Geographic dialectics?

Eric Sheppard
Department of Geography, University of Minnesota, Minneapolis, MN 55455, USA;
e-mail: shepp001@umn.edu
Received 17 October 2007; in revised form 4 June 2008

Abstract. As radical geography, inflected by Marx, has transformed into critical geography, influenced by poststructuralism and feminism, dialectical reasoning has come under attack from some poststructural geographers. Their construction of dialectics as inconsistent with poststructural thinking, difference, and assemblages is based, however, on a Hegelian conception of the dialectic. This Hegelian imaginary reflects the intellectual history of radical and/or critical anglophone geography. Yet, dialectics can be read in a non-Hegelian, much less totalizing and teleological, and more geographical way. This broader reading opens up space for considering parallels between dialectics, the assemblages of Deleuze and Guattari, and aspects of complexity theory.

Introduction
The term dialectics, and its variants, has circulated in human geography since the late 1960s, entering the discipline alongside radical geography. It would require further research to definitively track shifts in its prevalence. Disregarding their other limitations, the Institute for Scientific Information (ISI) indices do not include places where it initially appeared, notably Antipode (between 1969 and its commercialization in 1986) the Union of Socialist Geographers Newsletter of the 1970s and 1980s, or various radical geography conferences. Since 1989, however, the terms dialectic, dialectics, or dialectical have appeared in the titles, keywords, and abstracts of geographical journals included in the ISI database an average of six times annually, with bimodal peaks in the early 1990s and after the turn of the millennium (http://portal.isiknowledge.com/).

Its low-frequency but steady presence indicates that dialectics has remained a drumbeat underlying radical and critical human geography. The turn to feminist and poststructural theory, however, has been accompanied by increasing skepticism about dialectics within the geographical literature. Prominent interventions have characterized dialectical reasoning as inconsistent with such poststructural concepts as Derridian diffe¨ rance and Deleuze ^ Guattarian assemblages (cf Doel, 1993; 1999; Jones, 1999; Jones et al, 2007).

In this paper I argue that such a disaffection with dialectics is overblown, jetisoning the baby with the bathwater. My argument is based on two propositions. First, the particular genealogy of radical and critical geography has resulted in anglophone geographers aligning with a Hegelian approach to dialectical reasoning. This reading, I suggest, functions to erase other readings of dialectics that can contribute to contemporary critical sociospatial theory. Second, adoption of alternative readings, that need be neither totalizing nor teleological, offers a more geographical interpretation that reveals commonalities between dialectics, certain readings of Deleuze and Guattari, and aspects of what has become known as complexity theory. To be clear, I do not wish to reassert dialectics as the master narrative. I simply suggest that the many insights of poststructural sociospatial theory need not be presaged on the rejection of dialectics, tout court. In this brief paper neither is it possible, nor is it my intent, to undertake a deep philosophical reading of dialectical philosophers.
Such readings certainly have their place in sociospatial theory, but an obsession with philosophical foundations and ontological fidelity can also divert from practical emancipatory agendas (cf Leitner et al, 2008). Instead I seek to provocatively identify and make space for alternative readings—a smash-and-grab philosophy, if you will.

**Considering the Hegelian imaginary**

Within the actor networks of knowledge production characterizing anglophone geography, the dialectic has come to be bracketed with the thinking of Marx, but also Hegel. There are good reasons for this, of course. Marx is explicit about his dialectical approach, which he framed as a materialist inversion of Hegel’s idealist dialectics, and Marxian geography of the 1968 generation was the origin point for the genealogy of ‘critical’ approaches of all stripes within our epistemic community. Yet, every opportunity engenders a crisis. This particular spatiotemporal moment of origin for radical geographic knowledge production has elicited understandings of the dialectic within geography that tendentially resonate with Hegel. Consider, for example, the following excerpt from Gregory’s entry on ‘dialectic(s)’ in *The Dictionary of Human Geography* (2000):

> “The perpetual resolution of binary oppositions ... . Within this scheme, particular analytical importance is attached to the identification of contradictions ... a principle that both (i) enters into the constitution of a SYSTEM or structure and (ii) whose operation negates, opposes (‘contradicts’) the stability or integrity of that system or structure ... . In particular, those who have been persuaded by the claims of deconstruction have set dialectics aside, challenging the metaphysics of binary opposition ... and refusing to conceive of difference as contradiction” (pages 172–173).

