

## **Topological Twists: Power's Shifting Geographies**

**Draft article for:**

*Dialogues in Human Geography*

**August 2010**

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## Introduction

Topology is one of those words that, since finding a place in the discipline's vocabulary, has hovered over debates rather than been central to them. The appeal of topology, especially among certain poststructuralist geographers, seems to rest with the looser, less rigid approach to space and time that allows for events elsewhere to be folded into the here and now of daily life. A new found relief from the more fixed spatial trappings of Euclidian geometry clearly forms part of that appeal (see Amin, 2004, 2007; Amin and Thrift, 2002; Doel, 1999; Bickerstaff and Simmons, 2009; Hetherington, 1997a and b; Latham, 2002; Marston et al, 2005; Jones III et al, 2007; Murdoch, 2006). Such relief, though, is often short lived when the metaphorical use of familiar words in unfamiliar contexts – the 'twists' in the spatial arrangements of political authority or the 'folding' in of the global into the local – serve only to confuse rather than enlighten. The confusion, however, whilst real, masks a fallible attempt to capture something new, or rather shifts less well understood, within a makeshift, often borrowed vocabulary. A topological sensibility, to my mind, prompts us to think again about such things as scale and territory, networks and connection in a less rigid manner, but above all about power and its geometry, in ways that make a difference.

It matters to Derek Gregory (2003, 2004), for instance, in his account of the defiled landscapes of the West Bank and Gaza Strip. Power-topologies, for him, is perhaps the only way that one can make sense of the Israeli occupation of Palestinian town and villages where everywhere is perceived as a border location and the physical distances between enemies makes no sense at all in a setting where barriers and checkpoints, walls and roads, separate and divide in what he calls an 'Escher-like system of exclusion and inclusion' (2004, 125). In the distorted territories of Palestine, proximity and distance play across one another in ways that not only feel as if some people and places are drawn closer while others are pushed further apart: they actually are in terms of their day-to-day relationships.

In this landscape, the topological twists are exceptional in many respects, a jolt to our settled topographic imaginations, but not so far removed perhaps from a prosaic geography in

which relations of presence and absence are routinely reconfigured so that the gap between 'here' and 'there' is measured less by miles or kilometres and more by the social relationships, exchanges and interactions involved. As I see it, topology poses a challenge to the more clear-cut topographies common to the spatial arrangements of territorial and networked power, but it does not displace or replace either. Topological understandings merely bring us into line with many of the shifting geographies of power practised routinely by over-stretched NGOs and civil society campaigners, dispersed government authorities and sprawling corporations, as well as overlapping supra-national institutions and biopolitical agencies.

In a conventional topographic landscape, power has both location and extension, as do all 'things', and suppose physical distances which consist of measurable spans of the globe which tell us what is near and what is far, and who, in terms of *power-geometries* is capable of controlling such distances to gain advantage. In a topological frame, by way of contrast, power relationships are not so much positioned in space or extended across it, as compose the spaces of which they are a part. Distanciated ties and real-time connections are not understood as lines on a map which cut across territories, but rather as intensive relationships which create the distances between powerful and not so powerful actors. *Power-topologies* come into play when the reach of actors enables them to make their presence felt in more or less powerful ways that cut across proximity and distance. It is in such a fashion, that Gregory's Escher-like spaces take both their shape and relational form.

In what follows, I first consider some of the thinking which has had a direct influence upon the manner in which topology has been taken up within the discipline. I do so, however, in a way that does not eclipse territorial or network approaches, but rather in a way that points to the limited ability of conventional geometric concepts to account for recent spatial shifts in the architecture of power. Following that, I draw out the distinctive characteristics of power-topologies, what such an approach has to offer, and where it parts company with power-geometries.

Finally, to bring home the possibilities for different power plays opened up by a topological approach, I explore the ways in which NGOs and campaigning groups have been able to make 'publics' present across a range of social justice issues. The intent is to show how the ability to draw distant others within close reach or construct the close at hand at-a-distance are indicative of the cross-cutting mix of distanced and proximate actions that is increasingly central to the workings of power today.

## Topological landscapes

Topology and landscape are words that rarely follow one after the other, but you do not have to fully subscribe to Leibniz's notion of the world enfolded in the landscape of the soul, to believe that landscapes may be 'folded' by the 'plaiting' of time into space. For this insight, geographers owe much to the Baroque musings of Gilles Deleuze (1993, 1995), but perhaps especially to a conversation between Bruno Latour and Michel Serres (1995) which evocatively captured the disruption to our sense of what is near and what is far that topology entails through the analogy of the crumpled surfaces of a handkerchief once folded and stuffed into our pocket (see Latham, 2002; Murdoch, 2006). Where the flat, well-ironed surfaces of a handkerchief stand in for a geometric landscape of fixed distances and well-defined proximities, the fabric, when folded, draws together weaves of cloth previously held apart and vice versa. Weaves that were once close are now distant from one another and, conversely, points previously at separate ends of the handkerchief are now in contact. The purpose of the analogy, presumably, is to convey the fact that in a topological world distance is not a good indicator of either separation or proximity; that the idea of folded landscapes is helpful in that respect because it conveys a rather abstract point about the possibility of space and time as non-metric.

It is the non-metric nature of topology that forcefully poses a challenge to conventional topography and shifts attention away from Leibniz and Deleuze towards the mathematical roots of topology. As a mode of thinking, topology evolved as an independent branch of

mathematics, more or less as a curiosity-driven response to the perceived rigidities of geometric shapes and surfaces that take their cue from the clear-cut co-ordinates of Euclidian space (Sklar, 1974; Peterson, 1988). The driving insight behind topology is that certain characteristics of things retain their integrity despite being twisted or stretched out of shape. The anthropologist, Edmund Leach, back in the 1960s, described topology as a geometry of elastic rubber sheeting precisely because the shape and size of things or the distance between them is less significant than what holds them together; that is, the *ways* in which they are connected, the nature of their relatedness, so to speak (Leach, 1961). In this, one can perhaps see the initial attraction of topology for Bruno Latour and other actor-network theorists, where object integrity, what holds networks together, is of paramount importance (Latour, 1987, 2005; see also Law, 1999).

