

## BOX 4.1

The relationship between network and local space can be orchestrated in three main ways:

- The network simply enrolls the local and fully integrates it into existing relationships, leaving no room for localized discretion. Questions inevitably arise about the long-term effectiveness of such dominance, although, as Foucault has shown, such relations undoubtedly exist.
- The network becomes immersed in the local and loses its shape and reach. Again, there seems little long-term future for this network as the localities can too easily go their own way.
- A genuine interaction between network and local context takes place so that both are changed. This seems most likely to be the norm. However, it tells us little about the terms of enrolment as many variations on this arrangement might come into being.

In general terms, the varied interactions between networks and space illustrate the 'agonistic' relationship that tends to pertain between network space and geographical space. In particular, elements of the locale are selectively encompassed within the network and elements in the network are selectively grounded in the locale. Thus, Bowker and Star (2000: 307) conclude: 'things and people are always multiple, although that multiplicity may be obfuscated by standardised inscriptions'.<sup>2</sup>

We can therefore see that one form of multiplicity stems from the varied outcomes that ensue as networks move into new spatial locations and as agreements are reached between network builders and enrolled entities. The means by which the movement is made will be some combination of the enrolment procedures used by the network (often determined by the network centre) and the specific exigencies of the locale to be enrolled (the ways in which procedures of enrolment are tailored to distinctive features of the locality). As Law puts it:

we need to hold onto the idea that the agent – the 'actor' of the actor-network' – is an agent, a centre, a planner, a designer, only to the extent that matters are also decentred, unplanned, underdesigned. To put it more strongly, we need to recognise that to make a centre is to be made by a noncentre, a distribution of the conditions of possibility that is both present and not present. (2002: 136)

However, there is another source of multiplicity that emerges from the interac-

spatial identities. In order to generate singularities, the networks have to somehow 'punctualize' spatial identity – that is, they need to cut 'a specific figure in the here and now' (Munro, 2004: 294). In Munro's view, this process of 'punctualization' has two main aspects: first, there is a 'positioning effect', so that the spatial entity is stabilized in the networks in a way that highlights or foregrounds particular features and characteristics. Second, there is a 'timing effect', in which the foregrounded identity displaces other potential identities in the 'here and now'. If these two effects are successfully brought together, a singular identity is generated. And if this identity can be stabilized within the networks, it may become enduring, perhaps even dominant. As often as not, however, the interaction between networks gives rise to a multiplicity, as Mol and Law emphasize when they say 'various "orderings" of similar objects, topics, fields, do not always reinforce the same simplicities or impose the same silences. Instead they may work – and relate – in different ways' (2002: 7). Thus, the two aspects of 'punctualization' mentioned by Munro may fail to achieve coherence: the networks cannot 'position' the space for any length of time; thus, alternative positionings co-exist and compete.

These observations indicate that we should not assume that spaces hold only singular identities – for instance, 'central', 'marginal', 'dominant', 'resistant' – rather, they can combine multiple processes, relations, identities, material arrangements and so forth (Hetherington, 1997). Thus, we should aim to develop a relatively sophisticated array of spatial typologies and we should consider how these interact with differing network arrangements. This suggests a need to investigate 'ways of describing the world while keeping it open, ways of paying tribute to complexities, which are always there, somewhere, elsewhere, untamed' (Mol and Law, 2002: 16).

### Tracing a network topology

Of all the actor-network theorists, it is John Law who has put most effort into thinking through the spatial consequences of network relations. Like Latour, Law believes that actor-network theory poses a profound challenge to common-sense, taken-for-granted notions of space (Law, 1999). In Law's view, actor-network theory aims to establish a network ontology in which spatial formations are seen as *constituted* by heterogeneous sets of relations. In outlining this network ontology, Law begins by attacking the most common spatial type – that is, discrete, bounded Euclidian space. As Law and Hetherington put it:

in six-hundred years of surveying, cartography, nation-building and GIS, the idea that there is (a single) geographical space has been naturalised by Euro-Americans. This means that it has been very difficult to imagine space as anything other than some kind

Relationalism, Law argues, runs counter to the notion that there is single, bounded space in which things simply happen and actor-network theory has been developed in order to show the complexity of spatial relationships and the multiplicity of spatial types. In Law's view, actor-network theory shows that space is not itself a *container* but is *contained* (in networks). Thus, space is no longer singular in character but consists of varied space-times, all operating in differential spatial configurations.

Law suggests that we should abandon *topographical* notions of space – in which the space of absolute and fixed coordinates is necessarily dominant – in favour of *topological* conceptions.<sup>3</sup> He sees topology as concerned, in the main, with the way spatial objects are both constituted and displaced by networks; as Mol and Law (1994: 643) say: 'topology doesn't localise objects in terms of a given set of coordinates. Instead, it articulates different rules for localising in a variety of coordinates'. Mol and Law argue that in topological space we can discern differing spatial types to those found in topographical configurations. There are of course regional spaces in which 'space is exclusive. Neat divisions, no overlap. Here or there, each place [...] localised on one side of the boundary' (1994: 647). However, actor-network theory tells us that even in these regional or exclusive spaces, spatial relations are *performed* by networks: 'Space is made. It is a creation. It is a material outcome. Like objects or obligatory points of passage, it is an *effect*' (Law and Hetherington, 1998: 8). Thus, as well as regional spaces, we should expect to find network spaces. These differ sharply from Euclidian spaces because 'in a network, elements retain their spatial integrity by virtue of their position in a set of links or relations. Object integrity, then, is not about a volume within a larger Euclidean volume. It is rather about holding patterns of links stable' (Law, 1999: 6).<sup>4</sup>

The recognition that networks generate their own specific space-time configurations leads inevitably to a network topology, which is seen as an undulating landscape in which the linkages established in networks draw some locations together while at the same time pushing others further apart. This network topology can be discerned in the following comment by Latour.

In a network certain very distant points can find themselves connected, whilst others that were neighbours are far removed from one another. Though each actor is local, it can move from place to place, at least as long as it is able to negotiate equivalences that make one place the same as another. A network can thus be 'quite general' without ever having to pass through a 'universal'. However rarefied and convoluted a network may be it nevertheless remains local and circumscribed, thin and fragile, interspersed by space. (1987: 170–1)

The landscape is 'folded', 'pleated' and 'ruptured' by the spacing and timing

and the way they hang together. Places with a similar set of elements and similar relations between them are close to one another and those with different elements or relations are far apart' (Mol and Law, 1994: 649). Thus, distance is 'a function of the relations between the elements' (1994: 643).

As we have seen, a network topology inevitably disturbs our received ideas about (Euclidean) space. However, having asserted the importance of this new perspective, actor-network theorists now propose that topological complexity cannot be adequately comprehended simply through the prism of the network. In short, it is argued that network space does not exhaust the range of spatial possibilities that might emerge. In part, this concern over the status of network space stems from a concern over the status of the term 'network' itself. In an influential commentary on actor-network theory, Lee and Brown (1994) argue that the network concept has a tendency to imperialistically colonize all domains so that ultimately nothing can stand outside actor-networks (or, for that matter, actor-network *theory*). Lee and Brown suggest that the approach has moved in this all-encompassing direction because it weaves together a Nietzschean concern for 'the will to power' (through the building of networks in the style of Pasteur) with a liberal democratic notion of 'enfranchisement', that is, extending agency to all things (Latour's immutable mobiles). As Lee and Brown note, there is no space outside the network; simply endlessly ramifying network relations which appear to leave no hope of escape to a zone beyond translation and enrolment.

In response to this and similar criticisms – notably from feminist theorists such as Susan Leigh Star (1991) and Donna Haraway (1997), who complain that actor-network theory has tended to focus its attention on the network builders (such as Pasteur) rather than on those systematically excluded from network relations – Mol and Law outline another spatial type which they call 'fluid space'. In their view, fluid space stands in stark contrast to network space. Where, in a network, the relations between actors, entities and objects are clearly defined, in a fluid space there is no such clear definition either in the relations or in the shape of the enrolled elements: 'in a network things that go together depend on one another. If you take one away, the consequences are likely to be disastrous. In a fluid space it isn't like that because there is no "obligatory point of passage"; no place past which everything else has to file; no Panopticon; no centre of translation' (Moll and Law, 1994: 661). Thus, 'in a fluid space it's not possible to determine identities nice and neatly, once and for all'. Instead, all we find in this space are 'viscous combinations' in which 'elements inform each other' in ways that 'continuously alter' (1994: 660). Yet, despite the viscosity, Law and Mol (2000: 6) emphasize: 'fluid spatiality [...] rather than representing breakdown or failure, may also help to strengthen objects'. Fluid relations, although quite distinct from regional and network forms, may therefore represent enduring features of the complex topologies

**BOX 4.2**

Mol and Law (1994) introduce three main spatial types:

- 'Euclidean' or 'topographical' space. This refers to spaces of fixed coordinates, with lines that run across surfaces (rather in the style of maps, with their contours and two-dimensional spatial representations). Mol and Law's criticisms of this spatial type echo Doel's (1999) criticisms of what he calls 'pointillism' (discussed in Chapter 1) – that is, a concern for surface and lines between points leads to only a superficial understanding of spatial relations.
- 'Network' space. This is the space of actor-network theory, especially in discussions of well-orchestrated, tightly knit networks, as in the case of Pasteur (discussed in Chapter 3). Network space is composed from the heterogeneous relations normally assembled within actor-networks. Mol and Law's concern about network space is that it can focus too much attention on tightly structured modes of ordering space.
- 'Fluid' space. This is a new focus for theorists working in the actor-network genre and refers to spatial relations that are constantly 'becoming', constantly shifting, constantly moving. This spatial type fits well with the notion of spaces of multiplicity which is so central to post-structuralist geography.

Mol and Law introduce this idea of 'fluid space' to counter the hegemonic tendencies of network space, the belief that network builders will ultimately triumph in imposing singular identities on multiple participants. Rather, they want to make room for difference and diversity. As Law summarizes it, multiplicity means

more than one and less than many. Fractional natures. Fractional and enacted bodies. The webs in which they are enacted are partially other. Other, as it were in general, but also to each other. And their relations are uncertain. Perhaps sometimes, they fit together neatly. Perhaps they contradict one another. Perhaps they pass each other by without touching, like ships in the night. Perhaps they are included in one another. Perhaps they are added together to produce new natures. Perhaps they are deliberately kept apart because any encounter would be a collision. Or perhaps their relations are a mix of these: complementary, contradictory and mutually inclusive. At any event, in this way of thinking nature/culture/technics are complex in the sense that they are multiply enacted in multiple practices and cannot be known anywhere in particular. (2004: 6)

Such formulations indicate that the actor-network theorists are moving away from a concern simply for the *centring* practices that permit actors to become powerful in networks (in response to the criticism that it thereby focuses

absence/presence, uncertainty and [...] necessary Otherness that comes with the project of centering' (Law, 2002: 136–7). As well as this emphasis on network exclusions, we also see an increasing interest in the spatial effects of contextual relations. It is now recognized that subjects and objects are drawn selectively into and out of discrete networks, sometimes simultaneously, sometimes concurrently. This leads to greater spatial complexity as spaces emerge not from one (centred) network space but from *multiple* spatial forms, all working within *contexts of multiplicity*.

### Geo-philosophies of relationalism

Complexity, multiplicity and topology are now increasingly combined in actor-network theory in order to escape the rather restricted modes of spatial ordering that emerge from studies of Panopticism and other highly prescriptive network forms. The analysis presented in the previous sections suggests that there are varied network types and varied relations between these types and spatial locations. So while we can retain the view that space emerges from within networks, we can now suggest that it does so through some complex interactions between the network and those entities and spaces that lie 'outside' it. In short, the network and its (spatial) environment mutually compose one another, often in varied and unexpected ways.

Thus, network spaces might be placed on a continuum. At one end, we have 'singular' spaces in which formal and standardized sets of relations succeed in marking out clearly demarcated zones where entities and actors are both stabilized and normalized in topographical fashion. These formalized and standardized relations can be generated by singular networks or by the co-ordinated actions of multiple networks 'meeting in' space. At the other end, we have highly fluid spaces in which flux and variation are the norm as actors and entities struggle to impose coherence onto multiple relations. Again, fluidity can be the property of a single network or can arise from the combined effect of multiple network interactions. As we move along the continuum, differing trade-offs between singularity and multiplicity, topography and topology might be observed.

In this section, we delve further into this characterization of network topology. We explore in a little more detail the complex network forms that emerge as we move into topological space. In so doing, we also move beyond Foucaultian/actor-network theory in order to explore the spaces of Gilles Deleuze and Michel Serres. Both these philosophers have exercised some considerable influence over post-structuralist geography (as well as over actor-network theory) and it is worth briefly considering the nature of their influence, especially as it relates to notions of topology and space.<sup>5</sup> However, as we shall see, a brief con-

space. That is, Deleuze and Serres tend to adopt general abstract perspectives on the spatial realm, perspectives that are apparently developed over and above perspectives derived from within specific network formations.