Gregory captures the essence of the characteristic conception of dialectics held by anglophone geographers (proponents and critics alike), resonating with Hegelian notions of systems and negation, also pointing to how some poststructural geographers have come to dismiss dialectics (now also grounded in Deleuze’s Spinozist efforts to bypass Hegel). Yet, Hegel offers just one approach to dialectics.

In his book *Dialectic: The Pulse of Freedom* Bhaskar (1993) reviews the centrality of dialectics in European philosophical thought, from Zeno’s paradoxes to Aristotle and Kant, prior to its appropriation by Hegel. He argues that the dialectical impulse covers any

> “more or less intricate process of conceptual, social (and sometimes even natural) conflict, interconnection and change, in which the generation, interpenetration and clash of oppositions, leading to their transcendence ... plays a key role” (page 3).

This, in fact, describes the trajectory of much of European philosophical debate.

Bhaskar notes the centrality of negation to dialectical reasoning, but argues that negation should be understood in ways that are much broader than Hegel’s conception of contradiction. A philosophical realist, Bhaskar distinguishes ‘real’ negation, which embraces any real determinate “absence, non-being ... . But ... also ... mediating, distancing and absencing” (page 7), from what he describes as Hegel’s ‘radical’ negation: self-consciously negating processes entailing “the auto-subversion, transformation or overcoming of a being or condition” (page 6). In his view, then, negation includes irreducible difference, as well as Hegel’s transcendence of contradiction (the waltz of thesis/antithesis/synthesis).

Bhaskar goes on to argue that Hegel’s narrow conception of negation in turn is responsible for the totalizing and teleological nature of his dialectic. Hegel’s account of the dialectic is one of a progressive movement toward enlightenment, proceeding through sequences of self-reflection as it moves seemingly inexorably via ‘aufhebung’ (sublation), towards ‘absolute Wissen’ (absolute knowing). This formulation of the
dialectic, at least as commonly read, involves “the self-generating self-differentiating and self-particularizing process of reason” (Bhaskar, 1993, page 17). Its limitations include a dyadic account of contradiction, an ontological univalency, and a unilinear conception of progress, culminating in triumphalism and positivity (a final, ideal, end state)—in addition to the idealism that was Marx’s particular concern. By comparison, contemporary (poststructural) sociospatial theory emphasizes difference (against totality), rejects dualisms and binaries as overly limiting, and is antiteleological in its inclinations (as when postcolonial theorists reject the principle that there is one, European, path to civilization). There seems precious little room for contemporary sociospatial theory, then, in Hegel’s particular interpretation of the dialectic.

Hegel’s ‘radical’ instinct is shared by Marx, notwithstanding the latter’s materialist inversion of Hegel. When Marx’s dialectical materialism is reduced, by some scholars, to a historical materialist sequence of self-contradicting modes of production, which must be passed through before communism is reached and such contradictions resolved, a Hegelian dialectical imaginary is clearly evident.

Both Marx and Hegel were biased towards internal, radical and linear negation—a fact partly explained by the narrative presentational form... of the nineteenth century expository text” (Bhaskar, 1993, page 59).

As Bhaskar argues, this notion of unilinearity, of a given sequence of stages that progress follows, stems from Hegel’s dyadic model of two opposed concepts (thesis/antithesis) from which resolution is generated (synthesis). It also implies an ontological univalency: teleological progress toward the only possible outcome. It is important to note, however, that Marx has been read as being more open to contingencies shaping the trajectories of progress [as in his discussions of an ‘Asiatic’ mode of production, or Lenin’s analysis of Russia (Lenin, 1970 [1916]; Marx, 1993 [1857–58]), than is the case for Hegel.

Although nothing in the notion of dialectical reasoning suggests that negation need ever stop, Hegel’s enlightenment belief in a final resolution means that eventually negation must be “cancelled and positivity restored” (Bhaskar, 1993, page 8) in a triumphant philosophical coda. (Marx writes in similar terms about communism, at times.) This entails the ontological position that the world is a hermetic and inescapable totality:

“a concrete totality, generated by contradiction, in a process of continual Aufhebung ... which, when it is achieved, ... constellationally closes both being and knowledge, united by the principle of identity” (page 120).