It is one thing, however, to talk about rubber sheet geometries or landscapes which fold back onto themselves and quite another to shrug off our familiar geometric conventions. The idea that power and authority, for instance, are, in some sense, located or at least locatable within a given territory or that power may be extended through or over increasingly complex topographical landscapes is a more or less ingrained part of our geographical imaginations. Ingrained, in the sense that we are accustomed to thinking about power as, on the whole, an observable feature of any given territory or that its extension across a flat surface is, for the most part, relatively unproblematic. We can broadly pinpoint its location in certain bodies and institutions and ordinarily map the contours of their authority across a defined area. Such topographical features are not simply wrong or misplaced, but I would argue that neither do they capture many of the spatial reworkings of authority and leverage that shapes much of what goes on around us today. In certain respects, our conventional geometric descriptions are now, for better or worse, somewhat exhausted as a spatial vocabulary of power. What is perhaps odd is that many of those who work with the conceptual tools of territories and borders, boundaries and scales, are among the first to acknowledge that, yet fail to exploit the complex insights gained.

## Territory and topology

Since the publication of John Agnew's seminal paper 'The Territorial Trap' in 1994, which highlighted the strain between the ways in which power and authority are practised and the inability of scaled territories to 'contain' the relationships extended, there has been a certain relaxation of the geometric assumption that there are clear territorial 'insides' and 'outsides' to spatial authority (see also Agnew, 1999, 2005). Even before Agnew's intervention, the pre-giveness of territorial power had started to free itself from its fixed moorings in the face of a more complex and differentiated institutional geography of power. The privatization of authority, the shift from government to governance and the proliferation of regulatory bodies which appear to owe little to any notion of bounded authority have, more recently, led state spatial theorists, such as Neil Brenner (2001, 2004) and Bob Jessop (2005, 2008), to devise ever more elaborate geometric vocabularies to capture this new found spatial complexity. Less boxed in by a pre-given spatial geometry, they along with those like *Stuart Elden* (2009) in *Terror and Territory: The Spatial Extent of Sovereignty* have conducted a robust defence of the importance of territory and scale to contemporary politics. Territory is conceived as an achievement, not a given; something that is actively produced and practised, relative rather than absolute is its geometry. Oddly, though, whereas the twists and turns of recent political shifts are sharply observed, the spatial twists that underpin them are invariably subjected to a preconceived spatiality, albeit one increasingly elaborate in its geometry.

Brenner's (2004) concern in *New State Spaces* is clearly indicated by the title: the novel and emergent spaces of an institutional hierarchy that has taken shape as national state territoriality has been systematically unravelled, first, from above, by the growth of supranational institutions and then, from below, by the devolution and decentralization of decision-making powers to sub-national institutions. On this view the larger number of institutional interests on the political landscape, in particular the multiple sites of authority, from numerous quangos and private agencies to local administrative units, have undermined

the sense in which it is possible to talk of a national state apparatus as the territorial locus of power. State institutions no longer exist, if indeed they ever did, in 'pre-given territorial containers' (2004, 111), where national space itself is simply 'filled out' by devolved authority or decentralized power structures. The lines of authority, as much as where the edges are drawn, and the spaces of regulation, as much as where their extension halts, are themselves considered the product of political construction, open to manipulation and modification. This, then, is an altogether different landscape of power from one where the coordinates of authority are fixed territorially, and yet it is surprisingly familiar in its topographical bearings. This new institutional landscape with its relaxed geometries of power is variously described as multicentric or multiform, with associated spatial levels, but above all as multiscalar in its sociospatial configuration. The scaling and rescaling of power are the descriptors used to capture this new found territorial complexity, where authority can be 'upscaled' or 'downscaled' and power able to 'jump' scales (Smith, 1993, 2004; Swyngedouw, 2000). The elasticity of scale in this scenario, however, is not a property that Leach would have recognised, where a recalibrated metric is used to capture power's shifting geographies that, to all intents and purposes, cut across scale not reflect it. The price paid by Brenner in his attempt to preserve the spatial integrity of scale and territory is arguably one of conceptual overextension. In attempting to explain too much through scale, he actually explains too little. What is missed by this overextension of scale is the ability of different political actors, some public, some private, to exercise powers of reach that enable them to be more or less present within and across urban and regional political structures, regardless of their actual physical location or distance from one another.

My point here is not that territory or scale have been superceded or rendered obsolete, but rather that a notion of scaled-up powers is too blunt an instrument to grasp the shifting geographies of authority and leverage involved. Its use has been overextended, often in inappropriate ways.

A more appropriate use of the notion of territory is to be found in Elden's (2009) attempt to work through why territory matters in an age when boundaries have not only become porous, but state territorial sovereignty itself is increasingly under threat. Territory, or more specifically, the connection between the state and its territory, is for him one of the key sites of struggle in the current geopolitical moment. In line with Brenner, territory is not seen as a static backdrop with fixed coordinates, but as an arena through which particular geographies of fear, threat and division are played out. Elden's prime concern is with territorial integrity: the spatial extent of a state's sovereignty; that is, its effective political control over a given territory. Such integrity, he argues, has been fractured, as more or less failed states have had their sovereignty undermined by the international community in the name of security and the 'war on terror'. Yet, at the same time, that very same community has worked hard to defend territorial integrity in the interest of preserving stability and the right of states to exercise power legitimately within their borders. On the one hand, the sovereignty of states has been drawn into question when they are deemed a threat to the vital interests of others, yet, on the other hand, the spatial extent of their powers has been defended and their borders deemed inviolable.

This, clearly, is a landscape of power in tension; one in which territory as a 'container' acts both to depict the spatial limits of what a state can do and to represent the site under sovereign challenge. The image is one of territorial political actors, the more dominant of which extend their powers over the territory of others when global danger threatens. There is less need to relax the spatial geometries of power in this context, precisely because it is the power-geometries themselves that are the very subject of challenge. Under the banner of territorial integrity, the sovereignty of bounded states is the site of political struggle and territory itself appears as a source of power for the actors involved. But in assuming the latter, the geometry may have been relaxed a little too far.

As Painter (2008, 2011) has pointed out, territory is not so much a source of power as one of its possible effects; an outcome of the mediated relationships and leveraged co-presence

which draws different groups, decisions makers and institutional actors into the interplay between states in all kinds of powerful and not so powerful ways. When Elden speaks about events in New York and Washington DC playing out in Afghanistan in an explicitly territorial manner (2009, xxviii), he is effectively describing how US rule is made present in a direct sense by embedded political and military agencies and mediated through institutional domination. But such topological-style insights are not followed through or exploited for what they tell us about how the political demands of 'distant powers' are established at a distance through a mix of distanced and proximate actions. Sovereignty may require the performance of clearly bounded territories, but that does not mean that such territories enclose all the political relationships which produce them or simply extend themselves to bridge the gap between 'here and there'.

To be fair, both Elden and Brenner are aware of power's spatial ambiguities and they practice a spatial sensibility that is not always present in governance or geopolitical debates. Both, in their own way, push up against the *limits* of conventional geometric thinking, yet curiously neither actually seems to see beyond it. The place-based account of disaggregated authority outlined by Elden, for instance, is one familiar to accounts which recognise that a new geography of power is in the making, yet it remains trapped by the territorial distributions of power.

