social theory in an altogether different way – what could broadly be termed 'flat alternatives'. The language itself is indicative of this aim: flat versus hierarchical, horizontality versus verticality, self-organization versus structuration, emergence versus transcendence, attention to ontology as opposed to epistemology, and so forth. Whether all of this amounts to a complete overhaul of the notion of scale, I think, remains an open question. (Escobar 2007, 106)

This open question is based most centrally within DeLanda's recent use of scalar thinking in developing a theory of assemblages (2006), and at the end of his commentary, Escobar leaves us with three key inquiries. In what follows we examine the implications of each of these questions.

> Does [the flat ontology] entail human/natural geographies without scale, or does it necessarily lead to a conceptualization of human geography which has no longer any use for 'scale'? (Escobar 2007, 111)

As our discussion of Jonas noted earlier, one of the critical lines running through both our paper and the commentaries has been the too frequent indiscernibility of scale as an object *in the world* and/or as an analytic *tool* used for describing it. Echoing this, Escobar asks whether we propose an ontological-material rejection of scale (i.e. asserting that it does not exist in the context of the actual geographies around us) or merely a methodologico-epistemological evacuation of the concept (i.e. calling for the termination of its analytic employment within the discipline). We answer both of Escobar's framings in the affirmative: the material nonexistence of scale is an ontological implication of the second half of our paper, but, at the same time, the internal critique of the scale concept that opens the paper suggests that retaining it within disciplinary discourse and practice is also epistemologically and politically disabling. Rather than leave an ontological vacuum in the place of these critiques, we went on to construct a dynamic and mutable notion of the site that avoids the taxonomic and static pitfalls characteristic of scalar worldviews.

That effort required, in part, a critical and selective incorporation of DeLanda, who had early on employed certain modes of scalar thinking as a means for describing the co-constitutive workings of micro- and macro-processes (DeLanda 1997). Escobar reiterates DeLanda's (2006) contention that his ontology is capable of combining flat approaches with a 'significantly transformed' notion of scale (Escobar 2007, 111). Not surprisingly, this ontology has a great number of resonances with our own, as DeLanda and his primary influence, Deleuze, played key roles in the articulation of our flat ontology. Importantly, while DeLanda is resolute about the inclusion of scale within his own system, he is also at pains to avoid the apparent simplicity that comes with scalar configurations 'resembling a Russian doll or a set of Chinese boxes' (Delanda 2006, 33). He analyses the relations between assemblages – wholes whose properties emerge from the interactions between parts (Escobar 2007, 107) – and scales as a system in which micro assemblages aggregate and create affective resonances in such a way as to constitute larger, macro assemblages, which in turn then push back, affecting their own smaller, constitutive assemblages. In this way, he suggests, many local practices and residences go on to form neighbourhoods, many neighbourhood stabilizations and activities will go on to form cities, and so on. But, in addition to these 'bottom-up' processes, larger aggregates mobilize their own scale-proper processes that have systemic effects upon the smaller assemblages. Given the double movement of these specific connectivities, Escobar asks, 'Does [DeLanda's notion of social assemblages] avoid the ontological verticality of established views of scale' (Escobar 2007, 111)?

In addition to the more obvious instances of hierarchical discourse that frequently arise within DeLanda's text, we find that his consistent employment of scalar imaginaries at best risks reductivism and at worst imports a power-laden system that privileges certain socio-spatial aggregations over others. Part of our critique of scale turns upon the ways that geographers frequently import – sometimes even in spite of themselves – imaginaries of verticality that organize discussions of power according to structured difference, where specific sorting mechanisms/concepts are deployed in order to *select out* certain aggregated relations, bodies or movement. DeLanda's frequent and deliberate use of scale as a tool for articulating the fundamental processes of assemblage theory represents an attempt

to illustrate the contributions of 'micro' parts to the emergence of 'macro' entities (e.g. cities or markets), such that those parts encumber the effects of new organizations in terms of size, force, movement and duration (DeLanda 2006, 34). He explains:

> The identity of any assemblage at any level of scale is always the product of a process (territorialization and, in some cases, coding) and it is always precarious, since other processes (deterritorialization and decoding) can destabilize it. For this reason, the ontological status of assemblages, large and small, is always that of unique, singular individuals. (2006, 28)

While we affirm, with Escobar, aspects of DeLanda's development of assemblage theory for presenting 'an alternative to the organic or structural totalities postulated by classical social science' (Escobar 2007, 107), we find that his invocation of scale short-circuits the productivities that could surface in such anti-essentialist and singularizing thought. So while DeLanda is clearly at pains to avoid conceptualizing successive layers of scale – *the* neighbourhood, *the* city – they continuously resurface as transparent and critically preemptive objects, cemented into a ranking of appropriate processes relative to equally cemented neighbours (thus the city becomes sandwiched between the neighbourhood and the nation). This formulation enables DeLanda's readers to imagine aggregates of larger or smaller size, but only at the cost of taking their production in space for granted. What is more, it provides a picture of the world wherein nothing really looks all that different; though we take a different route, at the end, the same spatio-conceptual objects remain. The problem is not simply that, for DeLanda, scale is treated as a hierarchical given, but that, throughout his analysis, the classic analytical objects of scale – those imaginary puzzle pieces that combine to form a picture of scalar hierarchy – retain their critical hegemony.

> Do 'embedded assemblages' [DeLanda] amount to a manifold (Marston *et al.*), whether with emergent and adaptive properties or not? (Escobar 2007, 111)

Despite the fact that he retains a scalar conceptualization, we still see connections between DeLanda's notion of assemblages and our own reading of manifolds. Indeed, some of these connections have already been articulated by DeLanda. Put most plainly, we can configure a relation between the two when oriented by the Deleuzean axis of the actual and the virtual (DeLanda 2002). In DeLanda's

account (2006), assemblages tend to look like actualities that take their own 'scales' for granted (scale looks in DeLanda like the 'there' where the assemblage often happens). Ideally, each assemblage should operate according to its own emergent 'diagrams' of power relations (that is, its *tendencies* toward certain force relations and organizations conditioned by its own situatedness). As we understand them, manifolds consist of the dynamism of force relations expressed potentially or virtually in the articulation of the emerging site. They are the potential upon which a diagram traces a trajectory or maps a set on interrelating, inter-affective forces. At issue, then, is a distinction between the assemblage and the site, rather than the assemblage and the manifold.

DeLanda distinguishes himself from Deleuze, explaining:

> Because Deleuze does not subscribe to the multiscale social ontology that I am elaborating here, he never says that each of these entities (interpersonal networks, institutional organizations, cities, etc.) have their own diagram. On the contrary, he asserts that the diagram 'is coextensive with the social field'. (DeLanda 2006, 126)

But here, the diagrams emerge almost invariably out of the banal, classically scalar objects that we have been describing above, leaving us in a position where we have a new term (assemblage) with which to talk about cities, but a similar analytic (diagrammatic 'tendencies') with which to say that the city does what we always thought it did (think central place theory, for instance). By contrast, our account of the virtuality of sites *makes that which goes into their constitution* determinant with respect to their diagrammatics. Thus, the virtual communicates with its site situatedness: the site ontology thereby avoids imposing precontextualized social spaces (scales) on emergent diagrams. Hence, we propose *n* diagrams, a virtually infinite number with which to speak to the specific variations and differences unfolding in the equally specific and singular site.

> What happens to the logic of control, to minoritarian logics, to the enabling and open-ended character of dispersed network formations dreamt up by some contemporary movements if gains cannot be thought about in terms of scalar effects? (Escobar 2007, 111)

A Newtonian worldview continually haunts the calculus of mobilization and resistance. At its most basic, this resolves itself in size fetishism, where global capitalism and imperialism can only be combatted by entities operating at a similar scale. This leaves those who are constrained by various 'militant particularisms' (Harvey 1996), or who are too under-resourced or disorganized to 'scale jump' (Smith 1992), on the bench when it comes to the zero-sum game of global resistance. More recently, this view has been articulated through force relations, mobility and access in an equally large-but-more-inclusive confrontation between global Empire and the Multitude it constitutes (Hardt and Negri 2000, 2004).