Gilles Deleuze, while a key philosophical influence on actor-network theory, is also a key theorist of the relations between complexity, multiplicity and space. The connections between these three terms are well explained in Manuel Delanda's (2002) exposition on Deleuze's 'philosophy of becoming'. In Delanda's view, multiplicity emerges naturally from Deleuze's fluid and dynamic ontology. Instead of assuming fixed and invariant essences, Deleuze considers 'being' in the world to be based on movement and emergence. As Delanda (2002: 3) puts it, 'Deleuze is not a realist about essences, or any other *transcendent* entity, so in his philosophy something else is needed to explain what gives objects their identity and what preserves their identity through time. Briefly, this something else is *dynamical processes*' (emphasis in original). Deleuze's interest in processes of 'becoming' leads, in turn, to an interest in topology. Delanda describes Deleuze's topological perspective in the following way:

[topology] may be roughly said to concern the properties of geometric figures which remain invariant under bending, stretching or deforming transformations which do not create new points or fuse existing ones. (More exactly, topology involves transformations [...] which convert nearby points into nearby points and which can be reversed or be continuously undone.) Under these transformations many figures which are completely distinct in Euclidean geometry [...] become one and the same figure, since they can be deformed into one another. (2002: 25–6)

In this topological field, the issue that preoccupies Deleuze is 'how to conceive of a form of identity or unity which is not identical to itself' (Patton, 2000: 29). That is, Deleuze wishes to move beyond simple repetition and resemblance in order to study difference and divergence, as he makes clear in the following geographically-inspired quotation.

Maps [...] are superimposed in such a way that each map finds itself modified in the following map, rather than finding its origin in the preceding one: from one map to the next, it is not a matter of searching for an origin, but of evolutionary displacements. Every map is a redistribution of impasses and breakthroughs, of thresholds and enclosures, which necessarily go from bottom to top. There is not only a renewal of directions, but also a difference in nature: the unconscious no longer deals with persons and objects but with *trajectory* and *becoming*: it is no longer an unconscious of commemoration but one of mobilisation, an unconscious whose objects take flight rather than remaining buried in the ground. (Deleuze, quoted in Crang and Thrift, 2000: 21)

These 'evolutionary displacements' stem from the play of differences as movements are made from one stage (of mapping) to the next. Thus, in Deleuze's philosophical world,

outcomes, unprecedented transferences, and jagged edges. These breaks are not simply ungoverned transversal communications within and between assemblages that bring novel forces into play and so also new formations. They are also a function of the way events occur, which is not rule governed, or where the rule does not apply. So, Deleuze stresses connectivity of systems in opposition to what he regards as an illusory autonomy promoted by some writers. (Thrift and Dewsbury, 2000: 418)

In this context, Deleuze insists on the importance of multiplicity as a means of accounting for both invariance and transformation. Multiplicities emerge as singular locations and come together in 'recurrent sequences' (Delanda, 2002: 16).<sup>6</sup> These sequences involve 'active transformations' in a process which 'converts one of the entities into the other' (2002: 18). As Deleuze puts it: 'the actualisation that stabilises and stratifies [...] is an integration: an operation which consists of tracing "a line of general force", linking, aligning and homogenising particular series and making them converge. There is [...] a multiplicity of local and partial integrations, each one entertaining an affinity with certain relations or particular points' (1988: 75).

We can hear in these comments clear echoes of actor-network theory – for instance, in the emphasis upon emergent properties, the attention to sequences ('networks'), transformations ('translation'), and the engagement with an open-ended topological complexity ('generated by networks'). Moreover, both Deleuze and the actor-network theorists see relation and space as co-emergent: as Ansell-Pearson (2002: 24) puts it, space cannot be taken to be an *a priori* reality but must be seen as an 'emergent and exigent feature of social action'. This observation bears upon a key question raised by John Law: 'do networks subsist in and of themselves? Are they, as the actor-network theorists have tended to assume, spatially autonomous?' (2000: 8). Law answers these questions in Deleuzian fashion by claiming that networks cannot be seen as somehow separate from spatial relations, for the relationship between network and space is always reciprocal; the two compose one another in mutually reinforcing ways. Thus, as Doel explains:

It would be better to approach space as a verb rather than a noun. *To space* – that's all. Spacing is an action, an event, and a way of being. There is neither space 'behind' something, functioning as a backcloth, ground or continuous and unlimited expanse (absolute space), nor space 'between' something, as either a passive filling or an active medium of (ex)change (relative, relational, diacritical, and dialectical spaces). There is just spacing (differentials). The 'points' – as things, events, terms, positions, *relata*, etcetera – that are supposedly played out 'upon' and alongside space are illusory. Space is immanent. It has only itself. (2000: 125)

Like actor-network theory, Deleuzian theory discusses how differing sets of relations give rise to differing spaces. For instance, it distinguishes 'linear' relations, which present simple distributions of points, from 'nonlinear' relations,

all but certain specified relations to the outside' and 'more fluid and open-ended assemblages in which new connections and new forms of relation to the outside are always possible, even at the risk of transforming the assemblage into some other type of body' (Patton, 2000: 43). We see here something of a reworking of centred and decentred actor-networks, with the former generating spatial forms of fixed coordinates while the latter give rise to fluid, viscous combinations.

#### BOX 4.3

For Deleuze, space is:

- In the process of 'becoming'. It results from dynamical processes and it is always on some kind of emergent trajectory.
- Subject to transformation. Its reproduction within processes of becoming is based not on simple replication but on alteration and innovation. Entities are folded into one another as new relations come into being. Thus, space takes on new shapes and new identities; it is always emergent.
- Multiple in nature, it is generated in 'recurrent sequences'. These sequences are generated within spatial trajectories that can either create further multiplicities or can result in unities of various kinds.
- Moreover, differing trajectories or lines of force hold differing consequences for territories; they can result in deterritorialization or reterritorialization. Thus, lines of force can work to unify territorial spaces (perhaps using processes of governmentality) or can work to disrupt territorial coherence thereby revealing multiplicities of various kinds.

In their different ways both actor-network theory and Deleuzian theory bring us to spaces of multiplicity: 'On the one hand, multiplicities that are extensive, divisible and molar; unifiable, totalisable, organisable [...] and on the other hand, libidinal, unconscious molecular, intensive multiplicities composed of particles that do not divide without changing in nature, and distances that do not vary without entering another multiplicity' (Deleuze and Guattari, 1987: 33). Multiplicities conceive spatial forms through their generative capacities, and these depend on the emergent properties (or 'affects') that come into being as relations are formed between entities of various kinds. They compose 'a nested set of spaces, with the cascade acting to unfold spaces which are embedded into one

Deleuze (with Guattari) emphasizes that these differing assemblages hold differing relations to territory. Assemblages of fluid and viscous forms tend towards *deterritorialization* – that is, 'lines of flight along which the assemblage breaks down or becomes transformed into something else' (Patton, 2000: 54). This movement generates, however, a counter movement, a *reterritorialization*, an effort to resituate assemblages in a defined space of fixed coordinates (a map, an administrative zone and so forth). The first of these movements highlights the new spatial forms that can emerge either through network modification or the coming together of two networks to generate a new form of 'becoming'. The second refers to those normalizing and governmental networks that Foucault sees working in liberal society to 'fix' (that is, to 'territorialize') the 'conduct of conduct'. As in Foucaultian/actor-network theory, we can discern a 'two-way' movement here as differing relations work to confine or produce spatial multiplicities.

An illustration of how differing assemblages underpin specific territories is supplied by Bonta and Protevi (2004) in a Deleuzian study of the Olancho region in Honduras. The authors suggest that multiple spaces are evident in this territory:

There was no a priori 'Olancho Space' that then got broken down into smaller side-by-side, nested-hexagon spaces; you didn't walk from one space to another as much as move through varied degrees of becoming across the landscape. Coffee farms were being taken over by cattle; beans were taking over forest; forests were taking over ranches; Hurricane Mitch had stripped away cattle pastures, beanfields, coffee, and forest alike. A 'space', then, became the room filled by the workings of a complex system at the extensive, intensive, and virtual registers. If one were 'plugged into the cattle-ranching assemblage, one was to a large extent predetermined and at the very least codetermined by a complex system quite different than that of one's neighbour, who was plugged into the complex system of coffee farming – or of peasant farming, conservation, development, logging, and so forth. One was an 'actor' in that complex system's space – an enactor of its space – wherever one went. Inasmuch as one (and one's cattle or coffee bushes or beans) 'made space', one territorialized one's assemblage somewhere in the landscape. One carved out a territory to provide room 'demanded' by one's assemblage. (2004: 172)

As in actor-network theory, space is here relationally constituted by assemblages that pull certain places into proximity while pushing others into the distance (with distance conceptualized as relations between the aligned elements). And again, as actor-network theory emphasizes, differing spatial forms inhabit the same territory:

Each space is qualitatively different – they are not variants on one of them, but come about through vastly divergent processes. Each has a geohistory that must be engaged on its own terms. Each is territorialized in the landscape by means of human and non-human 'agents' guided by a certain set of instructions, tendencies, trajectories [...] Each complex system deterritorializes forces of the earth and the cosmos and puts them to work

The language is Deleuzian, but we see here clear affinities with Foucaultian/actor-network theory's heterogeneous networks, weaving materials of differing kinds into new spatial formations. These formations are plural and multiple, comprising striated and smooth spaces, prescriptive and fluid relations, territorialized and deterritorialized assemblages. However, Bonta and Protevi's characterization of Olancho also takes us a little closer to more standard geographical concerns, notably the requirement to make some general comments about the nature of territories situated within given spatial contexts. Although they highlight the differential nature of the assemblages in Olancho, Bonta and Protevi also give us a kind of territorial overview of this place, one that highlights how multiple relations co-exist within its boundaries. They provide us with what Michel Serres calls a landscape of 'nearness and rifts' (Serres and Latour, 1995: 60), a scene in which entities are pulled closely together within specific assemblages while other entities, which are proximately situated in Euclidean space, are pushed away into alternative assemblages. In this landscape, our attention is drawn to the 'stopping points, ruptures, deep wells [...] rendings, gaps' that create proximities and rifts between assemblages, networks and entities (Serres and Latour, 1995: 57). Serres suggests that we might view such landscapes in the following way.

If you take a handkerchief and spread it out in order to iron it, you can see certain fixed distances and proximities. If you sketch a circle in one area, you can mark out nearby points and measure far-off distances. Then take the same handkerchief and crumple it, by putting it in your pocket. Two distant points suddenly are close, even superimposed. If further, you tear it in certain places, two points that were close can become very distant. This science of nearness and rifts is called topology, while the science of stable and well-defined distances is called metrical geometry. (Serres and Latour, 1995: 60)

Again, the notion of topology is being used to allude to the stratifications that 'fold' and 'pleat' space (the mountainous range of valleys and peaks). Space, like time, is folded into complex geometries as networks draw points to the surface and push others underground.

#### BOX 4.4

For Serres, space is also:

- Multiple in nature, so that various processes run through and around space, giving rise to undulating landscapes of spatial relations.
- Made up of entities that are bound into relations that can bring the 'far near' and make the 'near far'. Thus, space is wholly relational rather than absolute; any given

- Brought into some kind of unity by the 'relations between relations'. The messengers and communicators that map out the spaces 'in-between' relations can create new proximities and can generate some amount of coherence and stability, thereby giving rise to discernible territorial shape.
- Turbulent and chaotic in nature so that networks can only create temporary permanences (or islands of stability) with the danger that they will dissolve once again into the disordered flow of space-time. In order to prevent such dissolution networks may use either topographical or topological modes of ordering.

While we find echoes of Deleuze's smooth and striated spaces and actor-network theory's spaces of singularity and multiplicity in this formulation, we also discern the emergence of a broad perspective that attempts to take in *all* the assemblages and networks, that is, those that aim at *deterritorialization* and those that aim at *reterritorialization*. Serres, like Foucault, wishes to understand how the connections between sites and structures work to generate 'unities' (Gutting, 2001: 233). In order to discern these unities, he aims to place himself in a position where he can freely criss-cross the intermediate zones, drawing out from the networks what best illuminates the entire landscape. This desire to chart the 'cross-over', to be situated *between* assemblages, networks, lines of flight, stems from Serres's efforts to reformulate some long-standing and accepted conceptual divisions, such as those between self and society, subject and object, science and literature, the social and the natural (see Serres and Latour, 1995). According to Brown (2002: 1–2), Serres 'proceeds from the notion that disciplinary and conceptual divisions, although complex and provisional, may be analysed by exploring potential channels or "passages" that run between them'. In making these 'border crossings' Serres aims to show how the world is dis/ordered – that is, he aims to tell us something tangible and clear about things that are missed by mainstream disciplinary knowledges. He aims at a 'method of rapid movement, and congruent "comparativism" [...] the method of the space between, of conjunction of bringing into proximity' (Bingham and Thrift, 2000: 285).