To summarize the above arguments, the imaginary underlying Hegel's dialectical philosophy is that of progress defined as a univalent and teleological process, driven by an obsession with dyadic self-contradictions, to be overcome via self-conscious transformative reasoning. By contrast as briefly noted above, contemporary sociospatial theory raises a series of questions that trouble this imaginary. If negation is to be restricted to a transformative account of dyadic self-contradiction, how can it avoid binary thinking and take up the question of difference? How can such a teleological, stageist, and triumphalist conception of knowledge production (indeed, of society itself) be squared with a desire to take seriously the very different norms and trajectories encountered in different times and places? Stageist accounts present a single, usually Eurocentric, model of development and knowledge, with respect to which all other geographical forms end up being represented as incomplete and inadequate (Blaut, 1993; Guha, 1997; Massey, 2005). More generally, how can such an immanent, totalistic, teleology be squared with the emergent, uncertain, and unpredictable nature of socionatural-spatial change, and our desire to imagine other possible worlds to that of neoliberalizing, globalizing, capitalism (or world communism)? If the Hegelian dialectic runs afoul of the nostrums of contemporary sociospatial theory,
as suggested here, what does this mean for sociospatial theorists who persist in
drawing on that other master dialectician: Marx?

Dialectics beyond Hegel

Hegel's dialectical imaginary is, however, a particularly limiting variant. Harvey (1996) points toward this in his description of relational dialectics, itself inspired by Ollman (1993). In chapter 3 of Justice, Nature and the Geography of Difference, Harvey (1996) describes dialectics in the following terms:

"Dialectical thinking emphasizes the understanding of processes, flows, fluxes, and relations over the analysis of elements, things, structures and organized systems ...
There is a deep ontological principle involved here ..., that elements, things, structures and systems do not exist outside of or prior to the processes that create, sustain or undermine them ... . Epistemologically, the process of enquiry usually inverts this emphasis: we get to understand processes by looking either at the attributes of what appear to us ..., to be self-evident things or at relations between them ... . On this basis we may infer something about the processes that have generated a change in state but the idea that the entities are unchanging in themselves quickly leads us to a causal and mechanistic thinking. Dialectical reasoning ... transforms the self-evident world of things ... into a much more confusing world of relations and flows that are manifest as things" (page 49).

Harvey's relational dialectics, summarized in table 1 (column A), gestures towards a much less teleological dialectics than that of Hegel. This can be seen, for example, in his exposition of the affinities between relational dialectics, Leibnitz's discussions of monads and compossible worlds, and Whitehead's Process and Relation (Leibnitz, 1991; Whitehead, 1929). Harvey and Ollman are known, of course, for their active prosecution of the intellectual legacy of Marx. This makes it tempting to dismiss their readings of dialectics (particularly when marshaled to argue for socialism as the other of capitalism) as necessarily that of a Marx who inverts Hegel by offering a materialist rather than an idealist dialectics, but otherwise accepts his unilinear and triumphal imaginary. There are elements of this in Marx, of course, as there are in Harvey and Ollman. For example, I have argued elsewhere that Harvey's dialectical reading of capitalism becomes reductionist at times—as when discussing value (Sheppard, 2004).

Nevertheless, like Bhaskar, their conception is of a far more complexly relational, and open ended, dialectics than is generally attributed to Hegel (or, too often, Marx). It need not be dyadic in its conception; it does not reduce negation to contradiction (although this remains an important aspect of negation); and there is no teleological goal. Bhaskar's subtitle (The Pulse of Freedom) is chosen with care. He argues that the Hegelian imaginary entails the 'TINA' principle (Margaret Thatcher's 'there is no alternative' maxim). By contrast, an open-ended dialectic is one where many trajectories are possible—where there is space to transform the world for the better, in any number of unexpected ways (the ethical/political choices that must be made).

On the face of it, such open endedness seems inconsistent with the internal relational nature of the dialectic. Indeed, as noted above, some poststructural critics argue that the dialectic is a totalizing ontology, in which everything is complexly related to and constitutive of everything else. In this view, in the final instance, dialectical thinking reduces to Bhaskar's description of Hegel's concrete totality. (Similar objections are offered against 'system' and 'structure'.) Yet, as Bhaskar (1993) persuasively argues, totalities can also be open ended:

"partial totalities, which may also contain external, contingent or no connections between the elements [imply] that my concept of holistic causality cannot be expressive or centered in the way that Hegel's totality is" (pages 126—127).
Table 1. Parallels between relational dialectics, assemblages, and complexity.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Relational ontology</td>
<td>Entities have no stable, essential characteristics, but are constituted through the ‘internal’ relations through which they are connected.</td>
<td>An assemblage is a whole, whose properties emerge through interactions among components.</td>
<td>Objects are relationally constituted.</td>
</tr>
<tr>
<td>Heterogeneity</td>
<td>All entities are heterogeneous, possessing internal contradictions.</td>
<td>Its components are heterogeneous, at all scales.</td>
<td>Objects and systems are heterogeneous (at all scales).</td>
</tr>
<tr>
<td>Relational causality</td>
<td>Subject/object, cause/effect, are interchangeable; parts and wholes are mutually constitutive.</td>
<td>Assemblages at one scale emerge from relations between smaller scale components; components can be unplugged from assemblages, because their existence is not entirely determined by their relations, yet they are also internally related.</td>
<td>Local/global and short term/long term are mutually constitutive.</td>
</tr>
<tr>
<td>Socionature</td>
<td>Society and ‘nature’ are inseparable, dialectically related.</td>
<td>Assemblages are socionatural, with agency operating in all domains; components play roles that vary from material to expressive in nature.</td>
<td>Systems are socionatural, with agency operating in all domains.</td>
</tr>
<tr>
<td>Change</td>
<td>Change is a characteristic of all ‘systems’; it is stasis and ‘permanence’ that require explanation; transformative behavior is an emergent feature of the heterogeneities and contradictions within and between entities.</td>
<td>Immanent processes of emergence are driven by repetition and difference.</td>
<td>The system spends large amounts of time in motion, far from equilibrium; change is path dependent and potentially transformative.</td>
</tr>
<tr>
<td>Space–time</td>
<td>Space–time is contingent and relational, and contained within socionatural processes.</td>
<td>Components shape assemblages through mechanisms of territorialization (reinforcing homogeneity/identity) and deterritorialization (undermining homogeneity/identity).</td>
<td>Time is unidirectional and spatiotemporality is an emergent relational feature.</td>
</tr>
<tr>
<td>Open endedness</td>
<td>Dialectical inquiry works with concepts and abstractions that are always subject to revision, and necessarily incorporates ethical and political choices given the always present possibility of the emergence of other possible worlds.</td>
<td>The relations of an assemblage are not logically necessary but contingently obligatory, and must be revealed empirically.</td>
<td>The future is uncertain: minor events can have large and lasting effects.</td>
</tr>
</tbody>
</table>
In short, Bhaskar argues for the possibility of a dialectical imaginary that, while holistic in approach, avoids the traps of stageism and teleology, and can embrace différence. Indeed, in his view this is essential to any emancipatory politics whose possible trajectories remain open to being shaped by those agitating for change, because it creates space for the

“irreducible alterity, non-identity or difference ... essential to any future socialist dialectics which would avoid the sinking back into a simple undifferentiated expressive unity” (page 114).

Even Althusser’s ‘structuralist’ conception of overdetermination can be read as open ended in this way (Althusser, 1962). The post-Marxian economists Resnick and Wolfe (2004) draw this parallel, describing overdetermination as a conception in which:

“each and every individual process within society is conceived as a site of different effectivities emanating from all the other social processes. Each process is thus both cause and effect; each partly constitutes and is constituted by all the others” (page 99).

[Anglophone radical scholars came to see Althusser as epitomizing a structuralist approach to Marxism, after Thompson (1980) attacked him for rejecting ‘empiricism’. Yet, Althusser is experiencing something of a recuperation in these poststructural, posthuman, times (cf Castree et al, 2004; Gidwani, 2008; Massey, 2005).]

It is worth noting that this kind of nonteleological relational ^ dialectical thinking about the world also remains present in the ‘natural’ sciences—for example, in biology (Levins and Lewontin, 1985), physics (Smolin, 1997), and genetics (ENCODE Project Consortium, 2007). Indeed, as I will elaborate on below, it is part and parcel of some of the approaches that have become known as complexity theory.

‘Relational’ geographies: dialectics, assemblages, and complexity

Geography has recently been framed as having taken a ‘relational’ turn (eg Bathelt and Gluckler, 2003; Massey, 2004; Yeung, 2004). Relationality is presented as a difference: as other than preexisting geography [notwithstanding Tobler’s (1970) so-called first law of geography: “everything is related to everything else, but near things are more related than distant things” (page 236)], and quite certainly different to dialectical ^ Marxist geography. This relational turn has been articulated as emanating from a variety of influences. The genealogy stems from a concern for agentic networks, particularly actor-network theory (cf Latour, 2005; Murdoch, 2005); and from feminist geographers’ insistence on feminism as relational thinking (cf England and Lawson, 2005; Rose, 1993). Recently, relational geographers have turned to citing Deleuze and Guattari, and Spinoza, to ground their arguments for a relational (for some, even a ‘flat’) ontology (cf Marston et al, 2005; Massey, 2005; Whatmore, 2006).