Geographers have recently made positive inroads to modifying these conceptualizations in the context of various global anti-globalization and anti-capitalist movements (Glassman 2002; Wainwright and Ortiz 2006). From the perspective of the activist, an incorporative, both/and strategy has emerged as an attempt to tackle aggregations of power at multiple scales:

> Much debate goes on in the movement about whether to focus our efforts globally or locally. We need to do both. The global institutions can most effectively be countered on a global scale, with international coordination and solidarity. But on a local scale, alternatives are much easier to implement. By their very nature, the alternatives that lead to a restorative economic democracy will be small-scale and rooted in community. (Starhawk 2002, 259)

With regard to this type of political interrogation, we find DeLanda to be at his weakest. While we are inclined to disagree with much of the reliance on scalar thought that goes into conceiving strategies for social change, we are even less inclined to agree with DeLanda's conceptualization of social change, divorced as it is from the politics that drive such changes. Although there have been numerous advances in thinking about the complexities of social movements at the end of the twentieth century (Graeber 2002, 2004), DeLanda nevertheless exhumes resource mobilization theory (2006, 42) as the proper entry point for considering social movements in the context of an assemblage theory that takes the participants in an aggregate as being relatively interchangeable (p. 37). In the final tally, this is the worst kind of scalar-centrism, an analytic that makes scale the final measure of possibility for any social change and ultimately reduces all of the various dynamisms – trans-cultural and trans-continental affinities and solidarities – to a bottom line.

As an addendum to his third question, Escobar asks of our project,

Is every politics of scale not reduced to the conjunctural integrals of dispersed power if seen in terms of a notion of horizontality and mobility, even when 'conceived as both open and multi-directionally and unfolding non-linearly' (Marston *et al.* 2005, 26)? (Escobar 2007, 111)

And yes, the dispersion of power *has* been the critical question for a number of years – both within and without the academy. It is no surprise that, in the absence of scale, Escobar would ask us about the seams on which certain lines of power begin to tear. Frankly, we find it easier to imagine these conjunctures as following along and redrawing the boundaries of dynamic sites defined by Deleuzean difference than as traversing space through structurated scales, no matter how complex. And as our site-specificity would suggest, we register affinities with the approaches taken by contemporary social movements generating strange attractors and even stranger aggregations of any number of different, minor political groups (such as multiplicities of affinity groups) that, in the style of *zapatismo*, work from developing solidarities with various minoritarian political groups with the intent of producing mobile, mutable aggregates.

Conclusion

If you got this far you must really love scale (or love talking about it). We close ever so briefly by gratefully acknowledging the commentators on our paper: Chris Collinge, Arturo Escobar, Scott William Hoefle, Andrew Jonas, Helga Leitner and Byron Miller. The amount of effort required to write such detailed and thoughtful critiques explains why such exchanges are so rare. We also extend special thanks to Adam Tickell for providing the space for this interchange to occur.

Acknowledgements

References

Amin A 2002 Spatialities of globalisation *Environment and Planning A* 34 385–99

Bonta M and Protevi J 2004 *Deleuze and geophilosophy* Edinburgh University Press, Edinburgh

Castells M 1989 *The informational city: information, technology, economic restructuring, and the urban-regional process* Blackwell, Oxford

Collinge C 2006 Flat ontology and the deconstruction of scale: a response to Marston, Jones and Woodward *Transactions of the Institute of British Geographers* 31 244–51

DeLanda M 1997 *A thousand years of nonlinear history* MIT Press, Cambridge MA

DeLanda M 2002 *Intensive science and virtual philosophy* Continuum, New York

DeLanda M 2006 *A new philosophy of society: assemblage theory and social complexity* Continuum, New York

Deleuze G 1994 *Difference and repetition* **Patton P** trans Columbia University Press, New York

Deleuze G and Guattari F 1994 *What is philosophy?* **Tomlinson H and Burchell G** trans Columbia University Press, New York

Derrida J 1972 Structure, sign, and play in the discourse of the human sciences in **Macksey R and Donato E** eds *The structuralist controversy* Johns Hopkins University Press, Baltimore MD 247–72

