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COMPLEX SPACES

Regions, cities and neighbourhoods in a complex world

Introduction

Social science's engagement with 'the spatial' has had an interesting history since the 1970s. The discipline of geography shifted from being primarily descriptive with tendencies towards quantitatively-founded positivist explanation, through a period in which the dominant perspectives derived from Althusserian structuralism and claimed to represent a 'new' critical geography, to one in which postmodernist accounts are now presented as a 'new' 'new' geography founded on the assertion of the impossibility of general accounts of any kind. Geography being geography, none of these schools has ever been abandoned. Positivist number crunching continues unabated and certain spatially-oriented journals are full of it yet. However, the face geography has presented to the other social sciences has, more or less, followed the trajectory described above. It can be summarised in the overlapping careers of David Harvey from positivist law seeker to structuralist 'Marxist', and Doreen Massey's movement from structuralist Marxism to her present endorsement of postmodernist approaches. This matters because geography has profoundly influenced the general approach of social science to space for two decades, not just (rather oddly, perhaps least) in terms of accounts of the nature of social space(s), but by setting the character of theoretical debate.

What is particularly interesting about this is that the shifting debate has changed its use of measurement without ever quite abandoning it. The positivist period saw statistical number crunching, especially in the form of factor analyses, thrown at data in order to generate entities for ordering in causal models. This still goes on, of course. The structuralist, and even

the postmodernist, approaches, whilst abandoning causal models, retained the use of quantitative descriptive indices as ways of describing social change and spatial variation in that change. This was reasonable enough in epistemological terms for the structuralists, but it has to be said that postmodernists who should in principle discount such modernist products as statistical indices, don't half rely on them for the general representation of the world as having changed. Raymond Williams has already told us why that should be in the epigraph to Chapter 3 of this book. There is just no other way of grasping our sort of world in its complexity, even at the level of basic description.

I want to start this chapter by thinking about the measurement of spaces and of changes of spaces and in spaces over time. Geography and the other disciplines involved in 'urban and regional studies' work to a considerable degree in terms of a nested hierarchy of spaces comprising the world, blocks/regions 1, nation states, regions2, localities and neighbourhoods. This is a relatively simple hierarchical structure. The only ambiguous level is the second, where the term 'block' is used to describe organised sub-world spaces, for example the European Union or the North American Free Trade Area, and the term region1 refers to sub-world but larger than nation states spaces defined primarily by spatial propinquity, for example the 'Mediterranean world'. Region2 here indicates sub-national but larger than local spatial units which in advanced industrial societies almost always have a clear administrative identity of some sort. The terms 'locality' and 'neighbourhood' will be unpicked subsequently.

What is interesting from a complexity position is that for spaces we have measurements over time. The measured account is certainly not simple. The actual spaces to which the measurements apply can shift boundaries, although there is an argument to be had about whether physical spatial reference matters all that much here.[1] This chapter will take the opportunity offered by the existence of this set of measurements and will suggest that thinking about what they are in relation to one of the central issues in contemporary spatial studies, that of socio-spatial differentiation, shows the utility of the complexity approach in urban and regional studies as a whole.

These debates are by no means merely academic. There is a clear relationship between the forms of urban and regional policy and the character of academic understanding in these fields. Graham's (1992) account of the way in which 'regulation theory' in particular has informed the abandonment of any commitment to transformational social reform at the urban level, and led to a pessimistic endorsement of mere tendential

modification, is wholly convincing. Chapter 8 of the thesis is exactly concerned with these sorts of issues of urban governance.

The hierarchy of spaces

The key word in contemporary spatial studies is 'globalisation'. The essential content of this idea seems correct. It describes a situation in which the world system which Wallerstein identifies as coming into being with the development of the seaborne European empires of the sixteenth century has become so generalised that all aspects of economic, and consequently social, life are interconnected on a global scale. It can certainly be argued that globalisation has not been a steady or indeed always forward moving process. The world of 1914 was probably more globalised than that of 1949, given the impossibility of free movement of capital into the Soviet bloc and China at the later date. Even within the West, the capacity of governments to regulate capital transfers remained significant from the First World War until the early 1980s. However, it now is true to say that finance capital is free in space in the very short term and industrial capital has much the same spatial mobility in the medium term, the length of which medium term is determined by the depreciation period of fixed capital assets.