Yet, geography’s relational turn has included an unfortunate and untenable tendency to equate relational approaches with poststructuralism, but not with Marx. For example, relational space is central to Massey’s sociospatial theory, but she does not acknowledge Harvey’s own decades-long engagement with relational space and relational thinking [nor does Harvey reciprocate (Sheppard, 2006)]. In the same vein, Amin and Thrift (2007), vigorously responding to Harvey, propound a “dialectic as far-from-synthesis” (page 113), implying that Harvey replicates the Hegelian imaginary. In so doing, geographers have followed the lead of poststructural French philosophy and social science, which also sought to differentiate itself from Marxist dialectics—dating back to perfectly justifiable disagreements with the orthodoxy of the French Communist Party after 1968 (Dews, 1987). Yet, the party political orthodoxy that French poststructuralists rejected can be seen as stemming from a positivist and
law-seeking Marxism, not the relational, nonparty, post-Hegelian Marxism of Althusser, Harvey, and others.

Much ink has been spilt, recently, in high-profile debates pitting Marxian political economy against poststructural approaches to sociospatial theory. See, for example, the exchanges between Amin and Thrift (2005; 2007), and Harvey (2006) and Smith (2006), and those between Marston et al. (2005) (see also Jones et al., 2007), and Leitner and Miller (2007). These reflect earlier attempts to exclude dialectics from poststructural thought, noted at the beginning of this paper. One way to engage across these constructed lines of difference, and to counter their disunifying effects on critical geography, is to reconstruct how dialectics and poststructuralism can be mutually constitutive. Consider, for example, DeLanda’s interpretation of Deleuze and Guattari’s theory of assemblages (DeLanda, 2002; 2006). Taking a realist stance (like Bhaskar with respect to dialectics), DeLanda describes assemblages in terms that have many parallels with dialectics (table 1, column B).

The parallels between columns A and B are striking. Both approaches stress that properties emerge relationally; that entities are always heterogeneous; that they are mutually constitutive within and across scale; that the human and nonhuman are intimately related and co-implicated; that change is the only constant; that spatiotemporality is an emergent but influential aspect of these shifting socionatural relations; and that trajectories are contingent and uncertain. Indeed, the last entry under assemblages is almost identical to the argument made by Sayer (1986) about the difference that space makes to Marxian political economy.

This table and the accompanying analysis raise two issues. First, the rhetorical device of a table is at odds with relational thinking, as it stresses categories rather than relationships. Relational geographers have turned to this device on occasion (cf. Amin and Thrift, 2005; Harvey, 1996), but it should nevertheless be seen as a mnemonic representation that undermines the relationalities between approaches and themes stressed here. Second, the realist inclinations of Bhaskar, DeLanda, and Sayer raise the question of whether the argument made here, seeking to deconstruct any dualisms that separate dialectics from assemblages, is pertinent only to realist ontologies. Yet, I can imagine no reason why, in principle, Bhaskar’s notions of multifaceted negation, partial totalities, and nonteleological trajectories need to be restricted to the domain of realism. (Indeed, the capacity of poststructural theory to seamlessly move between representational theory and Deleuzian materialism undermines any claims that idealism and realism are hermetic ontological domains.)