Escobar A 2004 Other worlds are (already) possible in **Sen J, Anad A, Escobar A and Waterman P** eds *World social forum: challenging empires* Viveka, Delhi 349–58

Escobar A 2007 The 'ontological turn' in social theory: a commentary on 'Human geography without scale' by Sallie Marston, John Paul Jones II and Keith Woodward *Transactions of the Institute of British Geographers* 32 106–111

Foucault M 1994 *The order of things* Vintage, New York

Gibson-Graham J K 2002 Beyond global vs local: economic politics outside the binary frame in **Herod A and Wright M** eds *Geographies of power: placing scale* Blackwell, Oxford 25–60

Glassman J 2002 From Seattle (and Ubon) to Bangkok: the scales of resistance to corporate globalization *Environment and Planning D: Society and Space* 20 513–33

Graeber D 2002 The new anarchists *New Left Review* 13 61–73

Graeber D 2004 *Fragments of an anarchist anthropology* Prickly Paradigm Press, Chicago IL

Hardt M and Negri A 2000 *Empire* Harvard University Press, Cambridge MA

Hardt M and Negri A 2004 *Multitude: war and democracy in the age of empire* Penguin, New York

Harvey D 1996 *Justice, nature and the geography of difference* Blackwell, Oxford

Herod A 1991 The production of scale in United States labour relations *Area* 23 82–8

Hoefle S W 2006 Eliminating scale and killing the goose that laid the golden egg? *Transactions of the Institute of British Geographers* 31 238–43

Howitt R 1993 'A world in a grain of sand': towards a reconceptualization of geographical scale *Australian Geographer* 24 33–44

Howitt R 2003 Scale in **Agnew J, Mitchell K and O'Tuathail G** eds *A companion to political geography* Blackwell, Oxford 138–57

Jonas A E G 2006 Pro scale: further reflections on the 'scale debate' in human geography *Transactions of the Institute of British Geographers* 31 399–406

Jones K 1998 Scale as epistemology *Political Geography* 17 25–8

Leitner H and Miller B 2007 Scale and the limitations of ontological debate: a commentary on Marston, Jones and Woodward *Transactions of the Institute of British Geographers* 32 116–125

Marston S 2000 The social construction of scale *Progress in Human Geography* 24 219–42

Marston S A, Jones III J P and Woodward K 2005 Human geography without scale *Transactions of the Institute of British Geographers* 30 416–32

Marston S, Woodward K and Jones III J P 2007 Ontologies of globalization *Globalizations* 4 1–19

McMaster R B and Sheppard E 2004 Introduction: scale and geographic inquiry in **Sheppard E and McMaster R B** eds *Scale and geographic inquiry* Blackwell, Oxford 1–22

Mitchell D 1995 There's no such thing as culture: towards a reconceptualization of the idea of culture in geography *Transactions of the Institute of British Geographers* 20 102–16

Robertson R 1992 *Globalization: social theory and global culture* Sage, Newbury Park CA

Schatzki T R 2002 *The site of the social: a philosophical account of the constitution of social life and change* Pennsylvania State University Press, State College PA

Smith N 1992 Contours of a spatialized politics: homeless vehicles and the production of geographical scale *Social Text* 33 54–81

Spinoza B 2000 *Ethics* **Parkinson G H R** trans Oxford University Press, New York

Starhawk 2002 *Webs of power: notes from the global uprising* New Society Publishers, Gabriola Island BC

Tagg J 1997 Globalization, totalization and the discursive field in **King A** ed *Culture, globalization and the world-system* University of Minnesota Press, Minneapolis MN 155–60

Taylor P 1982 A materialist framework for political geography *Transactions of the Institute of British Geographers* 7 15–34

Wainwright J 2005 Politics of nature: a review of three recent works by Bruno Latour *Capitalism, Nature, Socialism* 16 115–20

Wainwright J and Ortiz R 2006 The battles in Miami: the fall of the FTAA/ALCA and the promise of transnational movements *Environment and Planning D: Society and Space* 24 349–66