Human geography without scale

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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.

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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 understandings 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

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 delimiting 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 epistemological 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 horizontally 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'

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

(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 processual 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.

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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.

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