As indicated above, we still encounter here a topology based on multiple space-time relations. However, Serres is concerned to philosophically (re)construct landscapes in which assemblages and networks 'communicate' with one another. Communication 'traverses those spaces [...] that are much less clear and transparent than one would have believed' (Serres and Latour, 1995: 75). He therefore explains a need to 'describe the space situated between things that are already marked out' (Serres and Latour, (1995: 64). Spaces in-between the assemblages, the orderings, the networks are, Serres believes, 'more complicated than one thinks. That is why I have compared them to the North West Passage

be confined to existing or consolidated relations; he wishes to explore an area that he believes 'is strangely devoid of explorers' (Serres and Latour, 1995: 70) in order to discern the 'network of multiple bonds', the 'lattice of relations' (Serres, 1995: 111) that ultimately tie local domains into a 'global landscape' (Serres and Latour, 1995: 118). This space 'in-between' is, for Serres, a potentially chaotic turbulent place; in fact, chaos and turbulence appear to be *primary*, while spaces of organisation and stability are *secondary* (Conley, 1997: 62). Network builders must therefore struggle *against* disorder and disarray. We might, then, see stabilized networks as 'islands' set within a broader context of commotion and flux.

In these observations Serres directs our attention to the way that networks define themselves against their contexts of emergence. As processes of definition unfold, networks can become either relatively closed – thereby establishing sharp boundaries between their own internal relations and contextual relations – or they become relatively open – thereby ensuring fluid interactions between internally and externally constituted relations. Networks will adopt whichever strategy ensures stability. Space will thus be constituted in very different ways depending on the network type. If networks are 'closed' then space is likely to be constrained and bounded, confined within Panoptical sets of relations. If the network is 'open' then space is likely to be emergent and fluid, channelled along and through multiple lines of flight. In other words, the interaction between network and context works to generate either singularities or multiplicities. As Doel, using Deleuzian terminology, puts it: 'A fold is always at least twofold. Sometimes it functions as a line of rigid or supple segmentation, which effectively partitions and territorialises the plane of immanence into a plane of organisation. Sometimes it acts as a line of flight, which unfolds and deterritorialises the plane of organisation' (1999: 165).

At certain times and in certain places, multiplicities are 'folded' into singularities, while at other times and in other places singularities are 'unfolded' into multiplicities. For instance, in Foucault's Panoptic prison the process of folding *in* is seemingly so well executed that ordered and predictable outcomes are routinized in the actions of potentially unruly prisoners. A tight lattice of relations is consolidated and this keeps both internal dissent or external interference at bay. However, the lattice can also unravel so that the repressed or contained multiplicities begin to unfold outwards within a myriad of lines or networks. At this point the division between the prison and its contextual environment begins to dissolve and topological relations displace topographical relations.

To summarize this section, we can say that while the theories put forward by Deleuze and Serres vary in the language they use to describe assemblages, networks, lines of flight and so forth, they both point us towards space as an

others apart. They create both proximities and distances, topographies and topologies. Deleuze and Serres provide rich descriptions of such spatial variations. They also recognize that the areas 'in-between' are a prominent aspect of post-structuralist geography. These 'in-between' spaces, which are turbulent, unstable and viscous, must be carefully navigated by the networks. Two main navigational strategies present themselves: first, draw sharp distinctions between network and context so the turbulence is kept at bay; second, constitute the network in such a fashion that it somehow 'internalizes' flux and instability. In practice we might suggest that some combination of the two strategies represents the norm.

In order to assess the differing spatial effects of network strategies Deleuze and Serres encourage us to seek out *vantage points* from which we might observe *all* the networks, assemblages, lines of flight. In this regard, they return us to *geography*, to the analysis of spatial formations that are simultaneously ordered and disordered. They emphasize that processes of (dis)ordering emerge from the activities of multiple networks running through and around specific spatial arenas. They therefore suggest we assess 'a double articulation of impossibilities: the smooth and striated; territorialisation and deterritorialisation; stabilisation and destabilisation; constancy and consistency' (Doel, 2000: 124). In these various combinations we find the proper disposition of relational space.

## Conclusion

Over the last three chapters, we have moved further and further into relational space. We began with Foucault's explorations of discursive space, the way spatial arrangements 'mirror' discursive formations. We saw that as Foucault's work progressed, he paid more and more attention to the materiality of discourse, to the way discourse becomes encoded or embedded within the material arrangements that comprise prisons, asylums and other such institutions. He also reflected on practice, in particular on the strategies of normalization that seem to accompany the assembling of materials in the shape of institutional sites. He explained that these materials are constituted in ways that bear down upon individual behaviour in order to both generate knowledge about this behaviour and to prescribe the actions that individuals can take (these two aspects come together particularly clearly in the Panoptic prison).

Space is here made within sets of heterogeneous materials, all assembled in line with certain discursive priorities. The same theme is evident in actor-network theory, which also explores how space is made in heterogeneous ways. Again, the emphasis is on relations assembled in line with particular strategies of normalization, this time devised in clearly defined centres of calculation (such as laboratories). Actor-network theory extends the range of discursive rationali-

between discourse and alignments of heterogeneous materials, for it claims that these materials cannot just be seen as 'effects' of the discourse; rather, they play a real and active role in the materialization, and thus the ultimate shape of the discourse itself. In short, discourse and material enter a reciprocal relation.

In many ways, the discussion of Foucault's work in Chapter 2 and the discussion of actor-network theory in Chapter 3 cover similar ground: they both show how actors become powerful (the guards in the Panoptic prison, Pasteur in his laboratory) and they outline the importance of spatial arrangements in generating this power. Actor-network theory in particular provides a rich description of the means whereby power relations facilitate movement from one place to another. It therefore allows us to see how spatial relations become intrinsic to power relations (that is the true significance of 'action at a distance'). Actor-network theory also makes the strong claim that relations always run at 'ground level': we never need to shift scale from the 'micro' to the 'macro' or from the 'local' to 'global'; rather we need to attend to network length. Thus, the methodological priority is to follow the networks wherever they might lead, illustrating how they 'space' and 'time' as they go (Bingham and Thrift, 2000).

Yet, the accounts provided in Chapters 2 and 3 have a tendency to focus on normalizing and prescriptive sets of relations. As we have seen, this focus can lead to unwarranted assumptions about the ease with which networks enrol both actors and localities into their modes of functioning. In so doing, the theory downplays one of Foucault's key insights – that any extension of power relations will inevitably meet resistance. The interplay between extension and resistance takes the form of an 'agonism' as the two forces struggle for supremacy. A number of those working in the Foucaultian/actor-network theory tradition have now begun to investigate the spatial effects of this 'agonism'. In particular, they have begun to show how networks and localities genuinely 'interact' so that some modification of both partners – the network and the locale – takes place. This can be seen as a kind of 'trade-off' between network space and local space. The upshot is that network relations should be seen as a mixture of local specificities and network regularities. Networks, it might be argued, come in a variety of shapes and sizes, as do network spaces. We therefore need to look in detail at how networks operate, how they move from place to place, and the types of relationships that are established between network form and spatial location.

It has been proposed that while the in-depth analysis of networks is a good means of understanding the relational construction of space, we also need to stand outside the networks in order to see the broad spatial terrain. This returns us to notions of geography as a kind of 'imperialistic' science, one that attempts to understand the spatial unities that encompass multiple sets of (networked) relations. The reassertion of this more traditional geographical perspective suggests

broader contexts of movement and flux. We should therefore aim to hold the multiple and the singular together: we need to consider how varied relations run 'through' space, weaving their own space-time trajectories, and we also need to consider how these relations interact with their broader spatial environments. In this regard we see that some networks aim to establish sharp boundaries between the 'inside' and the 'outside' while others remain fluid and permeable, open to outside influence and accommodating of externally-inspired change. These differing network types can be seen as 'singular' or 'multiple', 'reterritorialized' or 'deterritorialized'.

We therefore arrive at considerable spatial complexity. In order to describe this complexity, a whole host of terms have been employed – singularity, multiplicity, fluidity, network, topology, assemblage, line of flight, territory, and so forth. Some of these terms are clearly more useful than others, but undoubtedly all retain an abstract quality, as though the effort to describe complex relational spaces defies more commonplace speech. In superficial terms, this observation seems credible: relationalism means overthrowing or amending more traditional ideas about the spatial realm, and more often than not any new way of seeing requires some new way of talking. And yet there is more to it than this, for it may be that the abstract quality of the terms owes something to the sheer difficulty of talking about space *in the abstract*. Andrew Sayer, for one, believes this to be the case: he says that, in the main, 'spatial theory can make only vague allusions to particular kinds of spatio-temporal organisation'. In his view, 'only more concrete analyses can hope to say more' (2004: 268). In concluding the theoretical section of the book, it must be acknowledged that the 'vague allusions' outlined above may be far too vague for some readers' tastes. However, in charting the development of post-structuralism through the theories of Foucault, Latour, Law, Deleuze and Serres, we have seen where this language has come from and what it endeavours to describe. It has been elaborated here in the belief that it does indeed help us to think about space, and the role that geography might play in understanding space, a little differently. However, the significance of these ideas will only be clear once they are invoked in particular geographical contexts. With this in mind, subsequent chapters move down from the abstract level to the case-study level in order to illustrate how the post-structuralist theories reviewed above might be applied in research practice.

## SUMMARY

In this chapter, we have investigated the topological spaces that emerge from multiple sets of relations. We began by considering networks of prescription and networks of fluidity and flux. The first network type tends to work with a formalized structure and therefore seeks to construct



being. We then turned to examine the relationship between network and territory in more detail, drawing upon work by Deleuze and Serres. It was shown that while space is underpinned by relations this does not mean that space is only relational in nature; territorial integrity and unity can still emerge. It was therefore concluded that we need to combine notions of demarcated enclosed spaces with processes of emergence and becoming.

### FURTHER READING

A useful introduction to Law's general perspective on relationalism can be found in Law and Mol (eds) (2002) *Complexities: Social Studies of Knowledge Practices*. Geof Bowker and Susan Leigh Star's (2000) book, *Sorting Things Out: Classification and Practice*, considers some of the spatial issues that arise as networks are extended. There are many secondary texts on Gilles Deleuze. One of the most useful and accessible is Paul Patton's (2000) book, *Deleuze and the Political*. Some idea of what Deleuzianism means for geography can be gained from Marcus Doel's (1999) *Poststructuralist Geographies*, as well as Mark Bonta and John Protevi's (2004) *Deleuze and Geophilosophy: a Guide and Glossary*. Anyone wishing to investigate the work of Michel Serres should probably start with the stimulating discussion between Serres and Latour in their (1995) book, *Conversations on Science, Culture and Time*.

### Notes

1. This is evident, for instance, in Ian Hacking's work on statistics. In the *Taming of Chance* (1990) Hacking traces the emergence of statistical techniques in the eighteenth century (the census, official statistics, taxation statistics and so on) and shows that statistics have become central to modern forms of governance, so central in fact, that good government becomes almost unthinkable without them.
2. Bowker and Star give this concern an ethical slant when they suggest that we hold 'firmly to a relational vision of people-things-technologies' in order to assess how networks and local arrangements can be *made* to interact in ways that reflect the aspirations of the multiple constituencies that reside at the interface of the two domains.
3. Law takes this notion of 'topology' from mathematics but it seems to be inherited mostly from the work of Michel Serres (see Serres and Latour, 1995, and the discussion below).
4. This discussion of objects here derives from the importance actor-network theorists attribute to technology in the making of space. As Callon and Law put it:

because it mobilises distant actants that are both absent and present. The drawing in the school exercise book illustrates this strange ontology. The blacksmith is walking beside the ploughman, his hand resting affectionately on his shoulder, but his silhouette is surrounded by a blue halo, just like a guardian angel. (2004: 6)

5. It is worth noting that during a visit to London in the mid-1990s, Serres is reported as describing Deleuze and himself as 'philosophical geographers' while he characterized Foucault and Derrida as mere 'historians of philosophy' (quoted in Critchley, 1996).
6. Moreover, the recurrent sequences that generate multiplicities give rise not to some closed, final, essential product but to divergent forms in a potentially endless series. Thus, a multiplicity has 'no need whatsoever of unity in order to form a system' (Deleuze, quoted in Delanda, 2002: 13). As Rajchman (2001: 60) says, a multiplicity is 'folded many times over and in many ways such that there is no completely unfolded state, only further bifurcations'.
7. Linear relations tend to fix entities into stable shapes, described by Delanda (2002: 13) as 'essences' that 'possess a defining unity [...] and, moreover, are taken to exist in a transcendent space which serves as a container for them or in which they are embedded'. Non-linear, complex relations differ to the extent that they do not have 'a supplementary dimension to that which transposes upon it. This alone makes it natural and immanent'.

## Part 2 Cases

### Introduction

In this empirical part of the book, we examine case studies which illustrate some of the theoretical issues raised in the first section. At the outset it should be made clear that these cases *do not* comprise simple applications of the theoretical frameworks emerging from the first part of the book. Rather they serve to show how *post-structural* spaces – for instance, spaces of singularity and multiplicity – are currently emerging within mainstream geographical research arenas.