Interestingly, Saskia Sassen's (2006) *Territory, Authority, Rights: From Medieval to Global Assemblages* also fits under this rubric, despite her grasp of the fact that there are new spatial and temporal dynamics of power in play. For her, the mix of spaces and times that inhabit the national setting define a new, overlapping geography of power within which different actors jostle, co-exist and interrupt one another to gain advantage. As she sees it, the disembedding of state functions and the growing authority of non-state actors in the public realm that Brenner also describes opens up spaces within the formally exclusive territory of nation states where global firms are now subject to extraterritorial forms of authority. Parts of global cities like New York and London, for instance, predominantly the

corporate finance sectors, are seen to be partially detached from the geographically circumscribed authority of the state. This, however, is not a geography where some parts of national territory hover or float above it; rather such economic spaces remain firmly embedded in national territories, yet are subject to wider geographical authorities when it comes down to regulation and control. On this understanding, states are both confronted by and are part of a new geography of power that does not have territorial exclusivity as its defining characteristic.

Such a view, though, requires that we suspend belief in the assumption that state power and authority is extensive with the borders of the nation, as well as capable of uncomplicated reach. The detachment of authority from territory also brings into question the idea that borders are always at the edges of any given territory. For Sassen, this is clearly not the case; rather borders are not so much redrawn as re-embedded within national geography (see also Sassen, 2000). Much of this thinking chimes with the work of Anssi Paasi (2003, 2009) who has consistently argued that borders 'should not be seen solely as phenomena located at the 'edges' of territories but rather 'all over' territories, in innumerable societal practices and discourses' (2009,215). The disruption to a fixed geometry that such insights suggest, however, does not lead Sassen to problematize territory as a source of power. For her, territorial or extraterritorial authority may be 'lifted out' and 're-embedded', but such practises seem to occur solely within national settings, not between them or through the 'work' of networks, as Bruno Latour (1987, 1999, 2005) and others would no doubt insist.

## **Networks and Topology**

True, the mix of spaces and times that, for Sassen, characterize a new overlapping geography of power does speak more to a networked version of power relations than one focused on territory, and she does recognise that supranational networks, especially digital networks, have the ability to destabilize existing hierarchies of scale. But, that said, her overriding concern is with the new types of territory that they may bring about, not with the potential transformation of power relationships or their mediation through people and things

across tracts of space and time. For an understanding of the latter, much of the groundwork has been laid over a number of years by actor-network theory, principally the contributions of Latour (1987, 1999a, 1999b, 2005) and Michel Callon (1986, 1992, 1998), but also by John Law (1986, 1999) with Callon (2004), Kevin Hetherington (1997, 2000) and Annemarie Mol (1994, 2001).

Actor network theory is a broad church these days, itself multiple, but it retains a focus upon both the actors and the circulating entities which enable them to act; that is, upon the mediated forms of interaction which effectively bridge, broker and connect people and things together in some provisionally stable arrangement. The 'power to' hold networks together for a given outcome is thus what enables something like authority, and the conventions upon which it rests, to be extended and reproduced through space and time. Authority, as such, is acted out through the relationships held together by the legitimating conventions which mediate it, be they legal templates, consensual devices or objects of ritual and custom. Significantly, it is through such stable mediating entities that authority may be recognized or conceded by others in any given context. Object integrity, the way networks hold certain things together, is therefore considered more important in this landscape than either territorial or scalar integrity. Actors, it would appear, connect more or less directly with others elsewhere without the need to 'jump' scale or 'move up and down' from the local to the global.

If this is some way from a landscape of scaled-up powers, it is also far removed from an unmarked landscape. In *Reassembling the Social* (2005), Latour is at pains to show how, if you stretch any given interaction far enough, it becomes an actor-network, with a mix of spaces and times entering into the equation of what enables actors to act out and 'fix' an overall orientation which, to all concerned, appears to be indispensable and irreversible. What happens elsewhere, in far-off places, and what is drawn from the past to make the present possible, are all part of the topological equation, where presence does not have to

be local, nor part of the same moment or time period, to be a link in a newly-formed networked arrangement.

Actually, I say topological equation, but that needs some glossing. The key to the success of this kind of arrangement, it would seem, is the ability to 'hook up' others to the process of circulation and so progressively extend the network through their successive enrolment.

Latour draws a distinction between mediators and intermediaries, where the former are an active force transforming and translating what is not connected into some form of association, whilst the latter appear to work towards stabilizing the network. Both operate through metrologies of infinite variety to hold a mobile world constant (see O'Connell, 1993), when much of what is 'out there' is absent or far away from those seeking to order it. Thus the more durable the connections, the more successive the enrolments, and the more stretched the interactions, the greater, we are told, are the powers of association across the extended networks. But if this is so, what makes this arrangement especially topological?

In this flattened landscape, the things that circulate across ever greater distances can be tracked, associations can be traced, and connections mapped in a conventional cartographic manner. There is a familiar topography to all this movement and extension that would not be out of place in any conventional mapping of flat surfaces characterized by measured distances and well defined proximities. The powers of association may be conceived as the result of 'stretched' interaction, but they can just as easily be understood and depicted as a fixed geometry of lines and connections extended horizontally from site to site across a flat landscape. Topographic landscapes, however, cannot simply be folded into something approaching a topological sensibility, and networked connections are not especially topological when traced and tracked. The crumpled handkerchief analogy, despite its characteristic flat surface, works better for Latour here, in so far as it hints that the length and breadth of connections matter less than the *way* in which things are connected.

When the emphasis switches to the substance of the connections, not the fact of them or their extension, then it becomes possible to think about networked relationships as mutable

and shifting in line with the ability of actors to make themselves more or less present in the 'here and now'. Mediation is not something that merely traverses the distance between 'here and there' or which links actors directly to other places and times; to my mind, it also enables those physically distant in space and time to be, somewhat paradoxically, both absent and present in terms of their authority and influence. The use of real-time technologies to create a simultaneous presence in a diversity of settings is, for instance, just one way in which relations of presence and absence may be reconfigured so that the gap between 'here and there' is bridged relationally, and distance itself is no longer understood simply as a metric. Recent work by those pushing beyond actor-network theory (Hetherington, 1997; Hetherington and Law, 2000; Callon and Law 2004; Law 1999; Law and Mol, 2001) has alighted upon the basic fact that presence and absence need not be considered as opposed to one another. The landscapes sketched by John Law and Annemarie Mol, for instance, offer just such a topological interpretation.