Just as the productive capital assets of the system are spatially free, so are the products to be consumed, whether material or cultural. In their two books *The End of Organised Capitalism* (1987) and *The Economies of Signs and Space* (1994), Lash and Urry describe these developments. We have global consumption and a global culture. Urban theory has paid particular attention to 'world cities', i.e. to those cities which seem to function as key command and control centres within this global system and in which the virtual world of financial capital actually touches the earth in the form of the physical presence of the three key financial markets of Tokyo, New York and London. However, there is a real sense in which all cities and places are world cities and places, that is to say they are best understood in terms of their position within a world system, rather than in any spatial system constructed on a smaller scale.

It is possible to argue that this account is somewhat over-stated. The development of the European Community and of the North American Free Trade Area has involved the political construction of economic blocs which are quite big enough to be actors on a world scale. Much of world trade in commodities, as opposed to finance, is quite short distance and region1 centred. In the discussion of 'world cities' this is recognised by the specification of a first division below the premier league, including cities like Los Angeles, Miami, Hong Kong and Shanghai which mediate

relations between regions and the world system. What is increasingly redundant in this formulation is of course the nation state which is subsumed into the bloc (or, as in the case of the federal US, subsumes other nation states, especially Canada, to it).

The next level down, region2, does have considerable significance. This sub-national level seems to be crucial for the effective sub-bloc organisation of the co-ordination of production and reproduction for a crucial level of enterprises and for policies relating to the organisation of space and the provision of trained labour. This is well recognised by the European Union with its commitment to a Europe of the regions rather than of the nations.[2]

Below the region2 level is that of the locality. This is a term which became very fashionable in spatial studies in the late 1980s and there is an extensive literature dealing with it (see Urry 1988; Duncan 1986). The term was developed to replace the astructural usage of 'community' as employed by the 1960s community studies of local social systems. The term is intrinsically, and usually explicitly, realist. Bagguley *et al.* assert that: 'the locality study as a *method* [original emphasis] has arisen from the attempt to address the complexity of spatially intersecting causal processes' (1990: 8). They develop their argument thus:

> We derive our sense of the local from a realist perspective, by paying attention to the *spatial ranges* [original emphasis] of the many causal elements that impinge on any chosen area. . . . All of these overlie each other and can enter into substantive relationships where they overlap, involving sometimes the same and sometimes different collections of individuals and other subjects. Social reality from this perspective, is made up of the totality of these significant inter-relationships over space.
>
> (Bagguley *et al.* 1990: 10)

Cochrane has developed the useful idea of 'micro-structuralism' as a way of identifying the core content of the notion of locality:

> The distinction between necessary and contingent relations which is so important to realism has been presented as a means of acknowledging the uniqueness of different places, without giving up the idea that their development also reflects general processes.
>
> (Cochrane 1987: 354)

This can be taken somewhat further. Duncan distinguishes between spatial differences which are mere spatial variation (a passive contingency effect) and another level at which:

> Over and above this contingency effect, causal effects may be locally derived. This is our second level. Furthermore a combination of these may create what can be called a 'locality' effect. The sum of locality derived causes is greater than the parts. In both these cases, our second and third levels of socio-spatial interaction, local variations are active in the sense of causally producing outcomes rather than just contingently affecting them.
>
> (Duncan 1986: 28)

The use of the word 'interaction' here is highly indicative. We are dealing with emergent properties of a system which can change. The level of region2 has been discussed in essentially similar terms, with the range of the two usually operationally distinguished in terms of level of economic integration. In other words, localities are usually operationalised in terms of local labour markets and regions in terms of aggregates of local labour markets which combine some socio-historical identity with being of an appropriate size for the essentially corporatist co-ordination of production and reproduction. It is very important to note the resonance between the usage of the term 'locality' by geographers and its usage by mathematicians interested in non-linear systems. The burden of Chapter 3's presentation of the mathematical accounts was precisely that general laws were not achievable, that what mattered was the local account.

Localities and regions are important in themselves and in policy terms. In other words they are real entities and they are the objects of active interventions by policy makers seeking to position them within the hierarchies of statuses available for each level on a world or smaller scale. Positioning policy is the crucial role of much of contemporary urban governance, at least of those aspects of governance which are in any way innovative as opposed to routinised continuation of existing reproductive policies.

'Neighbourhood' is simply the term I have chosen to use for the smallest significant socio-spatial scale. For me this is not described by function. Indeed, those parts of urban space which are not primarily residential lie outside the scheme of neighbourhoods. Neighbourhoods are the places where people of the same sort, in our world people sorted essentially by class but also by race/ethnicity, and to a much lesser degree by lifestyle,[3] all of which operate in a complex way, reside. This is the terrain of urban ecology, the baby thrown out with the bath water of

Chicago School Spencerian social Darwinist determination of internal urban structure by Castells (1977). Although the term 'social ecology' is so taboo and polluting as to be almost never used, it is of course the basis of the contemporary and very proper interest in social polarisation in the 'divided city' and is integral to discussions of the development of a so-called 'underclass'[4] in advanced capitalist societies.