The case-study chapters focus particular attention on the problematic interaction between complex, heterogeneous *processes* and coherent, stabilized *territories*. In so doing, they investigate efforts to 'order' space – that is, they show how various social actors seek to 'ground' complex processes in coherent and robust spatial arrangements. Thus, the spatial arrangements that come to dominate in any given instance can be seen as the outcome of struggles to impose stability in contexts of flux and fluidity. The chapters indicate that, more often than not, dynamic relations work to undermine formally constituted territories. Nevertheless, the struggle to 'order' space is necessarily on-going, as relations are continually harnessed to the process of building new spatial formations.

In the first case-study chapter, we examine the status of nature in a relational world. We investigate efforts in the post-war period to 'contain' nature in a strictly demarcated zone (in the English countryside) in order to protect it from dynamic and heterogeneous processes. We see that as nature came to be spatially bounded, transgressive processes began to work across the boundary line. These transgressive processes clearly threatened the protected (or zoned) nature but, paradoxically, they also worked to secure a more robust division between nature and society. The chapter shows that while nature should be seen in relational (notably, ecological) terms, efforts at 'containing' nature are still required if natural entities are to be sustained through time. In other words, while space may be made of relations we still need to ensure some degree of spatial permanence. Thus, ways must be found to align topographical and the topological spaces within post-structuralist accounts.

In the next case-study chapter, we look a little more closely at planning in order to see whether this form of governmental intervention might work to orches-

ideas about the spatial realm. We investigate how planning – as a ‘network of knowledge’ – interacts with its environment, selectively drawing in some aspects of its surrounding context while excluding others. We see how this process of interaction leads planning to construct particular spatial imaginaries. In reviewing these imaginaries, we see that early forms of planning focused primarily upon the physical characteristics of places. Over time, however, social and political processes gained a higher profile. More recently planning has come to embrace not just social entities but natural entities as well. However, it is argued that planning struggles to accommodate these entities, in part because it is unable to adequately engage with spaces of heterogeneity and fluidity. Suggestions are therefore provided for some amendment to planning processes so that a more dynamic approach, oriented to the multiplicities of space, can be brought into being.

Some indications as to how planning might play this new role emerge in the final case-study chapter. Through the analysis of two competing food networks, it is shown how contemporary food spaces are forged in relational terms. Here we find networks of spatial simplicity confronting networks of spatial complexity. In the former, efforts are made to disseminate a uniform set of spatial relations so that spatial location and network come to resemble one another. In this network, food becomes a standardized input into the network-building process. In the latter network, spatial diversity is maintained so that only loose connections are established between varied food spaces. Because this second network aims to promote diversity in food, it is better able to root itself in the multiplicity of food space. It thus illustrates how heterogeneous relations might be established in practice. We conclude that the interaction between network and space in the food sector might reveal how a post-structuralist politics of nature could be conducted.

The case-study chapters focus on relations between nature and society. They therefore illustrate how post-structuralist theory can be brought to bear on this traditional area of geographical concern. In the final chapter, the relationship between post-structuralist theory and ecology is further explored. The chapter takes as its starting point Verena Andermatt Conley’s (1997) observation that post-structuralism has always had close ties to ecology but the strength of these has never been fully appreciated or investigated. It is suggested that the connections between the two approaches be explored further so that the contribution of post-structuralism to pressing ecological problems can be ascertained (the case-study chapters give only rough guidance on this issue). However, some cautionary notes are sounded in this chapter. These refer mostly to the status of the ‘human’ in ecological and post-structuralist theory. In post-structuralist accounts, humans are displaced from the centre of the analysis and attention is focused upon relations of various kinds (as we

at the beginning of the book makes wonderfully clear). The final chapter proposes that, despite the ‘anti-’ or ‘post-’humanist dispositions of these theories, it is still necessary to retain some conception of human distinctiveness, even if human actions are thought to result from relational affiliations. The significance of the human, it is argued, derives from the fact that discourses, texts, arguments and other mechanisms of meaning generation are aimed at motivating humans to engage with the world – peoples and natures – in particular ways (again, some of these ways are revealed in the case-study chapters). If post-structuralism is to be politically effective (as many of its adherents assume it should be) then some notion of the human receiver of the post-structuralist message must be retained. Moreover, the case-study chapters show that an effective post-structuralist politics of spatiality should be concerned with the interaction between emergent process and territorial coherence and it should aim to ‘shape’ or ‘steer’ this interaction in ways that ensure an enhancement of ecological diversity and integrity.

# 5

## Dis/Ordering space I: the case of nature

Spatiality, however constructed, simultaneously unifies and separates. (Harvey, 1996)

### Introduction

Post-structuralism in geography focuses on the ways that dynamic and complex processes move through and across space, modifying spatial entities, recasting spatial relations. Following the material presented in previous chapters, it might be assumed that as societies become fragmented and striated by networks, so processes of spatial decomposition (referred to in Chapter 1 above) will generate increasingly complex topologies in which complexity and fluidity continually undermine simplicity and stability. Yet, in the last chapter, we began to see that topologies do not always displace topographies: at certain times and in certain places, topographical spatial formations can be consolidated *within* topological relations; reterritorialization inevitably follows deterritorialization. In other words, we should treat post-structuralist celebrations of the 'becomingness' of space rather cautiously for, as Allen (1999: 328) points out, 'we still live in a world of fenced-off territories and exclusions'.

In this first case-study chapter, we consider the relationship between complex relations of becoming and the consolidation of 'fenced-off territories'. In particular, the chapter seeks to identify how spatial classifications struggle to 'contain' heterogeneous relations. Thus, it looks in some detail at the zoning of space and it examines how demarcated zones interact with Deleuzian processes of becoming and emergence. It suggests that we might see in this interaction not just an intermingling of simplicity and complexity (the zone and the relation) but the consolidation of new emergent powers – that is, the act of division itself *guarantees* the construction of transgressive spatial relations. Thus, we cannot simply propose relational solutions: we need to think about the territorial implications of relational processes. Moreover, in certain circumstances, it might be appropriate to assert territoriality *over* relationality. Such a circum-

social institutions use classificatory schemes to routinely separate out forms of socio-spatial practice, in fact such schemes function to generate ever-increasing numbers of 'hybrid' entities (see also Whatmore, 2002).

Latour (1993) suggests that the interaction between division and relation is a defining characteristic of modernity. In particular, he sees attempts to sharply distinguish 'nature' and 'society' as emblematic of a 'Modern Constitution', one that 'believes in the total separation of humans and nonhumans' (1993: 37). While Latour emphasizes that the distinction between 'nature' and 'society' comprises a key classificatory motif within modern society, he also suggests that the tension between (simple) classification and (complex) relation is becoming increasingly difficult to ignore. In his view, 'purification' proceeds hand in hand with 'translation': 'far from eliminating mediation, [modernity] has allowed this to expand' (1993: 41). Thus, as Lee and Stenner say during a commentary on Latour's work:

Modernity in this account, is founded upon a moment of systematic misrecognition: we must speak as if nature and culture are clear and distinct realms but act as if they were not. We produce the modern world by mixing natural and cultural things into productive hybrids who can then promptly be ignored thanks to purifying tendencies of modern thought. (1999: 95)

An appreciation of the 'double movement' (purification *and* translation) gives rise to 'non-modernity', a social arena in which the failure of nature-society classifications in sifting out the world is increasingly recognized. Latour's own writings, which question the salience of modernist dualisms, can be seen as an illustration of 'non-modern' thinking (see also Michael, 2000; Whatmore, 2002).

A fundamental manifestation of the tension between modernism and non-modernism is political ecology (Latour, 2004). In line with the 'non-modern' perspective, many environmentalists believe that the separation between the 'natural' and the 'social' will ultimately be undermined by ecological relations (at some point nature will 'act' back upon human society, thereby disrupting and amending economic and social relationships – see, for instance, Beck, 1992). One main function of the environmental movement, therefore, is to remind modern society that development inevitably binds humans and nonhumans more closely together within complex socio-natural assemblages. And yet, while environmentalism is attuned to the hybrid character of the modern world, it is also caught up in the dualistic presuppositions highlighted by Latour (1993), for many environmentalists cling to the belief that nature can ultimately be separated from society. Thus, the objective of much environmental action is not to more deeply embed human action and human society in heterogeneous or hybrid relations; it is instead to diminish the impact of this society on natural entities by protecting nature from human interference.<sup>1</sup> These two strands

natural and social entities become ever more relentlessly intertwined; on the other hand, environmentalism proclaims the need to (re-)establish a clear division between the two realms, so that nature is more clearly demarcated from social influences.

In this chapter, we take up this paradoxical aspect of environmentalism by assessing how nature has been spatialized in the environmental movement. In particular, we investigate a classificatory system that has been instrumental in allocating 'nature' and 'society' differing spatial zones. Our example in this regard refers to the urbanization process and its impact on the countryside. Urbanization has been an almost continuous feature of modern development and concerns about its impact can be traced back to the earliest phases of environmentalism (see Lowe and Goyder, 1983; Eder, 1996; Macnaghten and Urry, 1998; Sutton, 2004). As urbanization has unfolded, so it has sprawled further and further outwards, thereby disrupting rural nature. In response, environmental groups have attempted to establish a clear classificatory division between the 'urban' and the 'rural' in order to limit the impact of the city on the surrounding natural environment. Yet, as the politics of division has worked to distinguish two spatial zones, transgressive relations have emerged that operate across any such spatial categorization. In this chapter, we describe some of the challenges that confront the environmental movement as it attempts to protect nature in the face of hybrid and heterogeneous processes of change.

We examine processes of division and transgression mainly in the context of one country – England – where the struggle to differentiate 'urban' and 'rural' zones has been particularly fraught. England is not only a restricted landmass, with one of the densest populations on earth, but it was also the first nation to industrialize and urbanize its economy and society. In the nineteenth century, it shifted from being a predominantly rural-agrarian society to being a predominantly urban-industrial society; as a consequence, urban areas grew rapidly and began to engulf their surroundings. Rural areas seemed vulnerable, and this apparent vulnerability gave rise to robust attempts to protect them from urban sprawl. At the same time, the countryside came to be portrayed as the main repository of 'nature'. Thus, efforts to distinguish urban and rural have, in England at least, been interpreted as efforts to distinguish 'nature' and 'society'.<sup>2</sup>

In the following sections, we first examine the role of preservationist thinking in the context of the environmental movement. As we shall see, though preservationism comprises an early form of environmentalism, it has remained a constant presence in the movement as a whole. Having shown that the urban-rural distinction is of fundamental importance to environmentalism, we then discuss how the divide between the two spatial zones has been put in place in the English national context. We describe how the planning system has played a key role in demarcating the two spatial zones and we consider how this role has been buttressed by the activities of environmentalists. We then go on to

(nature). These transgressive relations can be seen as affecting both rural and urban areas: rural nature becomes incorporated within new socio-economic formations that serve to redefine the significance of both rurality and nature, while urban society finds itself more deeply embedded in complex ecologies, ecologies that serve to undermine taken-for-granted notions of the city as a purely social and economic zone somehow separated off from the natural world. We will conclude by re-assessing the status of spatial classifications and the way these might to be aligned with heterogeneous relations.

### Demarcating spaces of 'nature' and 'society'

In Latour's (2004: 18) view, environmentalism has tended to affirm a conservative conception of nature: as he puts it, 'most of the time [environmentalism] changes nothing at all; it merely rehashes the Modern Constitution of a two-house politics in which one house is called politics and the other [...] nature'. In making this complaint, Latour is suggesting that environmental and ecological groupings have invested effort in upholding a profoundly 'modernist' distinction between nature and society. In a similar vein, Klaus Eder (1993, 1996) believes social views of nature have long fallen into two main 'camps': nature as a resource for human exploitation and nature as the source of ultimate goodness. This 'double structure', Eder argues,

has its origin in the everyday practices that determine the interaction with nature [...]. The ordinary practical basis of the double significance is seen in the dichotomy of city and country. The double symbolisation of nature enters into the antagonism between cultivated land and wilderness. It produces the antagonism between dominance and protection of nature, and it produces the peculiar relationship to animals that is torn between meat and mercy. (1996: 147)

Given the resilience of the 'double structure', it is perhaps not surprising to find it in some of the earliest manifestations of environmentalism. Importantly, in the English context this double structure comes to be seen in terms of an urban-rural separation, with nature and society allocated to differing spatial zones (Williams, 1973). For instance, Keith Thomas (1984: 301) shows that the desire to separate nature from society stems from the eighteenth and nineteenth centuries when 'the growth of the towns led to a new longing for the countryside. The progress of cultivation had fostered a taste for weeds, mountains and unsubdued nature'. As urban areas began to grow in the wake of industrial advance, writers such as Wordsworth and Ruskin focused their emerging environmental aspirations on the Lake District and other areas of 'unsullied' nature. For these early campaigners, 'nature' was deemed to lie far from industrial