For Law and Mol, object integrity remains a key concern of their understanding of network topologies, so that for something like authority to be performed in different places it has to be held together by a particular web of relationships. Yet they are also aware that such constancy does not mean that authority or any other object for that matter is the same everywhere; rather objects may retain their form through shifting sets of relationships in a manner akin to something that changes, yet remains the same (see Gilroy, 2004). Changes may be gradual or they may be abrupt, in a way that may involve powers of disassociation as much as association (see also Hinchcliffe, 2000). Drawing upon a range of spatial metaphors - for example, fluidity to emphasize a perpetual trickle of gradual changes or fire to convey flickering, discontinuous movements - they sketch a number of possible ways in which networks can be held together despite objects changing in both shape and character (Law and Mol, 2001; see also Mol and Law, 1994). Such movements cannot be mapped in simple topographic fashion and nor do they assume the perceived rigidities of geometric shapes that take their cue from the clear cut co-ordinates of Euclidian space.

If all this sounds rather colourful and complex, baroque even, that is precisely the intention (see Law and Mol, 2002). The heterogeneity out there is real enough and equally elusive to our grasp. Indeed, the use of spatial metaphors to capture forms of movement that do not quite chime with our existing vocabularies was the entry point into this paper. It is, however, one thing to multiply spatial metaphors, or rather those of mobility and movement, like fire and water, to grasp the topology of networks and quite another to continually reinvent what topologies are. Rubber sheeting and, as it happens, handkerchiefs may not be judged serious attempts to grapple with the messiness of non-Euclidian space, but they do return us to a vocabulary of twists and folds, respectively, that has its roots in mathematical topology. There are, of course, inherent difficulties in borrowing a language from one discipline area and imposing it on another, but space and spatiality are a shared concern of certain branches of mathematics and geography, and knowing that measured distances have little meaning in topology should, I would have thought, provoke some response in a discipline that has space and place at its core.

Certainly, for Law and Mol, the flattened landscapes that Latour describes are complicated by the mutability of what circulates through networks, but that is not a license to redescribe such spatial shifts as another type of social topology. If Elden, Brenner and Sassen all push up against the limits of conventional geometric thinking in their efforts to account for a shifting landscape of power and authority, Mol and Law seem to transcend it with such gusto that they are in danger of losing sight of what is customary to topological approaches; namely that social topology focuses on the *intensive* relationships which create the distances between things, on the social proximities established over physical distances and the social distances created through physical proximity. As such, it disrupts our sense of what is near and what is far by loosening defined times and distances.

In more prosaic terms, the 'lifting out' and 're-embedding' of aspects of social life, noted earlier, which involves mediated interaction with those physically absent, is one kind of topological relation, as is the spacing and timing of near instantaneous forms of

communication which take place between people who are present in time only. In such mediated exchanges, as I see it, the landscapes are not flattened by what circulates across them or by the lines of connection drawn, but are simply *composed* by the proximate and distanced relationships involved (see Rajchman, 2000). On this understanding, the so-called far-reaching powers of transnational corporations or actors like the state and global social movements are often best understood less as something extended across borders and networks and rather more as an arrangement which enables distant actors to make their presence felt, more or less directly, by dissolving, not traversing the gap between 'here and there'. Power-topologies then, are likely to come into play when the reach of such actors jolts our understanding of what is near and what is far through, say, the practises of arms-length manipulation or the mediated leverage of authority and influence. Such powers are not so much located in space, as inseparable from its composition.

## **Power-Topologies**

Earlier, I suggested that thinking about power's shifting geographies in topological terms merely brings us into line with many of the routine exchanges practised by over-stretched NGOs and campaigning groups, dispersed government authorities and sprawling corporations. Topology, in that respect, is at once both familiar and unfamiliar to our understanding. Whilst it is not necessary to endorse over-simplistic views of the 'world getting smaller', topology does speak to a world in which space-shrinking technologies, for example, give us a heightened sense of immediacy about elsewhere, yet, significantly it is not reducible to them (see Adams, 1998). What is key, as I have stressed all along, are the intensive spatial relationships involved: the mediated exercises of power that account for why the presence of a close and powerful body cannot be assumed to simply deliver authority and control or why a distant authority has the dexterity to manipulate the outcomes of a dispersed set of interests. On this account, spatiality itself is imbued with power; proximity, distance and reach are inseparable from the practices of power which define them (see Allen, 2003).

A topological appreciation of the workings of power, in that sense, is not so much about which actors have become more or less dispersed, more or less networked, as it is about how they make their leverage and presence felt through certain practices of proximity and reach. Neither proximity nor reach are givens; they are part and parcel of what it takes for the likes of NGOs or campaigning groups to mobilize 'publics' at a distance (see Barnett, 2008) or for the state to reach into our lives, to make its presence felt, in a pervasive way (see Painter, 2006). As such, when the focus turns to how power relationships compose the distances enacted or place certain possibilities within reach, we are, I would argue, no longer in a landscape where the lines of control can simply be mapped by extension or the connections understood topographically.

Such a focus, however, can sit rather awkwardly alongside the more customary power-geometries which shape our lives (see Massey, 1993, 2005, 2007). The geometry itself supposes a certain kind of spatialized power, one characterized by located and extended capabilities, the effects of which seem to be more or less 'read off' from the different positions that institutions, authorities, and social groups occupy within a wider set of relationships and connections. As a spatial vocabulary of power, such geometric insights crucially draw attention to the latent or potential leverage of actors in a fluid landscape, but it stops short of enabling us to grasp how power is *practised* spatially to gain advantage in today's more intensively reconfigured landscapes.

### **Powers of reach**

Power-topologies, at the risk of over-stating the point, come into play when the reach of actors enables them to make their presence felt in more or less powerful ways that transcend a landscape of fixed distances and well-defined proximities. The stress upon the practises of power, the manner of which it is exercised, is intentional, for two related reasons.

In the first place, a concern with how power is exercised directs attention to the actual *workings* of power, not what different social groups or institutions 'could do' given how well

positioned or not they are to control what goes on in the landscape around them. Resources and decision-making abilities may be concentrated in certain locations and places, in the HQ of multinational corporations or at the seat of government, but that does not mean to say that power is centralized. How actors use the resources and abilities at their disposal is, arguably, what matters most when power is understood as inherently spatial and subject to the contingences of events and relationships that may lie outside the immediate 'here and now'. The mediated exercises of power which allow spatial relationships to be twisted in such a way that, say, government authority can be made proximate, even though the officials themselves are distant in both space and time, or domination may be practised in real-time, despite the physical distances that separate the parties involved, cannot be grasped simply by a summation of all the capabilities in play. With hindsight, it is always easier to chart the powerful manoeuvres that led to a particular outcome, but it is the actual workings of power, how different actors act upon and respond to the contingency of what confronts them, which best sums up the practised nature of power and its intensive reach.