The hierarchy of spaces outlined above constitutes a set of nested systems each down from the world system, containing elements made up of the level below it. It may be that the bloc/region2 level, and is almost certainly the case that the nation state level, are dissolving systems, leaving a world system of regions, which in turn constitute systems of localities, which in turn constitute systems of neighbourhoods. Indeed, in the case of true world cities the locality and region2 levels may be identical. However, the systemic account still holds even in this more simplified form.

Here is where the measurements matter so much. We have measurements which describe the whole systems at any level and measurements which describe the sub-systems in terms of their position within the whole systems. We can think of the systems both as phase/condition spaces and as single entities. As an example of the latter we might consider the possible attractor states for the world system of Fordism and post-Fordism. We can see the hierarchy of positions for regions within the world system as representing a set of possible attractor states within a phase space constituted by the world system in its present form. Neighbourhoods within localities are entities within the phase space of localities which in turn are entities within the phase space of regions.

Local complexity – the 'locality'

The most systematic debate about the nature of space in recent years has focused on the level of locality. An extreme position in this is represented by Warf (1993) who seizes on the contextuality of the local as an essential component of any postmodernist account. In doing so he ignores completely the point about micro-structuralism made by Cochrane (1987) and seeks to assert the unique significance of the local against the kind of universalist political economy meta-narrative he identifies with the work of, for example, David Harvey. He constructs his argument around a prescription of the four essential elements of the general postmodernist account (which despite its generality cannot be considered, of course, to constitute any sort of meta-narrative at all). These are:

> *Complexity* [original emphasis] – the explicit recognition that general metanarratives (including Marxism) have largely failed

> to capture the enormous variation within and among social formations . . . postmodern explanation rejects the assumption that explanation consists of showing particular events to be outcomes of wider processes.
>
> *Contextuality* [original emphasis] – the reassertion of time and space into social theory (and an end of the primacy of time over space). Postmodern geography asserts that when and where things happen is central to *how* [original emphasis] they happen. Thus theory must acknowledge not only that knowledge is historically specific, but geographically specific as well, i.e. explanation must be tailored to the unique characteristics of places.
>
> *Contingency* [original emphasis] – the stress upon intentionality and human consciousness. . . . Rejecting teleological explanation, postmodern geography posits that landscapes are fashioned through conscious human agents circumscribed within a finite, ever changing set of constraints. Such an approach accepts that history and geography could always be 'otherwise', i.e. that the present is by no means guaranteed by the past; *thus to know a society and a geography is to know how it could be different than it is* [original emphasis].[5]
>
> *Criticality* [original emphasis] – the linkages between knowledge and power, the acknowledgement that every explanation is simultaneously a legitimation of a vested interest.
>
> (Warf 1993: 166)[6]

It is important to note that Warf identifies the last as constituting an emancipatory principle in social science, although as he construes it, it cannot of course constitute a valid general emancipatory principle. Criticality is certainly important but it will perhaps be more useful if there is indeed some way in which its generality might be established. Here I want to suggest how, with an expansion of the notion of complexity (i.e. an assertion of the meaning given generally to that word in this book), a rejection of the absolute notion of contextuality, which nonetheless allows for the significance of the local, and a restating of the principle of contingency (à la Warf) in terms of the rather old-fashioned formulation that people make history, but not in circumstances of their own choosing, we might establish the basis for an emancipatory project which might actually work. Indeed, my specification of contingency goes further here. Warf's understanding of this term is essentially the same as Gould's as

discussed in Chapter 2. From a chaos/complexity-informed position it is certainly important to consider always how something could be other than it is, but it cannot be anything at all. Rather there are a limited set of possibilities constructed beyond bifurcation points. There is a range of others but not an infinity of others.

Let me focus on the idea of contextuality. Warf, in contrast with Cochrane's conception of the micro-structural character of locality, specifies the absolute uniqueness of each local context. He goes so far as to assert that: 'A postmodernist geography, structured epistemologically around the four sets of issues articulated above, recognises . . . that a theory of poverty in New York is fundamentally different from a theory of poverty in London' (1993: 167). Short's comment on this is worth quoting:

> This may be a rhetorical flourish. . . . But if he actually believes this and this represents a more general trend then I am worried. I can accept that poverty is different in different countries and different cities, the experience varies by time and place and person. General discussions of poverty need to be aware of such differences. But if we are going to try to generate fundamentally different theories about poverty in two capitalist cities then perhaps we need to redefine the word 'theory'.
>
> (Short 1994: 170)