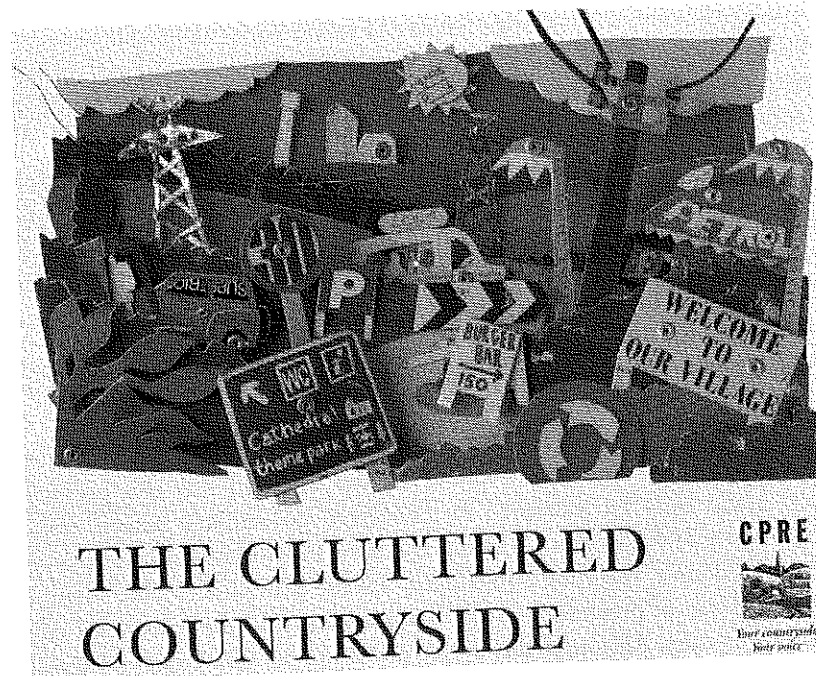
this ruralized nature was no longer viewed as robust but as vulnerable, threatened by urban growth and industrial expansion. The rapid and sprawling character of urban areas in the later years of the nineteenth century seemingly heightened the threat.<sup>3</sup>

Growing concern about urban encroachment on rural nature led directly into the formation of 'preservationist' organizations at the turn of the twentieth century, including the Lake District Defense Society in 1883, the Royal Society for the Protection of Birds in 1891, the National Trust in 1895, the Society for the Promotion of Nature Reserves in 1912 and the Council for the Preservation of Rural England (CPRE) in 1926 (Lowe and Goyder, 1983). In seeking to combat urban sprawl, these agencies mobilized ideas associated with a threatened rural nature and they sought to 'represent' nature in political disputes over patterns of development and regulatory responses to those patterns. The main concern was 'urban sprawl'. It was assumed that this pernicious process could only be restrained by concerted government action, notably through the establishment of a comprehensive and robust land use planning system. Yet, despite vigorous campaigning by the movement's elite members, little in the way of preservationist planning emerged in the early years of the twentieth century. Although the urban environment was improved through public health legislation, urban sprawl continued to unfold, largely as a result of increasing car ownership and the development of trunk roads (Clapson, 2000). Lines of flight from the city ran further and further into the countryside thereby challenging nature's distinctive status and its integrity.

These trends were perceived in highly negative terms by the preservationists, as Thomas Sharp, a planning theorist and leading CPRE member, makes clear:

From dreary towns, the broad, mechanical, noisy main roads run out between ribbons of tawdry houses, disorderly refreshment shacks and vile, untidy garages. The old trees and hedgerows that bordered them a few years ago have given place to concrete posts and avenues of telegraph poles, to hoardings and enamel advertisement signs. Over great areas there is no longer any country bordering the main roads: there is only a negative, semi-suburbia. (1932: 4)

Sharp illustrates here how heterogeneous processes of change run headlong into clearly ordered spatial zones: the urban destroys the rural by generating hybrid entities. For Sharp, the only solution was a new zoning system which allocated entities and activities into discrete and clearly differentiated spatial areas. As Patrick Abercrombie (1933: 36), another planning theorist and founder member of CPRE, famously put it: 'the essence of the aesthetic of the Town and Country Planning system consists in the frank recognition of these two opposites [...] Let Urbanism prevail and predominate in the Town and let the Country remain rural. Keep the distinction clear'. In David Matless's (1998: 51) view Abercrombie was expressing here 'a particular form of



**FIGURE 5.1** Contemporary concerns about the 'hybrid' character of the countryside are exemplified in the CPRE's 'cluttered countryside' campaign (Source: CPRE, 1996, reproduced courtesy of the Campaign to Protect Rural England)

'a normative geography of distinct urbanity and rurality [was to be] asserted over an England-in-between of suburb, plotland and ribbon development' (Matless, 1998: 32). In other words, hybridity and heterogeneity should be firmly kept at bay.

Yet, despite the energetic activities of preservationist groups, sprawl continued. During the inter-war period, over four million new houses were constructed in England: as the planning historian Ward (1994: 43) points out, 'the overwhelming majority of these were suburban houses, usually in semi-detached or short-terraced form, built at densities of twelve to the acre or less, with great emphasis on private gardens [...] a vision which became strongly associated with the garden housing of the new suburbs'. Not surprisingly, preservationists feared that suburban growth – especially when it straddled the ever-increasing numbers of new roads – would ultimately destroy the remaining repositories of nature to be found in the countryside.

Modernist planning only found favour with government following World War Two, when strategic concerns to boost food production gave new urgency to efforts aimed at protecting rural land (Sheail, 2002). At this time a compre-

assigned planning functions to the city authorities and administrative counties, to be exercised under the supervision of a planning ministry at the national level, which would issue directives to ensure standardized procedures across the national territory. In organizational terms, this distribution of responsibilities ensured a comprehensive governmentalization of planning. However, it also introduced a sharp division between urban and rural areas as the urban boroughs and rural counties became clearly separated from one another. On each side of the divide, it was envisaged that natural and social entities would be assembled in carefully coordinated topographical formations. In the urban zone, dynamic processes of change would be encouraged in the hope that robust economic formations would come into being. In the rural zone, the only economic activity given any legitimacy was food production – in the minds of preservationists, agriculture was working with nature and could therefore be regarded as somehow 'natural' (Green, 2002).

This spatial 'settlement' was bolstered by the multitude of preservationist groups that could be found across rural England. During the 1960s and 1970s, there was a marked increase in environmental activism at the local level and local planning agencies found themselves embedded within dense networks of local preservationist groupings.<sup>5</sup> The main aim of these groupings was to ensure that local planning agencies adopted preservationist governmentalities in their decision-making processes. In their view, topographically robust spatial formations would keep topological complexity at bay.

Yet, just as the preservationists succeeded in placing nature within its own protected zone in the countryside, environmental problems began to emerge that seemingly disrupted the new spatial settlement. Macnaghten and Urry highlight this potential disruption when they say:

By 1970 public attention, both in Britain and abroad, began to be drawn to a much wider range of problems threatening the environment, concerns not simply over wildlife conservation and amenity, but now including nuclear radiation, pesticide use, vehicle emissions and other systemic forms of air and water pollution. These events began to generate an awakening sense of a more general crisis of environmental bads, moving across national borders and potentially invading everyone's body. (1998: 50)

The new concerns appeared to run across all spatial distinctions such as that between urban and rural areas. Moreover, these 'transgressive' environmental issues were articulated by new environmental groups, such as Greenpeace and Friends of the Earth (FoE). The rise to prominence of the new groups appeared to represent a challenge to preservationism and its zoning approach to environmental problems.<sup>6</sup> Environmental issues were now redefined as 'ecological' problems. In proposing this redefinition, the new groups indicated that nature should no longer be seen as simple and static but rather as dynamic and complex. Its protection could not be assured using simplified spatial classifications: now, holistic,

Yet, despite the attention given to ecological issues, preservationism continued to hold its own. As Sutton (2004) points out, a major part of the growth in membership in environmental organizations during this latest phase of campaigning was in preservationist groups. As he (2004: 45) says, 'the majority of new members drawn into the environmental movement joined either moderate groups and organizations or, more significantly, organizations that predate the new environmentalism'. Thus, we discern some continuity in the organizational structure of the environmental movement, with the older groups playing a key role in generating a mass membership in the later years of the twentieth century. Moreover, the new members of the older groups held the same preservationist aspirations as the older members, that is, they retained a concern to find stable spatial zones for nature in the countryside, nature reserves, sites of special scientific interest and so forth.<sup>7</sup> Thus, although the recent period has seen the politics of preservationism encompassed within much broader environmental issues, it remains an important part of the movement's repertoire. The environmental movement now seeks to integrate a focus on 'relational' or 'ecological' natures' with its traditional reliance on 'zoned' natures.

### BOX 5.1

The spatial imaginary of preservationist environmentalism in England:

- A key strand of environmentalism emerged during the last years of the nineteenth century and the early years of the twentieth century, which saw the main repositories of nature as lying beyond the towns and cities in the countryside.
- This nature was fragile and fugitive, threatened by ever-encroaching urban sprawl. The urban threatened ruralized nature because it brought the 'polluted' and 'degraded' city into areas that had previously maintained a balance between human ways of life and natural processes.
- The solution to this threat was the establishment of a divide which would keep heterogeneous urban processes at bay and would keep rural nature safe and secure. The divide would be policed by state planning authorities, working in line with preservationist governmentalities.

To conclude this section, we can say that the evolution of the English environmental movement indicates that as industrial growth modifies the environment, preservationists sought to diminish the effects of any such modifica-

to the urban realm and with nature residing in the rural. In short, nature is spatially zoned *out* of society. Although in more recent times environmentalists have turned to examine complex ecologies of dynamic and emergent relations, the zoning approach remains salient. There is still a strong desire to demarcate places of nature from spaces of society.

Yet, demarcations of this kind immediately give rise to a paradox: industrial society leads to greater and greater interrelationships between productive activity and natural resources; at the same time preservationist movements believe a 'line' or a 'divide' should be drawn between industrial society and its environment. In order to make the spatial demarcation stick, a series of 'transgressive' relations need to be curtailed. That is, a purification of space needs to be undertaken to ensure that the spatial classifications used by preservationist planning and other regulatory mechanisms correspond to the collections of entities to be found in the two clearly separated spatial areas of 'urban' and 'rural'. In the next two sections, we will examine this paradox a little more closely by considering how the two zones have fared since they became divided one from the other. In presenting this analysis, we will argue not only that spatial transgressions inevitably problematize the strict division between the two zones but also that the interaction between division and relation generates new spatial forms. In short, while spatial classification fails to contain spatial relation, the encounter between the two stimulates the emergence of new spatial assemblages.

### Rural transformations of (rural) nature

We begin on the rural side of the divide. As we have seen above, the preservationist movement assumed that, if the countryside could be protected from the expansion of the urban then nature would be left free to flourish. This view was based on the (romantic) notion that natural landscapes are rural in character: even though these landscapes have been modified by agriculture and other land-based industries, rural society remains the best custodian of nature (echoes of this preservationist assumption can be found in Scruton, 2004). This rather simplistic view has long carried considerable weight in the preservationist movement and, as preservationist pressure groups came to influence legislation in the post-war period, so a rather crude distinction between rural nature and urban society was enforced. Indeed, the post-war planning system was premised on the notion that if the urban could be contained within its pre-existing boundaries then rural nature would endure (Hall et al., 1973). However, in making this assumption the preservationists also assumed that nature could co-exist with the dominant economic activity in rural areas (in terms of land use) – agriculture.<sup>8</sup> Lowe et al. summarize preservationist views of agriculture as follows:



other threats to the countryside, such as urban encroachment and the decline of rural communities. A secure and revitalised agriculture was seen as the essential conservator of both rural life and the natural beauty of the countryside. (1997: 2)

Yet at exactly the same moment as the 1947 Town and Country Planning Act was putting in place safeguards for the protection of agricultural land, the 1947 Agriculture Act was assisting the agricultural industry to become a fully-mechanized form of manufacturing industry. Under this measure, the state was required to initiate the wholesale governmentalization of agriculture. This governmentalization process was based on a series of measures that were aimed at the rationalization of the agricultural industry:

1. The main role of government was to administer a system of 'guaranteed prices' so that farmers would be paid for whatever they produced, irrespective of market demand. One main effect of this system was to reward those producers whose production was greatest. Thus, the largest farms gained the most in terms of financial support. As a consequence they became large, intensive farms.
2. The state sought to increase agricultural efficiency and competitiveness through the provision of grants that encouraged farmers to undertake land development initiatives and to increase their levels of mechanization. Thus, the large intensive farms also became technologically sophisticated in their farming practices.
3. Farmers were encouraged to adopt common business and husbandry practices by state extension agencies – that is, business practices were subject to processes of governmentalization in which standardized accounting and other procedures were disseminated. The aim was to ensure enhanced standards of economic efficiency on farms..