A second reason for stressing the importance of how power is practised, over and above the relative positions occupied by the powerful and the powerless, rests upon the fact that power is brought to bear in more ways than one and space and spatiality, again, make a difference to the way that works itself out. Leverage is not only about domination and authority; it is also, as noted, about the arms-length manipulation practised by both public and private agencies, the indirect reward-based inducements that appear too great not to want, the hit-or-miss qualities of seduction where the possibility of rejection and indifference are central to its exercise, and more. These *quieter* registers of power are often overlooked when the spatial geometry set out only admits two locations: the dominant and the subordinate positions of the powerful and the powerless, respectively. Arguably, today, it is precisely such muted registers that are increasingly key to the mediated powers of reach practised by institutions and social groups alike to make their presence felt.

If we turn back to the shifting geography of state power outlined by Brenner, such mediated powers of reach offer an alternative interpretation of the institutional complexity outlined. In a topological 'take' on the reworking of state spatialities, what comes to the fore is less the extension of power 'upwards', 'downwards' or 'sideways' and rather more of an interplay between all the different institutional interests and authorities involved where agendas are mediated for specific political ends through a mix of distanced and proximate actors. This is not to argue that the machinery of government has somehow flattened out or that decision-making abilities and resources have simply seeped away from the seat of government, but rather that much of the way that power is made to work for the centre is through authorities *reaching into* the politics of regions and localities in an attempt to steer and constrain agendas: some of which operates in more direct fashion by drawing within close reach those that are able to broker and influence decisions, whilst other forms of mediated interaction reach out beyond the region or locality to shape events within (see Allen and Cochrane, 2011).

The circulation of targets and priorities by central government, matched by funding arrangements which can work to induce or manipulate possibilities, is a form of authority 'detached' from the centre, yet 're-embedded' in sub-national institutions as a means to secure outcomes. In part, the effectiveness of such an arrangement is dependent upon the ability of central government agencies to draw political actors within close reach, to broker negotiations directly, rather than from afar or across a scalar divide that places the 'centre' of political authority above everyone else. Yet, in opening up that authority to negotiation in a more direct fashion, multiple bodies, from state-sponsored agencies and private trusts to local administrative units and partnerships, have the possibility to fold in their political demands by making their presence felt through more distanced modes of interaction and exchange. In such interplays, centrally imposed targets may be manipulated and inducements renegotiated through more or less direct interaction, yet the engagements themselves may lack any form of physical proximity.

Equally, in this more complex institutional geography of authority, what can be drawn within the reach of the state's authority can also be placed beyond it; that is, placed 'out of reach'. Central government agencies may distance themselves from the need to take particular decisions or meet particular political demands by displacing them, pushing them further away by lifting out and re-embedding policy pressures within a different jurisdictional framework. States are not simply confronted by supra-national institutions, they can also use them and the growing range of private authorities in the international arena to fold out political demands. The sense in which certain forms of political arbitration or financial regulation may be subjected to more complex forms of mediation, 'lengthening' the exchanges involved, is a form of relational distance every bit as much as when distances are collapsed by the compression of space by time (see Harvey, 2006).

The different, multiple sites of public and private authority that preoccupy Brenner and others act upon and respond to the contingency of what confronts them, but they do so increasingly through spatial and temporal arrangements that enable them to open up spaces for political engagement that a centred or radically dispersed notion of government may fail to register. When the 'reach of government' is understood as intensive, that does not mean to say that there are no extended political arrangements in the form of devolved or decentralized authority, only that the former works in ways that are neither mappable, nor unambiguous in terms of its spatial reach. Intensive authority is relational not measurable in respect to its distribution; its reach can be more or less stretched or condensed depending upon the political ends sought. Together, the extensive and intensive reach of government goes some way to account for the more tangled, interwoven geography of state power that has taken shape. Technologies of communication which make real-time connections possible, along with the circulation of policy documents, officials and meetings, have both functioned to 'hook up' regional and local authorities to central agendas. At the same time, such spatial twists and turns provide no guarantee that the authority of the centre always prevails. Notwithstanding the concentration of decision-making abilities involved, the mediated

workings of power suggest new lines of authority, negotiation and engagement (see Allen and Cochrane, 2007).

Power-topologies, as a concept, is an attempt to come to grips with such cross-cutting arrangements of power; one which draws attention to the diversity of registers in which power is practised by institutions and actors alike to make their presence felt, as emphasized, through relations of proximity and reach. As such, the mutable geometry involved is less concerned with the shape and size of an actor's capabilities, or their inscribed position, and more interested in what works, say, to hold authority in place despite being stretched globally or the kind of relationships that enable domination to be exercised close up at a distance, and how, for example, some campaigning groups are able to exert an influence and reach way beyond their means and resources.

### **Powers of connection**

In much the same way that the relationship between central, regional and local government has taken particular twists and turns as an unaccustomed geography of power is fashioned, social movements too have made their presence felt in ways hitherto less well understood. The growth of social movements around all manner of pressing issues – environmental, feminist, human rights, labour and consumer rights, among others – and their ability to mobilize across borders to conduct transnational campaigns through extensive activist networks is well documented (Della Porta and Tarrow, 2005; Diani and McAdam, 2003; Castree et al, 2008; Routledge, 2003, 2008; Ruggiero and Montagna, 2008). Much of the attention within geography has been keen to show how place-based resources and identities have been used to forge new connections between disparate actors to exert leverage and influence at a distance (Castree et al, 2008; Miller, 2000; Nicholls, 2009; Routledge, 2003). Both territory and networks have a part to play in the ability of campaigning groups to span the globe from a local base or, in the vernacular of scale, to 'jump' from the local to the global and back again (McDonald, 2006; Routledge, 2008). As with the 'reach of

government', however, such extensive connections offer only a partial insight into how transnational activists have been able to exert an influence often way beyond their means.

The spatial geometry of their extended capabilities usefully tells us how such groups are placed in relation to wider drivers of political change, but such potentiality in and of itself fails to capture quite how NGOs and social movement activists have been able to make 'publics' *present* across a range of 'global' social justice issues. Or how, indeed, governments and corporations under pressure from the demands of networked social movements are often able to distance themselves from such claims by placing them 'out of reach'.