The establishment of the above-listed connectivities between dialectics and assemblages should not be taken to imply that either approach can, or should be, reduced to the other. On the one hand, DeLanda believes that the principal feature differentiating assemblages from dialectics is that dialectical reasoning constructs a hermetic totality, whereas entities can be ‘unplugged’ from assemblages—a claim that Bhaskar, Harvey, and I would disagree with. DeLanda also adopts a naturalistic instead of a constructivist approach to scale, reminiscent of hierarchy theory in ecology rather than scale as theorized in contemporary sociospatial theory (Sheppard and McMaster, 2004; Wu, 1999). On the other hand, Harvey (2000) insists on the possibility of unified resistance to capitalism, at odds with, for example, Hardt and Negri’s (2004) Deleuzian multitude. Others, again, are not taken by DeLanda’s interpretation of Deleuze. Yet, the persistence of such disagreement is far from problematic. To the contrary, combined with the possibility (and desire) of engagement across such differences, due to certain commensurabilities, it can become the very stuff of creative knowledge production (Longino, 2002).
A non-Hegelian dialectical imaginary has the potential also to engage with other putative others than poststructuralism. Consider, for example, the assemblage of ideas that have been gathered under the rubric of complexity theory, a topic that has recently been receiving attention in domains that range from physics to cultural studies, including geography (cf. Law, 2004; Thrift, 1999). Table 1, column C, lays out some characteristics of complex dynamical out-of-equilibrium systems, as described by Ilya Prigogine (1996), illustrating a repetition of the parallels drawn between relational dialectics and assemblages, now extended to embrace this approach to complexity. Indeed, DeLanda (see also Bonta and Protevi, 2004) suggests that the methodologies of complexity theory are directly applicable to assemblages [although sociospatial theorists will note that the conceptualization of space–time associated with complexity shows closer affinities with dialectics, and with Massey’s (2005) emergent relational space–time, than with DeLanda’s scale-centric approach].

In the domain of method, other unexpected relations emerge. Notwithstanding tendencies among ‘critical’ human geographers to dismiss quantitative approaches as tainted by positivism and neoclassical economics, the domains of mathematics associated with nonlinear and complex systems have turned out to be pertinent for dialectical, postmodern, and assemblage ontologies (Cilliers, 1998; DeLanda, 2006; Plummer and Sheppard, 2006; Rosser, 2000). [For a more detailed exposition, see Bergmann et al (2009).]

Conclusion

In this paper I have argued that dialectics, more broadly conceived, still deserves close attention in critical sociospatial theory. I have suggested that there has been a tendency among some critical geographers, stemming from the particular trajectories through which critical theory entered the space–time of post-1945 Anglophone ‘critical’ geography, to read dialectics in an overly narrow—Hegelian—way. Under such a reading, dialectics would indeed have severe limitations that cut against the grain of contemporary sociospatial theory. Yet, I have also argued that dialectics can be a much broader, open-ended, less totalizing, nonteleological, and perhaps more radical, form of reasoning, with underexplored affinities to poststructural human geography. I have sought to visualize some such affinities in table 1. I do not claim that dialectics is identical with assemblages, with poststructural geography more generally, or with complexity theory. Nor do I wish to recuperate dialectics without the hard work of acknowledging the implications of important insights brought into our discussions from recent philosophical preoccupations. There is no foolproof approach, and the exact nature of persistent differences must await more detailed examination. Each approach, or local epistemology, is no more than an emergent permanence, whose nature and properties are not defined internally but are shaped through their relations with other ontologies and epistemologies. We would all benefit from exploring these relationalities, both reflective and constitutive of knowledge production, rather than hanging our hat in just one area.

Acknowledgements. I am grateful to Luke Bergmann and Arun Saldanha, and two anonymous referees, for their comments and suggestions.

References

Bonta M, Protevi J, 2004 Deleuze and Geophilosophy (Edinburgh University Press, Edinburgh)
DeLanda M, 2002 Intensive Science and Virtual Philosophy (Continuum, London)
Doel M, 1999 Poststructuralist Geographies: The Diabolical Art of Spatial Science (Edinburgh University Press, Edinburgh)
Gidwani V, 2008 Capital, Interrupted: Agrarian Development and the Politics of Work in India (University of Minnesota Press, Minneapolis, MN)
Gregory D, 2000, “Dialectics and difference: against Harvey’s dialectical ‘post-Marxism’ ” Progress in Human Geography 23 529 – 556
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
Longino H, 2002 The Fate of Knowledge (Princeton University Press, Princeton, NJ)
Massey D, 2005 For Space (Sage, London)
Ollman B, 1993 Dance of the Dialectic: Steps in Marx’s Method (University of Illinois Press, Champaign, IL)


Rose G, 1993 Feminism and Geography: The Limits of Geographical Knowledge (University of Minnesota Press, Minneapolis, MN)


Smith N, 2006, “What’s left? Neo-critical geography, or the flat pluralist world” Antipode 37 887 – 899

Smolin L, 1997 The Life of the Cosmos (Oxford University Press, Oxford)


Whatmore S, 2006, “Materialist returns: practising cultural geography in and for a more-than-human world” Cultural Geographies 13 600 – 609


Conditions of use. This article may be downloaded from the E&P website for personal research by members of subscribing organisations. This PDF may not be placed on any website (or other online distribution system) without permission of the publisher.