All these measures were aimed at turning agriculture into an efficient and productive industry. They also sought to transform farmers into innovators and entrepreneurs. In order to achieve the latter aspiration, a Panoptical regime of agricultural regulation was brought into being, in which the state 'micro-managed' the practices of individual farmers in line with a particular set of productivist governmentalities (Murdoch and Ward, 1997). The state became involved in almost all aspects of agriculture from the provision of research and development to the monitoring of on-farm business and husbandry practices. The effectiveness of this regime can be seen from the vast increases in production that took place during the early post-war period: by 1969 agricultural output stood at nearly twice its pre-war level while the number of farmworkers employed on farms more than halved during the same period. In short, the agricultural industry moved some considerable way to becoming a

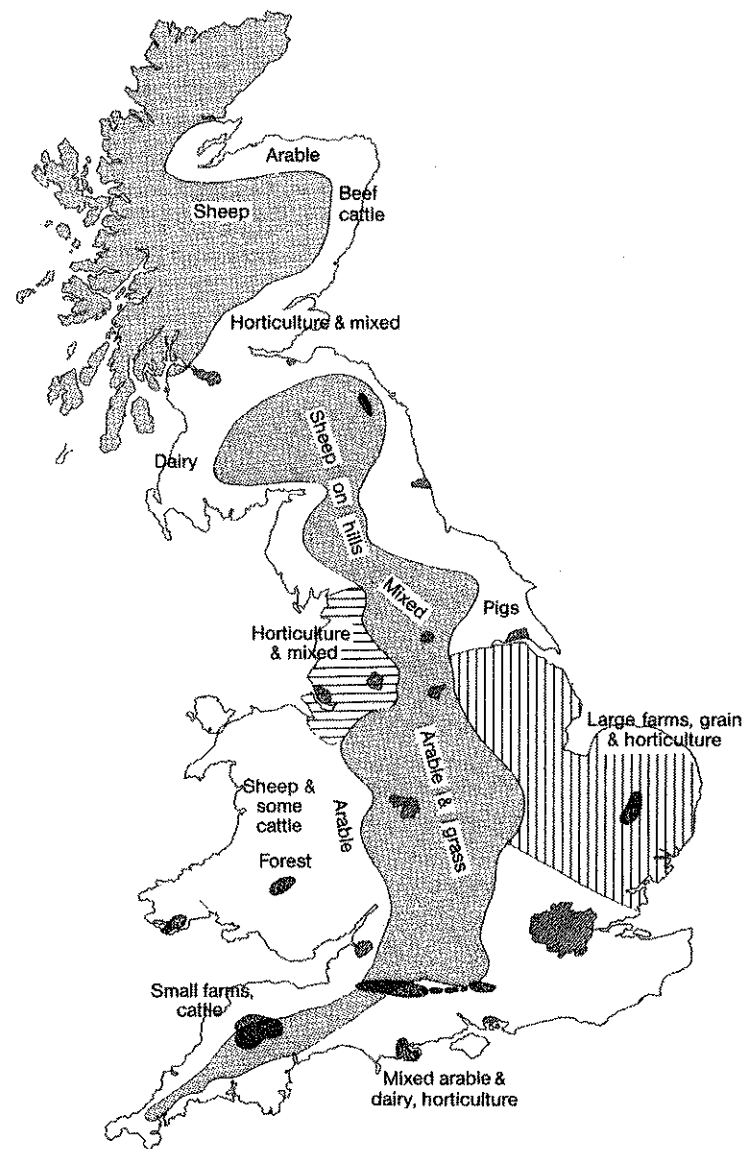


FIGURE 5.2 In the post-war period, a 'national farm' was 'governmentalized' with differing regions specializing in differing commodities (Source: Norton-Taylor, 1982)

land. These material outcomes followed directly from the productivist governmentalities that lay at the heart of state agricultural policy.

The interaction between government regulation and growing technolog-

and co-ordination of this zone was aimed at increasing food output: thus, farm structures, agricultural working practices, new machinic assemblages, all were to be mobilized in pursuit of this objective. In the process however natural entities were transformed, neglected and destroyed. Hodge summarizes the changes wrought by the post-war agricultural regime as follows.

In the 40 years following the Second World War, about 95% of lowland meadow was lost, 80% of chalk downland, 60% of lowland bogs, 50% of lowland marsh and 40% of lowland heath [...] The length of hedgerows declined from 495,000 miles in 1947 to 386,000 in 1985 [...] There is also continuing concern at the loss of wildlife, recent studies emphasizing that this is an indirect consequence of pesticides which have killed important food sources in intensively farmed areas. (Hodge, 2000: 103)

Agriculture was progressively being 'lifted out' of its natural resource base and as this 'lifting process' ensued so rural nature was transformed. It therefore became increasingly difficult to sustain the preservationist assumption that agriculture somehow 'worked with' nature; rather it seemed to be working against it in profoundly damaging ways (for a full account of the damage, see Harvey, 1997).

As the impact of the post-war revolution in agriculture became apparent, so preservationist groups belatedly began to shift their attention from urban pressures on the countryside to the destructive effects of rationalized farming practices. In making this shift, they initially campaigned for changes in productivist governmentalities so that impacts on nature gained a more central place in government thinking. However, the preservationists made little headway in this regard, in part because the agricultural policy community was extremely effective at excluding everyone but farmers from key policy arenas (Winter, 1996). The preservationists thus adopted another tactic: they began to suggest that agriculture should be incorporated into the land-use planning system so that any new development of farmland would be assessed by local planning authorities. The aim here was to bring agriculture into local policy arenas dominated by preservationist political networks (Lowe, 1977). Yet, this brings us to another paradox – local policy arenas were only dominated by such networks because so many preservationist activists were now present in rural areas. And these activists were present in rural areas because a fundamental shift was taking place in rural society – in particular, there was a sharp increase in the number of ex-urban rural residents living in the countryside. Moreover, the movement of population from urban to rural was accompanied by a movement of industry and services, meaning that the economic activities present in the countryside were no longer dominated by agriculture.<sup>9</sup> In other words, dynamic processes of socio-economic transformation had drawn urban and rural areas more closely together. The imposition of spatial zones had facilitated the emergence

### BOX 5.2

The rural transformation of (rural) nature stems from:

- The state's adoption of a national agricultural policy in the post-war period. This policy led to a full governmentalization of the agricultural sector with the state micro-managing farming practice in line with (Foucaultian) strategies of normalization.
- The aim of the policy was increased food supplies. Thus, a heterogeneous assemblage of resources was harnessed in the line with this policy goal: new farming structures, more machines on farms and fewer workers, more pesticides, more fertilizers, bigger fields and so forth.
- The consequence was a denuded nature and the construction of a simplified rural topography in which rural space was constructed around the needs of a productivist agriculture: bigger fields, polluted water, fewer hedges, less wildlife and so forth.

At first sight, these 'transgressive' processes would seem to fatally undermine the post-war spatial settlement. However, Hall et al. point out that:

The majority of English villagers [...] are adventitious to the countryside. They are either longer-distance commuters to the towns, or retired people [...] They tend to be prosperous and well-organised, and they care a great deal about the countryside and the way of life it represents. They see the countryside as a repository of tradition and of stability in the face of change. They naturally wish to preserve this image which makes them profoundly and instinctively conservative or conservationist – the two words in this context are synonymous. (1973: 431)

Not surprisingly, as this social group came to dominate rural society, so membership of local preservationist societies increased.<sup>10</sup> Thus, farmers found themselves encompassed within a new social formation, one that was quite unsympathetic to the governmentalities at work in agricultural policy. As Lowe et al. say during a study of agricultural pollution in the county of Devon in South-West England:

The influx of large numbers of newcomers was [...] associated with, and helped catalyse, a major shift in public attitudes to agriculture and the countryside. Many farmers had new neighbours with quite different perceptions of the function of the countryside. [They now] experienced direct pressure from neighbours and local people to change their farming practices. (1997: 155)

Local environmental groups were able to mobilize the new, ex-urban social formation in pressing for stronger local policing of polluting agricultural activities – that is, the groups ran campaigns alerting local residents to the farm

of pollution regulation, farmers soon came to feel themselves 'under siege' (Lowe et al., 1997). Rural nature therefore came to be preserved not by actors and institutions that were indigenous to rural space but by urban social groups that had moved *across* the urban-rural divide.

### Urban transformations of rural nature

Despite the greater attention given to agriculture, however, the activities of the newly strengthened preservationist groups were mainly focused on planning. As we saw earlier in the chapter, local environmental groups came into existence to ensure that local authority planning subscribed to the preservationist principles that lie at the heart of the planning system (summed up in the couplet 'rural preservation/urban containment', Hall et al., 1973). In the wake of the urban-rural shift of population and industry, the countryside was once again perceived as being under threat from lines of flight out of the city. The main threat was seen now to be the new house building that facilitated population flows across space. As the movement across the divide intensified, it began to run up against traditional preservationist concerns about the loss of land (and thus rural nature) to housing development. This conflict became especially acute in the south of England where the pressure for new homes had long been intense, especially in the 'well-heeled' shire counties to the south, west and north of London (Short et al., 1986; Murdoch and Marsden, 1994). The demands on rural land for housing emerged in this region because of a drift of population from north to south and a simultaneous movement of households away from the cities. It was therefore calculated that the population of the south-east region would continue to grow, but most importantly this growth would be concentrated in the areas *outside* London (Allen et al., 1998).

Concerns about the suburbanization of the countryside reached their height in the mid-1990s, when the Department of the Environment published housing projections which forecast that the number of households in England would grow by 23 per cent over the next twenty years. It was calculated that around half this total would be located outside the major conurbations with the consequence that rural areas, especially those in the south-east region, would face another wave of acute housing pressure (see Breheny, 1999; Vigar et al., 2000; Murdoch and Abram, 2002). Following the publication of this figure, preservationist groups such as the CPRE launched a major campaign aimed at preventing a despoilation of rural nature by further rounds of urban-inspired housing development. This campaign was conducted at both the national and local levels and generated considerable concern in the rural areas of southern England. In response, the government began to suggest that per-

In order to explore ways of levering these houses into urban locations, the government established an Urban Task Force to be headed by the architect Richard Rogers. From the Task Force report, published in 1999, it seemed that a concern for the relationship between urban and rural lay at the heart of the group's deliberations. The threats to (rural) nature were all seen to emerge from within the urban realm as destructive processes of change were continually being re-generated from within this spatial zone. Thus, implicit in the Task Force's proposals was a strengthening of urban-rural distinctions. For instance, after outlining the environmental problems that follow from urban sprawl (for example, increased energy use associated with low-density housing and car-dependent travel patterns), the report said:

Ultimately, town and country are interdependent. The welfare of one cannot be secured at the expense of the other. The guiding principle must be, therefore, that we focus maximum efforts on using available building land within our existing urban fabric. This does not mean that there will be no new greenfield development or that some of that development will not intrude upon existing green belts. What is important is that where such development has to take place it is based on strong principles of sustainable urban design, and it minimises its impact upon the surrounding countryside. (Urban Task Force, 1999: 37)

Many of the concrete proposals put forward by the Task Force followed from this perceived need to constrain urban sprawl. Moreover, the report seemed to have a profound influence upon government policy: in a policy guidance note for planning, published in the 2000, the government urged the planning profession to promote 'sustainable patterns of development'. However, 'sustainability' was defined here as the concentration of most new housing development in urban areas (DETR, 2000: 1).

#### BOX 5.3

The continuation of urban sprawl in the 1990s led to:

- A renewed focus on the zoning of urban-rural, nature and society so that countryside locations could be protected against urban housing.
- A focus on the need for an 'urban renaissance' so urban processes and entities could be better retained within urban locations. This urban renaissance would attend to the complex ecologies of urban life in the hope that transgressive relations across the urban-rural divide could be constrained.
- The paradoxical result that rural preservationists found themselves pulled across the divide into the urban realm in order to argue for enhanced urban environments

Although the Urban Task Force report and the government's 'urban renaissance' policy proposals seem at face value to be a triumph for preservationism, the thrust of the new approach paradoxically pulled the preservationist movement in a new direction, for it now seemed that *rural nature* would be best protected by improvements in the environmental quality of *urban areas*. Thus, local activists began to lobby for urban housing capacity studies, better standards of urban housing design and 'sustainable' urban extensions (Murdoch and Lowe, 2003). The protection of rural nature came to be seen as only one part of a much larger parcel of 'goods' (improved urban environments, environmentally benign patterns of living and better use of scarce resources, etc.) that could be delivered through preservationist governmentalities. In this regard, the preservationists seemed to be aligning their traditional concern for urban-rural division with the recognition that both urban and rural areas should be combined within complex relational ecologies, as social and industrial changes draw differing spatial zones into states of interdependency. In such states of interdependency, the assertion of spatial divisions needs to go hand in hand with the assertion of spatial relations, an outcome that makes it hard for preservationists to focus solely upon on a separated and preserved nature.