When understood topologically, the powers of connection involved (as well as those of disconnection) draw attention to how injustices are acted out through relationships which more or less *directly* connect with others elsewhere. The ability of social movement activists to link the actions of governments or corporations directly to the abuse of poor communities scattered across the globe, for instance, or to issues faced collectively such as climate change, ecological disasters, food risks and sweatshop exploitation is, in practice, a topological tactic. The stress upon practice is significant in this case, because the connections between citizens and environmental tragedy or between consumers and corporate exploitation on the far side of the globe have to be made; they are not given and nor can they be assumed simply to stick by virtue of the magnitude of resources mobilized or the extent of solidarity formed between activists.

In a number of consumer campaigns for instance, activists such as those in the Amsterdam – based Clean Clothes Campaign movement have been able to draw within the close reach of western consumers injustices such as sweatshop exploitation in Asia and Africa by fixing directly upon company logos (in the case of sweatshop exploitation, Nike, Gap, Adidas, Puma and Reebok have all figured, as well as big retailers like Primark, Asda and Tesco) and linking the actions of branded retailers directly to abuse overseas (see, for example, Hartwick, 2000). In doing so, they were able to establish an immediate connection between exploitation 'over there' and corporate decisions 'back home' in Europe and the USA. More

pointedly, NGOs, like Oxfam and Christian Aid, and campaigning groups were able effectively to erase from view the majority of global supply chain connections that separate factory workers from consumers; that is, the plethora of buyers and suppliers, trading companies and sourcing agents, as well as the subcontractors and subassembly firms involved (see Hale and Wills, 2005). In other words, they cut out the very agencies and ties which comprise much of the global market machinery that frequently passes for economic chains of interdependence. The power of connection, in this instance, therefore, derives from the ability of activists to once again dissolve, not traverse, the gap between 'near' and 'far' by lifting out exploitation and re-embedding it among those affluent consumers who benefit from it most (see Sluiter, 2009, also Allen, 2009).

Equally, by framing the issue of sweatshop exploitation as one that involves us all, NGOs and campaigning groups were able to use the fact of 'connection' to oblige consumers to take responsibility for exploitative events elsewhere. By virtue of being part of an economic system which reproduces exploitation, western consumers were made to feel responsible – but not to blame – for the harm and injustice meted out in their name on factory floors distant in both space and time (see Young, 2003, 2007). The success of this mediated exercise of power, whereby NGOs enrolled consumers to confront retail corporations directly with the consequences of their (indirect) actions, has however less to do with their extended capabilities or resources and rather more to do with their skill at persuading and manipulating consumers as a distance (see Johns and Vural, 2000; Traub-Werner and Cravey, 2002; Sluiter, 2009). Such muted registers of power serve to enrol consumers into a form of collective action around issues that they may hitherto have remained indifferent to or untouched by (see Malpass et al, 2007, for parallels in relation to the politics of fair-trade urbanism).

The ability of campaigning groups to fold in events directly from elsewhere, to draw distant others within close reach, is however only one side of the topological equation. What can be drawn closer through distanced ties can also be placed beyond reach by those targeted

by transnational activists. The global subcontracting arrangements that separate the retail corporations from the factory sweatshops are real enough in their complexity and often serve as a means of outsourcing responsibilities whereby moral or legal liabilities are offset or contracted out. The demand to care for distant others may, in that sense, be displaced by the ability of corporations to distance themselves from abuses elsewhere. In a topological world, the kind of connections which underpin economic interdependence can be stretched just as easily as they can be compressed or erased when the retailers themselves neither actually own factories overseas, nor hire, fire or threaten workers on the factory floor.

At most, there is an *interplay* of forces involved, with both campaign groups and corporations, as well as governments, responding to the actions of the other, adjusting their spatial tactics in line with the latest demands raised. Corporate business may attempt to dominate much of what happens elsewhere through their ability to close down choices and constrain possibilities, as often appears to be the case with overseas factories and global supply chains, but equally social movement activists invariably seek new ways of pinning down corporate responsibility and enrolling consumers. In sensitive consumer-orientated fields, the requirement, for example, that the retail giants operate corporate codes of conduct and extensively monitor overseas factory outlets can be read equally as an attempt by corporations to push events further away or as a means of drawing them closer by the imposition of such activist demands (contrast Hartman et al, 2003, with Jenkins et al, 2002). The ability of all parties involved to engage in such spatial twists and turns in response to the contingency of what confronts them points largely, I would argue, to the topological manoeuvres that enable them to transcend a landscape of fixed distances and well-defined proximities.

Power-topologies, in this context, have little actually to say about the sheer size or scale of the corporations, nor about whether more resources necessarily equal greater power for the social movements. But there are reasons for not making such pronouncements. Resources, when considered in practical terms, may be misused, wasted or applied to little effect;

situations change, open up in unpredictable ways, and alter the ongoing course of events; what works best in one context may fail in another, or is only partially effective, and so on and so forth (see Allen 2008). The expediency of political action, the practice of manipulating wills at arms length or the mobilization of responsibilities and obligations orchestrated at a distance, for instance, lend themselves to more mutable, cross-cutting arrangements of power that cannot be fully subsumed under the rubric of domination and resistance. More importantly, nor can it be subsumed under a spatial geometry that assumes a world of scalar integrity, measured connections and effortless reach. The spatial metrics no longer, if they ever did, simply add up.

## Conclusion

The purpose of this paper has, in one sense, been quite straightforward: to outline what a topological account of power has to add to our understanding of the geographical workings of power in today's more spatially ambiguous world. In order to show that, I have tried to demonstrate the *limits* of topographical thinking on power, especially in relation to more familiar approaches which take territory or network as their starting point. As I have had cause to stress, it has not been my intention to dismiss territorial or network understandings of power in favour of a topological interpretation. Rather, my line of argument has been that each spatial frame has its place in understanding power's geographies; much depends upon the *questions* asked about power and its institutional relationships. Where I think territorial and many network approaches have often been found wanting, however, is in their enthusiasm to overreach themselves by attempting to account for *too much*; in losing sight of what is and is not an appropriate object of study or in addressing questions that challenge the very geometric assumptions that such approaches, often unwittingly, rest upon.

It is often easier, however, to show what something is not, rather than what it actually is; to show where topology parts company with topography, and why a useful concept like power-geometries can only account for so much in a context where distanced and real-time relationships twist the connections between the powerful and the not so powerful. A large

part of my concern has been to develop a vocabulary that conveys what a topological sensibility to power in its many guises has to offer, but as is often the case when grappling with a borrowed language, the metaphorical use of familiar words like ‘folds’, ‘twists’, ‘stretch’ and ‘reach’ often seems too banal to exact real comprehension. On the other hand, it is precisely their familiarity – used in more unfamiliar context – that lends itself to the apprehension of novel reconfigurations and enables us to make sense of them. Leibniz’s ‘folds’ and Leach’s ‘rubber sheeting’ are hopefully just that, as is ‘reach’ when it is understood as spatially intensive as well as, more commonly, extensive.