Short's position is exactly equivalent to Cochrane's on microstructuralism. Let us get a complexity fix on all of this by considering Teesside in the northeast of England. This industrial estuarine conurbation is a good example both because it constitutes a locality[7] and because there is a unique time series household-based data set describing the trajectory of forms of households within it from 1977 to 1995. Cleveland is located in the northern region of England which is a rather clear example of a region2. Within that region it is not the regional capital but rather an industrially specialised zone which serves as a sub-regional capital for retail and administrative functions. In turn the north of England is within the nation state of the UK, which is within the bloc of the European Union (although currently relatively immune from EU social policy forms), which is in a world system characterised by globalisation. That term stands for the relative freedom of capital in space and the hegemony of liberal free market ideology in political prescription. There is a direct and strong politico-economic link between it and the policy regimes of the UK state which is in turn rather directly transmitted to both the regional and locality levels, given that the former in the UK is run by civil servants in a prefectorial style and that the scope for autonomy at the latter has been

enormously eroded through central financial control and the transfer of key areas of service and development activity from elected representatives to centrally appointed quangos.

Subsequently I want actually to go below the locality level and consider the case of East Middlesbrough, a neighbourhood which was the product of post-war left Keynesian housing policies and urban planning (see Byrne 1995b). Let us review the series of levels which operate here and see how they inter-relate. At the global level we can see how tendencies in the general organisation of capitalist production (technologically achieved massive increase in labour productivity) and the spatial reorientation of much basic department I (capital) goods production as part of the new international division of labour, have caused (a deliberate usage) the deindustrialisation of the Teesside area. In 1971 the locality contained 234,000 jobs, of which 58 per cent were industrial. In 1991 the locality contained 202,000 jobs, of which 40 per cent were industrial (see Byrne 1995b: 100). Over those twenty years, 54,000 industrial jobs were lost. This transition reflected both global changes, and the policy regime and general incompetence of UK national government over the period. Of particular national significance was the combination of high exchange rates in the early 1980s with both denationalisation and legislative weakening of the capacity of workers to defend themselves at the point of production (see Beynon *et al.* 1994 for an account of industrial changes in Teesside). However, these industrial changes do not constitute the whole of the national effect. Of just as much significance was the fiscal/social security policy of national government which massively reduced taxes on higher incomes and massively (in relative, if not absolute terms) reduced benefits paid to the poorest. It is the interactive effects among the factors of deindustrialisation and consequent job insecurity, low income substitution benefits, and high incomes for the secure owners and the higher service class which constitute the causal influence of national policies (see Byrne 1997b).

The significant locality level factor was the planning regime directed at consumption-oriented land development (see Byrne 1994 for a full account). This prioritised 'exclusive' schemes and channelled public resources towards a system of 'catalytic planning' which was supposed to stimulate a land market dependent on consumption by the beneficiaries of the Thatcher years. This project has been almost wholly unsuccessful in terms of its formal objectives, but distracted both political energies and funds from almost all other policy initiatives which might have addressed the social consequences of deindustrialisation. The effective operations of

the region2 level over the period under review have simply been in support of this general programme of urban redevelopment.

We can measure the changes at all the spatial levels thus far defined. We can see changes in the state of the global system in terms of employment and production levels and patterns of trade and consumption. These change over time. We can see changes in the national level, particularly in terms of real levels of non-employment among men of working age and in relation to patterns of inequality in household incomes. Again these change over time. The global system constitutes a condition or phase space within which the nation state is located. During the period under review we can see the UK as being drawn towards a new form of 'welfare regime' (see Esping-Andersen 1990) which can be understood as one of the available attractor states for national economic and social polities. Of course the initial circumstances of the UK might well be considered to have predisposed it towards that attractor basin, but the historically contingent event of the Falklands War, coupled with actions of the establishers of the SDP who split the Labour Party at a crucial time, were at the very least significant political perturbations. This was robust chaos and here it is really quite possible to follow Warf's dictum and 'know how the society could be different than [sic] it is'. Here the meaning of 'how' is twofold. We can see what the different form might be – Sweden with a bit of luck and the wind in the right direction – and how that could have been got to – by a Labour victory in the 1983 election with the wind in the left's sails. There was another way to be.