### Urban transformations of urban (and rural) nature

This recognition of the need to environmentally manage urban and rural areas in tandem with one another brings us inevitably to the natural qualities of urban areas. As we have seen above, the environmental movement has generally assumed that in England, at least, nature is to be found in the countryside while society is to be found in the city. Thus, it is usually thought that efforts to protect nature should be focused on preserving the rural and containing the urban. Yet, it is clear that nature is not easily sifted into any such spatial division. As Chris Philo (1998) illustrates in his description of Smithfield market in London, nature has always been present in the city. This can be seen, he says, in the number of animals kept in the city as pets, as zoo species and as livestock for slaughtering. In discussing the way animals disrupt our taken-for-granted spatial orders, Philo quotes Atkins, who says:

The idea of finding animal husbandry in an English city in the present or in the past might appear strange in view of the current pressure of urbanisation upon agricultural land use. The built-up area somehow seems an alien environment in which to keep horses, cows, pigs and sheep, but in mid-nineteenth-century London the idea of a clear-cut distinction between urban and rural life had yet to develop. (Philo, 1998: 59)

... divide was established in the twentieth century, animals

Nature is present in the city in many other forms as well – in well-tended parklands and gardens, in woodlands and in neglected or 'wasted' spaces.<sup>11</sup> Again, there has been a long-standing concern for urban nature, as Laurie explains:

The development of parks and the preservation of natural amenity in nineteenth-century cities was the result of a movement of great strength and persuasion. This movement was built on five concepts. First, that natural or natural-looking parks, street trees, and public gardens would improve the health of the people by providing space for exercise and relaxation in pure air. Secondly, it was believed that the opportunity to contemplate nature which public parks provided would contribute to a much needed improvement in morals. Thirdly, a fascination with the aesthetics of natural landscape in the second half of the nineteenth century led to the notion that parks and gardens would improve the appearance of a city. Fourthly, and in association with this, the value of property would be increased due to its association with parks. Fifthly, an increasing public interest in natural processes and the elements of nature, both plants and animals, fostered the introduction of educational arboreta and zoological gardens and contributed to the desire for natural areas with indigenous plants as habitats for wild life. (1979: 37–8)

The confluence of these various factors led to the emergence of a political movement dedicated to the protection of urban green space. The movement can be traced from the formation of the Commons Preservation Society in 1865, through to the Open Spaces Society established in 1893, and on to the various urban trusts that appeared in the post-war period. Such groups have acted to protect urban green space against further development and have attempted to regenerate forgotten and neglected spaces so that urban biodiversity might be increased.<sup>12</sup> As Whatmore and Hinchliffe (2003: 1) emphasize, 'urban wildlife groups, amateur naturalists, voluntary organisations and the like have been key players in [the] realignment of urban spaces and conservation concerns'. Thanks to urban environmental activists, nature remains an ever-present feature of urban life.<sup>13</sup>

The existence of nature in the city can lead to new evaluations of green urban living. As Jim (2004: 311) puts it, 'a city with high-quality and generous green spaces epitomises good planning and management, a healthy environment for humans, vegetation and wildlife populations and bestows pride on its citizenry and government'. Yet, preservationism threatens these high quality natural environments as it extols the virtues of the compact or contained city. Jim admits that,

Compact urban areas are characterised by the close juxtaposition of buildings and roads with limited interstitial spaces to insert greenery [...] The compact city here encompasses the high density built form with a high proportion of the land surface covered by buildings and other artificial structures and surfaces. The ratio of impervious to pervious land areas is very high and conditions for plant and animal life are usually very trying. (2004: 312)

(2003: 4) view, planners in the compact city rarely see 'the fecund world of creatures and plants as active agents in the making of environments'. Natural processes are still regarded as lying 'firmly outside the city'; the 'feral spaces in the city that sustain them are cast as "wastelands" ripe for development'.

Whatmore and Hinchliffe believe this problematization of urban nature is implicitly invoked in the report of the Urban Task Force (1999), mentioned at the end of the previous section. The main objective of the Urban Task Force report is to bring well-designed but contained cities into being. One key means of achieving this is thought to be an increased density of housing. The Task Force (1999: 64) thus recommends what it calls 'pyramids of intensity', which would facilitate 'intense and integrated development' on many so-called 'brownfield' (that is, previously developed but abandoned) sites. In order for these 'pyramids of intensity' to come into being, the planning system must act to increase housing densities in its plans and development-control decisions. Moreover, local authorities should 'undertake regular physical surveys of sites' to assess the potential contribution 'brownfield' land can make to meeting housing needs (1999: 214). These so-called 'urban capacity' studies can be used to explore land-development areas that would otherwise be neglected. Such surveys and studies should be used to prioritize governmentalities of urban renewal and regeneration (Murdoch, 2004). The consequence, as Whatmore and Hinchliffe note, is that urban spaces of nature will be squeezed even further so that 'brownfield' sites that include natural habitats will be released for development.

While the 'squeezing' of nature inside cities is the inevitable consequence of sustained but contained urban growth, the main urban pressure on the natural world can be attributed to the 'lines of flight' in and out of cities. Giradet describes these 'lines' in the following terms:

The metabolism of most modern cities [...] is essentially linear, with resources being 'pumped' through the urban system without much concern about their origin or about the destination of wastes, resulting in the discharge of vast amounts of waste products incompatible with natural systems [...] Food is imported into cities, consumed, and discharged as sewage into rivers and coastal waters. Raw materials are extracted from nature, combined and processed into consumer goods that ultimately end up as rubbish which can't be beneficially reabsorbed into the natural world. More often than not, wastes end up in some landfill site where organic materials are mixed indiscriminately with metals, plastics, glass and poisonous residues. (1999: 10)

The flows of resources and wastes are orchestrated by networks which work to transform (rural) nature into discrete forms that can then be transported into the urban realm for the benefit of urban consumers. Once consumed, this nature gives rise to wastes that must then be exported back out to retain the 'purity' of urban space. In the process the city progressively transforms its external environment. The urban-rural divide not only fails to prevent the flow of materials in and

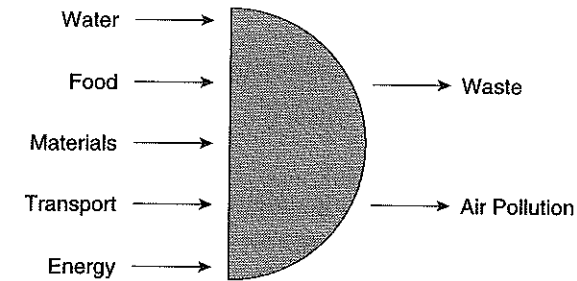


FIGURE 5.3 Heterogeneous flows through the city (Source: Urban Task Force, 1999)

calculate the 'footprint', flows are converted into the areas of land (or sea) required to deliver the requisite volume of materials. On this basis, it has been calculated that London's ecological footprint extends to the size of the UK, 250 times larger than the city's geographical area (Environment Agency, 2002). Such a finding indicates that even when a clear division between urban and rural is established, the flows of materials continue. In fact, they not only continue, they also increase. For instance, we noted earlier that as rural England was zoned as an area of nature to be sustained by agricultural production, the amount of food that could be produced for urban consumers rose markedly. In other words, the flow of natural resources into English cities from the English countryside (in the form of food) was enhanced during a period when rural nature was seemingly under sustained governmental protection.

#### BOX 5.4

The concern for urban nature drew attention to:

- The fact that urban areas had always been repositories of nature. Animals had long been kept in the city. Parks and other areas of outdoor amenity had always played a key role in urban life.
- That despite the number of organizations working to protect urban nature, the prevalence of the zoning governmentality in policy circles often led to the disregard for urban natural entities in development. This became especially clear in arguments over 'urban renaissance', for the new focus on urban development seemed to threaten urban nature anew.
- The fact that nature must be seen not in spatial but in ecological terms. Heterogeneous processes flow across spatial divides and carry significant consequences for

It is clear, then, that the main ecological effects of cities cannot be mitigated by simply dividing the urban from the rural: rather, an ecological approach is required that addresses both sides of the divide simultaneously. As Girardet puts it:

Cities will need to adopt circular metabolic systems to assure their own long-term viability and that of the rural environments on whose sustained productivity they depend. To improve the urban metabolism, and to reduce the ecological footprint of cities, the application of ecological systems thinking needs to become prominent on the urban agenda. Outputs will also need to be inputs into the production system, with routine recycling of paper, metals, plastic and glass, and the conversion of organic materials, including sewage, into compost, returning plant nutrients back to the farmland that feeds cities. (1999: 10)

This ecological approach to urban-rural relations focuses on flows, on the heterogeneous materials that run across space in and out of the urban realm. Thus, we discern an ecological politics focused on the consolidation of a dynamic and complex system of socio-natural relations in which the urban and the rural are combined in some kind of 'sustainable assemblage'. However, it is important to note that within such an assemblage, zoning still remains necessary. As Girardet (1993: 156) points out, 'cities need to protect the farmland, forests and watersheds in their vicinity'. They therefore need to establish 'circular' relations in which the valued natural assets of the city and the countryside are nurtured and sustained simultaneously.

### Conclusion

In this chapter, we have seen the emergence of a division between 'nature' and 'society' in the form of a spatial classification of urban and rural areas. It has been suggested that environmental groups have spent much of the twentieth century engaged in a politics of spatial division. The aim of this politics was to ensure that society was contained within the city while nature was protected from urban influence. This objective was successfully enshrined within dominant governmentalities, notably the 1947 Town and Country Planning Act, a measure that largely functioned to enclose the city and to preserve the countryside, and the 1947 Agriculture Act, which sought to ensure that rural nature was encompassed within a Panoptical regime of agricultural governance. A zoning governmentality thus came to prevail in the governance of nature.

One thing we might assume following this account is that social actors routinely focus their attentions on topographically simplified spatial zones. The idea that we can solve socio-ecological problems through some form of spatial separation remains powerful in the minds of the most engaged political actors.

processes continue to operate 'on the ground'. Moreover, again as Latour emphasizes, these transgressive processes are actually strengthened by the imposition of classificatory regimes. By preserving 'rural nature', the governmentalities of planning ensure the enhanced attractiveness of the countryside to urban consumers: population change straddles urban and rural areas, while increased food production (for urban consumers) transforms rural space. Preservationism is therefore confronted with a paradox: it supports the separation of the urban and the rural in order to preserve the latter; yet the implementation of preservationist policy ensures the generation of transgressive processes of change.

As we have seen, one response to this paradox is to set the urban-rural divide in an 'ecological' context. Thus, preservationism is forced to move away from environmental simplicity towards ecological complexity with the consequence that the connections between urban and rural areas become more important than the divisions. The aim of an ecological approach is therefore to bring urban and rural areas into a 'sustainable' alignment, one that opens up a possibility for concerted action to protect not just vulnerable rural natures, but neglected urban environments also. Ideally, this alignment should work to establish new and robust connections between spatial zones that have for too long been distanced from one another. In short, simplified spatial divisions should now be recast so that they can be encompassed within broader 'sustainable assemblages'. These assemblages should comprise rich ecologies of the human and the non-human, the social and the natural, the material and immaterial. They will serve to link previously divided spatial zones into complex sets of spatial relations. In the spaces of these relations, differing mixtures of entities will be discerned so that some semblance of 'urbanity' and 'rurality' remains. However, such zones will no longer be seen as 'pure' for the interaction between spatial division and spatial relation will continue to generate new, hybridized spatial forms (Whatmore, 2002).

Thus, the 'politics of zoning', which has tended to dominate environmental politics, gives way to a 'politics of becoming', in which innovative and creative alignments take precedence. Here, new collectives are orchestrated so that heterogeneity and sustainability are achieved simultaneously. However, it also appears that topographical zones will still need to be successfully combined with topological processes. In other words, clearly coordinated sets of (environmental) entities will need to be established in ways that are sensitive to (ecological) processes of becoming and emergence. How this combination of topographical management and topological fluidity might be achieved is currently an open question. However, the case study presented above does indicate that zones and relations must be made fundamental to any strategy aimed at sustaining the heterogeneous ecology of space and place. Zones depend on relations and relations emerge from zones. A fuller recognition of this fact

urbanity *and* their rurality, by the quality and diversity of their natures, by the ecological sensitivity of their socialities.

### SUMMARY

In the main, this chapter has addressed the relationship between dynamic processes of becoming and spatial contexts of territoriality. It has done this by looking at efforts to protect and preserve nature using spatial divisions and designations in the context of England during the twentieth century. Following Bruno Latour, it has been argued that efforts to establish spatial divisions will inevitably be undercut by the dynamic nature of spatial relations. Latour's observation has been borne out by the simultaneous emergence of divisions and relations in the UK, as city was divided from country thus enabling transgressive processes to come into being. However, while this finding might lead some to think that efforts to establish spatial divisions should now be abandoned, it was concluded that some combination of division and relation is required if nature is to be sustained into the future.

### FURTHER READING

On early preservationist efforts to divide city and country see David Matless's (1998) book, *Landscape and Englishness*. On the politics of the same, see Philip Sutton's (2004) *Nature, Environment and Society*. For an alternative account set in the United States, see Adam Rome's (2001) *The Bulldozer in the Countryside*. On resource flows in and out of urban areas Herbert Girardet's (1993) book, *The Gala Atlas of World Cities*, remains useful.