Why such potential jolts to our understanding, which may after all simply help us grasp where we have been all along, matter is, of course, a separate issue. I have pointed to the quieter registers of power that are often overlooked when the spatial geometry seems to only admit domination and subordination as a kind of zero-sum geography. It seems to me that such forms of muted leverage are enabled by the topological shifts that mark the exercise of power in today’s institutional landscapes. But there is more at stake than that, in so far as the mediated powers of reach practised by both institutions and social movements also changes *what* can be demanded politically and *how* it may be brokered, contested and countered when presence and proximity are no longer simply a question of physical distance. The notion of far-reaching powers interestingly takes on a new meaning in such contexts, but that after all is precisely the kind of jolt that the topological twists in our geographies is meant to convey.

## References

- Adams, P. [1998] Network topologies and virtual place, *Annals of the Association of American Geographers*, 88 (1), 88-106.
- Agnew, J.A. (1994) The territorial trap: The geographical assumptions of international relations theory, *Review of International Political Economy*, 1, 53-80.
- Agnew, J. A. (1999) Mapping political power beyond state boundaries, *Millennium*, 28, 499-521.
- Agnew, J. A. (2005) Sovereignty regimes: Territoriality and state authority in contemporary world politics, *Annals of the Association of American Geographers*, 95(2), 437-461.
- Allen, J. (2008) Claiming connections: a distant world of sweatshops?, in Robinson, J., Rose, G. and Barnett, C., eds, *Geographies of Globalization*. Los Angeles, London, New Dehli, Singapore: Sage Publications.
- Allen, J. (2003) *Lost Geographies of Power*. Oxford: Blackwell Publishing.
- Allen, J. (2008), Pragmatism and power, or the power to make a difference in a radically contingent world, *Geoforum*, 39 [4], 1613-1624.
- Allen, J. and Cochrane, A. (2007), Beyond the territorial fix: Regional assemblages, politics and power, *Regional Studies*, 41 [9], 1161-1175.
- Allen, J. And Cochrane, A. (2011) Assemblages of state power: topological shifts in the organization of government and politics, *Antipode*, 43 (1)
- Amin, A. (2004) Regions unbound: Towards a new politics of place, *Geografiska Annaler* 86B, 33-44.
- Amin, A. (2007) Rethinking the urban social, *City*, 11[1], 100-114.

- Amin, A; and Thrift, N. (2002), *Cities: Reimagining the Urban*. Cambridge: Polity Press.
- Barnett, C. (2008), Convening publics: The parasitical spaces of public action, in Cox, K. R., Low, M. and Robinson, J. (eds) *The Handbook of Political Geography*. Los Angeles, London, New Dehli, Singapore: Sage Publications.
- Bickerstaff, K. and Simmons, P. (2009) Absencing/presencing risk: rethinking proximity and the experience of living with major technological hazards, *Geoforum*, 40, 864-872.
- Brenner, N. (2001) The limits of scale: methodological reflections on scalar stucturation, *Progress in Human Geography*, 25(4), 591-614.
- Brenner, N. (2004) *New State Spaces: Urban Governance and the Rescaling of Statehood*. Oxford: Oxford University Press.
- Callon, M. (1986) Some elements of a sociology of translation: domestication of the scallops and the fisherman of St Brieuc Bay, in Law, J. (ed) *Power, Action and Belief: A New Sociology of Knowledge*. London: Routledge and Kegan Paul.
- Callon, M. (1992) Techno-economic networks and irreversibility, in Law, J. (ed) *A Sociology of Monsters*. London: Routledge.
- Callon, M. (1998) ed, *The Laws of the Markets*. Oxford: Blackwell.
- Callon, M. and Law, J. (2004) Absence-presence, circulation, and encountering in complex space, *Environment and Planning D: Society and Space*, 22, 3-11.
- Castree, N., Featherstone, D. and Herod, A. (2008) Contrapuntal geographies: The politics of organizing across sociospatial difference, in Cox, K. R., Low, M. and Robinson, J. (eds) *The Handbook of Political Geography*. Los Angeles, London, New Dehli, Singapore: Sage Publications.
- Della Porta, D. and Tarrow, S. (2005) *Transnational Protest and Global Activism*. Lanham: Rowman and Littlefield Publishers Inc.

- Doel, M. (1999) *Poststructuralist Geographies: The Diabolical Art of Spatial Science*. Edinburgh: Edinburgh University Press.
- Deleuze, G. (1993) *The Fold: Leibniz and the Baroque*. Minneapolis: University of Minnesota Press.
- Deleuze, G. (1995) *Negotiations: 1972 – 1990*. New York: Columbia University Press.
- Diani, M. and McAdam, D. (2003) *Social Movements and Networks: Relational Approaches to Collective Action*. Oxford: Oxford University Press.
- Elden, S. (2009) *Terror and Territory: The Spatial Extent of Sovereignty*. Minneapolis: The University of Minnesota Press.
- Gilroy, P. (2000) *Against Race: Imagining Political Culture Beyond the Color Line*. Cambridge, Mass: Harvard University Press.
- Gregory, D. (2003b) Defiled Cities, *Singapore Journal of Tropical Geography*, 24(3), 307-326.
- Gregory, D. (2004) *The Colonial Present*. Oxford: Blackwell Publishing
- Hale, R. and Wills, J. (2005) *Threads of Labour: Garment Industry Supply Claims from the Workers Perspective*. Oxford: Blackwell Publishing.
- Hartmann, L. P., Arnold, P. G. and Wokutch, R. E. (2003) *Rising Above Sweatshops: Innovative Approaches to Global Labour Challenges*. Westport CT: Praeger.
- Hartwick, E. R. (2000) 'Towards a geographical politics of consumption', *Environment and Planning A*, 32, 1177-1192.
- Harvey, D. (2006) *Spaces of Global Capitalism: Towards a Theory of Uneven Geographical Development*. London and New York: Verso.