### Notes

1. Sarah Whatmore, in a discussion of genetic property rights, discerns the same two environmental viewpoints: "The one conjures a world that is hybrid "all the way down", enfolding humanity in its ceaseless commotion time out of mind. The other conjures a world until recently unmarked by the (invariably negative) "impacts" of human society, only countenancing hybridity as a technical accomplishment associated with the advent of "genetic resources" (2002: 92).
2. While in many national contexts the equation of the countryside with nature is problematic, in England the two are seen as closely aligned. As Crandell (1993: 16) puts it: 'when we think of nature we too often conjure up images borrowed from nineteenth century England'. These images have retained their power not just

(Neumann, 1998). It hardly needs saying that such notions are still strongly present in England itself and this justifies our equating nature and countryside in what follows (see Macnaghten and Urry, 1998, on the relationship between the two in the UK context). In general terms, this equation bears out Soper's observation that

nature itself only begins to figure as a positive and redemptive power, and to be valued in its sublime and untamed aspects, at the point where human mastery over its forces is extensive enough for aesthetic exaltation in wilderness to replace blind animal terror. The romanticisation of nature is in this sense a manifestation of the same human powers over nature whose destructive effects it laments. (2000: 20)

3. As Sutton (2000) notes, the number of commuters into London rose from 800,000 in 1881 to 1,112,000 in 1891, while the suburban population grew from around 940,000 in 1881 to over 2,000,000 by the turn of the century. In short, the city began to reach further and further into the countryside. This bolstered the fears of environmentalists that such a sprawling of urban life would destroy the repositories of nature still lying beyond the reach of industry.
4. In the words of two experienced commentators: "The Town and Country Planning Act, 1947, might just as well have been called the Town *versus* Country Planning Act: towns and cities were separate from the countryside and good planning would keep them so' (Cherry and Rogers, 1996: 62).
5. Membership of these groups rose on some estimates from 20,000 to over 300,000 during this period (Lowe and Goyder, 1983).
6. Greenpeace, which was only established in the early 1970s, saw its membership rise to 10,000 members in 1980 and to 400,000 by the early 1990s, while Friends of the Earth increased its membership from 2000 in 1971 to 180,000 by 1990. It is estimated that by 1981, national environmental groups in the UK had a combined membership of 1.8 million, rising to 4.2 million in 1998 (Rawcliffe, 1998: 3).
7. The link between preservationism and contemporary environmentalism is given further substance by Rome (2001), who, in an analysis of post-war suburban development in the US, argues that the issue acted as a 'bridge' between old and new environmental groups. As suburban sprawl extended out from the cities during the late 1940s and early 1950s, conservationists, environmentalists, ecologists and others began to mount local and national campaigns against destructive development. According to Rome,

the effort also had a significant impact on the emerging environmental movement. The open-space issue pointed conservationists toward a broader more 'environmental' agenda. It created a new group of activists and a new set of grassroots organisations. Perhaps most important, the open-space issue contributed to the development of a distinctly environmentalist rhetoric and imagery. (2001: 139)

Rome (2001: 151) argues that by the 1960s the movement concerned with preserving open and green space had become closely intertwined with the movement for conserving the more general environment: 'The emergence of a popular ecological consciousness strengthened the conservation argument for open space. At the same time, the campaign for open space increased the range of support for the

8. As CPRE member, and author of an influential wartime report on rural policy, Lord Justice Scott put it in 1942: 'farmers and foresters are unconsciously the nation's landscape gardeners [...] even were there no economic, social or strategic reasons for the maintenance of agriculture, the cheapest way, indeed the only way of preserving the countryside in anything like its traditional form would be to farm it' (quoted in Green, 2002: 192).
9. Between 1961 and 1971, the population of rural areas increased by 6%, the first such net increase since the onset of the Industrial Revolution. In the following decades, the movement of population accelerated, with rural areas increasing their population share by over 9% between 1971 and 1981, and by 6% between 1981 and 1991, with even remote rural locations experiencing population increases. Between 1960 and 1987, the number of manufacturing jobs in England fell by 37.5% but the number in rural locations rose by 19.7%. This was followed by an increase in service jobs in rural locations: private service employment grew by 49% in the towns and rural areas between 1981 and 1996, but only by 19% in the conurbations (for a summary of these trends see Murdoch et al., 2003).
10. CPRE grew from 15,000 members in the 1960s, to around 20,000 members in the mid-1970s, to almost 40,000 in the late 1990s (Murdoch and Lowe, 2003).
11. Reader (2004: 297) points out that London comprises 65,000 woodlands, covering 7000 hectares, two-thirds of which is ancient woodland. As a result, in 2002, the UK Forestry Commission appointed the city's first Forestry Conservator.
12. For instance, the Commons Preservation Society claimed to have preserved 95,000 acres of common land in its first 20 years of activity (Sutton, 2004).
13. As the Environment Agency (2002) points out, many rare or threatened habitats can be found in or near urban locations: for instance, urban areas in England hold around two-thirds of the country's Local Nature Reserves, as well as large numbers of Sites of Special Scientific Interest (the most protected of ecological sites).

## 6

### Dis/Ordering space II: the case of planning

Through exclusively social contracts, we have abandoned the bond that connects us to the world, the one that binds the time passing and flowing to the weather outside, the bond that relates the social sciences to the sciences of the universe, history to geography, law to nature, politics to physics, the bond that allows our language to communicate with mute, passive, obscure things – things that, because of our excesses, are recovering voice, presence, activity, light. We can no longer neglect this bond. (Serres, 1995)

#### Introduction

In the last chapter, we gained some insight into complex interactions between spatial relations and territorial zones. We saw that efforts to separate out nature from society led to the generation of transgressive and heterogeneous processes that ultimately undermined the spatial demarcations that had been put in place. It was therefore concluded that the demarcations need somehow to be aligned with relations, notably in the context of emergent ecological formations. In short, an ecological approach requires the territorialization of multiple processes, even those that extend over considerable ('global') distances.

One key means of demarcating territory is planning and, indeed, in the previous chapter the planning system came to be seen by preservationists as the primary mechanism for 'ordering' nature and society in spatial terms. Yet, despite this reliance on planning by preservationist environmental groups, planning – as a 'network of knowledge' – has traditionally had some difficulty in drawing both natural and social entities into its sphere of operation, as the last chapter also indicated. In part difficulties arise because the technological 'ways of seeing' utilized by planning tend to draw actors and entities only selectively into its governmental framework. However, planning is not only a technology of spatial management it is a political arena also. Planning decisions are made on the basis of political calculation and this too can result in very partial assessments of space being made. The upshot is that planning has considerable difficulty in 'representing' the complex and heterogeneous spaces in which it is inevitably immersed.



and exclusions illustrate some of the theoretical points raised in Chapter 4 above, notably the differing interactions between networks and their contexts of operation. It is suggested here that planning has always been open to some entities in its surrounding environment but closed to others. Over time the entities to be included and the entities to be excluded have changed. Thus, early in its development planning successfully incorporated physical entities; it then began to shift its gaze to social entities; finally, it began to look more closely heterogeneous entities. While it has yet to successfully engage with these latter planning 'objects', there is now a recognition in planning circles that heterogeneous complexity needs to be apprehended in some way.

The case of planning thus illustrates how networks interact differentially with their spatial contexts. It shows how the constitution of the network determines relations between 'inside' and 'outside', between processes of network consolidation and processes of spatial extension. However, planning is also interesting in the context of the present volume because it comprises a form of spatial governmentality, that is, it constitutes a form of 'applied geography' in which differing conceptualizations of space are brought to bear in governmental interventions aimed at regulating the land development process. In other words, planning 'performs' or 'enacts' spaces of differing kinds (Law and Urry, 2004). Because geographical ideas are invoked within these 'performances' and 'enactments', it is important to consider the spatial imaginaries at work. In particular, it is worth asking whether planning performs topographical or topological conceptions of space so that we can then assess the potential impact of these differing conceptions on patterns and processes of spatial development.

In order to explore the spatial imaginaries at work in planning, the chapter is divided into three main parts. In the first we briefly review the key ideas about space that have shaped planning policy and practice. We chart an evolution from 'physicalist' (or topographical) notions of space to more social (or topological) conceptions. In the second part, we move on to consider how topological conceptions of space come to be bound into political processes. The discussion here focuses on the relationship between rationality and power. In Foucaultian fashion, it shows how power relations inevitably encompass technologies of spatial representation. It is then suggested that while planning increasingly recognizes *social* and political topologies, it fails to adequately appreciate the *heterogeneous* multiplicities of topological space, that is, it remains caught in the 'social contract' referred to by Serres in the quotation provided above. This point is illustrated by a brief discussion of planning for sustainable development, where it is shown that, notwithstanding an obvious desire to engage more substantively with the non-human realm, planning remains deeply rooted in socio-economic processes. As a result, it is unable to engage fully and wholeheartedly with complex urban ecologies. In conclusion, the chapter sug-

specifies that politics must engage with 'collectives'. In these collectives humans and nonhumans co-exist in mutable and shifting relationships. Planning, if it is to play any kind of ecological role, must seek new ways of orchestrating such collectives so that complex and dynamic relations come to be sustained over time. Importantly, ecological orchestration requires key modifications in planning's relationship with space. These modifications are discussed in the concluding section of the chapter.

### Planning and the technological 'taming' of space

For much of its history, land-use planning has sought to manipulate Euclidean spatial entities. This is perhaps understandable if we consider that conscious and deliberate attempts to intervene in urban development extend back as far as Ancient Greece. Cliff Hague (2002: 2), in a review of plan-making through the ages, claims that Hippodamus of Miletus was 'the first town planner in Europe'. In Hague's view, Hippodamus, who 'was creating regular grid layouts as early as 450 BC' (2002: 2), contributed some seminal technical ideas to planning, including procedures for the orientation of buildings and streets, recognition of the need for regular supplies of fresh water, and an appreciation of the importance of drainage. These ideas, Hague argues, endured through to the Renaissance and beyond, and they shaped the development of many European cities (see also Mumford, 1961). In short, the planning of urban Europe was, to a considerable degree, influenced by the 'geometry' of early Greek urban designs.

Euclideanism evidently provides a theoretical underpinning to early forms of spatial planning. However, this ordered and orderly approach came under considerable pressure following the onset of the Industrial Revolution. During the eighteenth and nineteenth centuries, European towns and cities grew rapidly, with the consequence that economic and social processes appeared to outstrip any efforts at organization and control. Not surprisingly, calls were made in many newly industrializing countries for greater regulation of urban development, especially once diseases such as cholera began to cross over class lines to affect all urban dwellers. Despite these growing concerns, effective regulation of urban space only emerged onto the terrain of government in the latter half of the nineteenth century, as public health and other forms of welfare legislation were enacted in the UK and in other European states. This legislation initiated what Osbourne and Rose (1999: 738) call an 'urban will to government' and brought new forms of spatial ordering to the fore. In the UK, for instance, codes and standards were introduced to guide the development of buildings and streets during the 1870s. To implement these regulations, the country was divided into urban and rural districts under the jurisdiction of a

gradually gained an important role in facilitating the orderly development of rapidly growing urban areas. As Stephen Ward (1994: 2) puts it: 'before it was anything else, town planning was a series of radical ideas about changing and improving the city'.

Strategies of change and improvement could only be implemented, however, once planners and other city officials felt they had an understanding of the entity to be changed and improved. In short, planning's 'will to govern' became 'inseparable from the continuous activity of generating truths about the city' (Osbourne and Rose, 1999: 739). In turn, these truths could only emerge once 'mundane techniques of gathering, organisation, classification and publication of information' had been put in place (1999: 739). An especially significant new technique for generating 'truths' about the city was the urban map. As Patrick Joyce explains in reference to the UK, from the middle years of the nineteenth century an innovative set of mapping techniques allowed cities to be visualized in new ways:

[the Ordnance Survey] was in 1841 authorised by the Treasury to produce town plans [...] By 1892 urban Britain was mapped on a scale sufficient to show detail down to the size of a doorstep [...] These plans provided an unprecedented view of the city and its inhabitants. Perhaps a better term would be an unprecedented view *into* the city, for the model of vision here was the medical one of microscope, as well as the omniscient view of the surveyor. (2003: 52)

As Figure 6.1 demonstrates, the map served (in Latourian terms) as an 'immutable mobile', an inscription that translated space into diagrammatic form, thereby reducing spatial relations to a single sheet of paper. On this sheet of paper, the city would be made 'legible' – that is, it would become a place 'whose districts or landmarks or pathways are easily identifiable', because they had been 'easily grouped into an overall pattern' (Lynch, 1960: 5).

Yet, the process of rendering the city 'legible' necessarily gave rise to a very specific spatial order – that is, it held some things constant (notably, buildings and streets) and removed others from view (notably, the movement and fluidity of urban social interactions). Thus, in the map a very particular spatial formation began to emerge, as Joyce explains:

In the plan, space is delineated, reduced to the clarity of the line. This sharpened line demarcates spaces, so that buildings, streets and so on are differentiated, but this is with reference to a common rhetoric concerning legibility [...] All the elements are different (one dwelling is sharply different from another, to a degree that is striking and new) but all are composed of the same medium, that of an extreme form of geometrical space. In this form a 'functional equivalence' is taken to new heights, in terms of the interchangeability of standardised units. One thing is read in terms of another in ways that become ever more emphatic as the standard of measure becomes ever more standard. (2003: 54)



6.1 The gathering together of physical form in the Ordnance Survey (Source: Unwin, 1910)