- Hetherington, K. (1997) Museum topology and the will to connect, *Journal of Material Culture* 2(2), 199-218.
- Hetherington, K. (1997b) In place of geometry: the materiality of place, in Hetherington, K. and Munro, R. (eds) *Ideas of Difference: Social Spaces and the Labour of Division*. Oxford: Blackwell Publishers.
- Hetherington, K. and Law, J. (2000) After networks, *Environment and Planning D: Society and Space*, 18, 127 – 132.
- Hinchliffe, S. (2000) Entangled humans: specifying powers and their spatialities, in Sharp, J. P., Routledge, P., Philo, P. and Paddison, R., eds, *Entanglements of Power: Geographies of Domination/Resistance*. London and New York: Routledge.
- Jenkins, R., Pearson, R. and Seyfang, G. (2002) *Corporate Responsibility and Labour Rights: Codes of Conduct in the Global Economy*. London: Earthscan.
- Jones III, J. P., Woodward, K., Marston, S.A. (2007) Situating flatness, *Transactions of the Institute of British Geographers*, 32 [2] 264 – 276.
- Jessop, B. (2005) The political economy of scale and European governance, *Tijdschrift voor Economische en Social Geographie*, 96(2), 225-230.
- Jessop, B. (2008) *State Power*. Cambridge: Polity Press.
- Johns, R. and Vural, L. (2000) Class, geography, and the consumerist turn: UNITE and the Stop Sweatshops Campaign, *Environment and Planning A*, 32, 1193-1213.
- Latham, A. (2002) Retheorizing the scale of globalization: Topologies, actor-networks, and cosmopolitanism, in Herod, A. and Wright, M. W. (eds) *Geographies of Power: Placing Scale*. Oxford: Blackwell Publishing.
- Latour, B. (1987) *Science in Action*. Cambridge, DC: Howard University Press.

- Latour, B. (1999a) *Pandora's Hope: Essay on the Reality of Science Studies*. Cambridge, M.A.: Harvard University Press.
- Latour, B. (1999b) On recalling ANT, in Law, J. and Hassard, J. (eds) *Actor Network Theory and After*. Oxford: Blackwell.
- Latour, B. (2005) *Reassembling the Social*. Oxford: Oxford University Press.
- Law, J. (1986) On the methods of long distance control: vessels, navigation and the Portuguese route to India, in Law, J., ed, *Power, Action, Belief: A New Sociology of Knowledge*, Sociological Review Monograph, 234 – 263.
- Law, J. (1999) After ANT: complexity, naming and topology, in Law, J and Hassard, J. (eds) *Actor Network Theory and After*. Oxford: Blackwell.
- Law, J. and Mol, A. (2001) Situating technoscience: an inquiry into spatialities, *Environmental Planning D: Society and Space*, 19, 609 – 621.
- Leach, E. R. [1961] *Rethinking Anthropology*. London: The Athlone Press.
- Malpass, A., Cloke, P., Barnett, C. and Clarke, N. (2007) Fairtrade urbanism: The politics of place beyond place in the Bristol Fairtrade City Campaign, *International Journal of Urban and Regional Research* 31(3), 633-643.
- Marston, S. A., Jones III, J. P., Woodward, K. (2005) Human geography without scale, *Transactions of the Institute of British Geographers*, 30, 416-432.
- Massey, D. (1993) Power-geometry and a progressive sense of place, in Bird, J., Curtis, B., Putnam, T., Robertson, G. and Tickner, L (eds) *Mapping the Futures: Local Cultures, Global Change*, London: Routledge.
- Massey, D. (2005) *For Space*. London Thousand Oaks and New Dehli: Sage Publications.
- Massey, D. (2007) *World City*. Cambridge: Polity Press.

- McDonald, K. (2006) *Global Movements: Action and Culture*. Oxford: Blackwell.
- Miller, B. (2000) *Geography and Social Movements: Campaigning antinuclear activism in the Boston Area*. Minneapolis: University of Minnesota Press.
- Mol, A. and Law, J. (2001) Regions, networks and fluids: Anaemia and social topology, *Social Studies of Science*, 24, 641-671.
- Murdoch, J. [2006] *Post-Structuralist Geography*. London, Thousand Oaks, New Dehli: Sage Publications.
- Nicholls, W. (2009) Place, networks space: theorising the geographies of social movements, *Transactions of the Institute of British Geographers*, 34, 78-93.
- O'Connell, J. (1993) Metrology: The creation of universality by the circulation of particulars, *Social Studies of Science*, 23, 129-73.
- Paasi, A. (2003) Boundaries in a globalizing world, in Anderson, K., Domosh, M., Pile, S. and Thrift, N., eds, *Handbook of Cultural Geography*. London: Sage Publications.
- Paasi, A. (2009) Bounded spaces in a 'borderless world: border studies, power and the anatomy of territory, *Journal of Power*, 2(2), 213-234.
- Painter, J. (2006) Prosaic geographies of stateness, *Political Geography*, 25(7), 752-774.
- Painter, J. (2008) Geographies of Space and power, in Cox, K. R., Low, M., and Robinson, J., eds, *The Handbook of Political Geography*. Los Angeles, London, New Dehli, Singapore: Sage Publications.
- Painter, J. (2011), Rethinking territory, *Antipode*, 43 (1)
- Peterson, I. (1988) *The Mathematical Tourist: Snapshots of Modern Mathematics*. New York: W. H. Freeman and Company.

- Rajchman, J. (2000) *The Deleuze Connections*. Cambridge, Mass. and London: The MIT Press.
- Routledge, P. (2003) Convergence space: process geographies of grassroots globalization networks, *Transactions of the Institute of British Geographers*, 28 [3], 333-349.
- Routledge, P. (2008), Transnational political movements, in Cox, K. R., Low, M., and Robinson, J., eds, *The Handbook of Political Geography*. Los Angeles, London, New Dehli, Singapore: Sage Publications.
- Ruggiero, V. and Montagna, N. (2008) *Social Movements: A Reader*. London and New York: Routledge.
- Serres, M. with Latour, B. [1995] *Conversations on Science, Culture and Time*. Ann Arbor: The University of Michigan Press.
- Sassen, S. (2000) Territory and territoriality in the global economy, *International Sociology*, 15 (2), 372-393.
- Sassen, S. (2006) *Territory, Authority, Rights: From Medieval to Global Assemblages*. Princeton and Oxford: Princeton University Press.
- Sklar, L. (1974) *Space, Time and Spacetime*. Berkeley, Los Angeles and London: University of California Press.
- Sluiter, L. (2009) *Clean Clothes: A global Movement to End Sweatshops*. London: Pluto Press.
- Swyngedouw, E. (2000) Authoritarian governance, power and the politics of rescaling, *Environment and Planning D: Society and Space*, 63-76.
- Traub-Werner, M. and Cravey, A. J. (2002) Spatiality, sweatshops and solidarity in Guatemala, *Social and Cultural Geography*, 3 [4], 383-401.

Young, I. M. (2003) From guilt to solidarity: Sweatshops and political responsibility, *Dissent*, Spring: 39-44.

Young, I. M. (2007) *Global Challenges: War, Self-Determination and Responsibility for Justice*. Cambridge: Polity Press.