What is interesting in the UK context is the way in which national government used the power of parliamentary sovereignty to limit the range of possible attractor states for localities in a very definite fashion. The elimination of local financial autonomy and the actual abolition of any subsidiary level which seemed to offer any kind of focus for resistance[8] meant that alternative local strategies could not be attempted. Urban governments were forced to go along with the catalytic planning approach embodied in the establishment of Urban Development Corporations (see Imrie and Thomas 1993) and generalised through the competitive scheme mechanisms of 'City Challenge' and 'the Single Regeneration Budget'. The only policy form that could be pursued was driven by the efforts to recreate an inner urban land market. This was justified ideologically by the continued assertion that more regulatory planning regimes had failed because they 'attempted to buck the market'. The general ineffectiveness of the consequent efforts at diverting land markets from their attraction for retail development to the edge city and for expensive residential development to the non-urban, demonstrates that bucking the market may

have had its limitations, but they were considerably less than those involved in trying to fiddle it. The centrally determined policy regime eliminated the real other attractor, the just city, as a possibility. The attractor of the working market city just didn't exist. What we got was the unjust cocked-up city.

The emphasis here on the significance of relationships among the levels of the nested systems is of great importance. If it were not for these relations then Warf's account of the uniqueness of the local would stand – it would be exactly analogous to non-linear mathematics' insistence on the examination of local characteristics at bifurcation points. This remains crucial of course, but it is not enough. The real systems with which we are dealing are not isolated from other systems. They exist within them, are influenced by them, *and* influence them. The relationships are real and reflexive.

Let us look at the system characteristics of Teesside. One key variable here might be the proportion of adult males of working age who have been involuntarily displaced from being in full-time work. The definition suggested in the previous sentence is deliberate. It is not simply a matter of unemployment. There are two other possible statuses which can describe non-employed men of working age. The first is that they might be students. There has been an enormous growth in continuation in full-time education beyond the age of 16 (the minimum legal age for full-time work) in the UK. Of course part of this is certainly because people can't get jobs so they go for qualifications. However, I propose to treat this element as voluntary. The other element is the massive growth in the numbers of men of working age who self-classify themselves as 'permanently sick'. To a very considerable degree this is a product of the operation of benefit regulations during the 1980s and early 1990s when it was much better for a long term unemployed man to achieve the less regulated and better remunerated status of being in receipt of invalidity benefit rather than some form of unemployment benefit. Officials were encouraged to support such transitions as a way of reducing unemployment totals. Recent changes in benefit administration may well eliminate this, but over the period under consideration it is quite appropriate to treat the 'permanently sick' as really another component of the involuntarily unemployed.

Between 1971 and 1991 the number of men recording themselves on a census return as either unemployed or permanently sick on Teesside increased from 19,000 to 47,000. As a percentage of the adult male population this represented an increase from 10 per cent of the total of adult males of working age and not students involuntarily unemployed, to 30 per cent. This is exactly the Feigenbaum number, a change in a controlling

parameter of three times, which suggests that a torus pattern of system states will become transformed into a butterfly attractor pattern. In Byrne (1997a) I have developed this account of both Teesside[9] and the Leicester urban area, and argued that it was this key control parameter shift which led to the development of both as 'divided cities' characterised by a high degree of internal social differentiation into two sets of affluent and deprived neighbourhoods. In this formulation the locality is seen as the phase space containing the neighbourhoods, but we can also regard the 'divided city' as a new attractor state in the phase space containing localities themselves

The most convenient tool for classificatory description here is the use of cluster analytical procedures at different time points. Given the existence of small area statistics sets for successive population censuses this is quite an easy thing to do (see Byrne 1989, 1995b and 1997 for examples). Essentially such analyses support an account of the polarisation of city space with the transition from a Fordist system based on full employment in an industrial system, to a post-Fordist one in which there is a re-creation of employment insecurity and a massive reduction both absolutely and relatively in industrial employment. We can see the city as coming to be a phase space in which neighbourhoods are located in one or the other of the wings of the butterfly. It is possible for neighbourhoods to shift position. This is the process of gentrification, most recently and systematically discussed by Smith (1996). Clearly the catalytic planning strategies attempted in Teesside were efforts at achieving gentrification. However, despite enormous energy inputs in the form of grant aid and the delivery of land to developers at negative costs (see Byrne 1994), this was not enough to achieve significant gentrification of these locales. Rather more common has been the transition to lower status which has characterised even formerly securely middle-class areas of West Newcastle, possibly the most disorganised social space in the whole of the UK. In the UK this is class mediated. In the penultimate section of this chapter I want to consider, using US examples, the role of ethnicity as a controlling parameter in urban systems. Before doing that let us turn to the last element in the urban system, the individual household.

Households as social atoms – the statistical mechanics of the urban system

The general complex account of social space presented in this chapter has at its core the notion that the successive spatial levels constitute the phase spaces of the levels below them. This stops with individual households, the significant social unit in which we spend our lives outside

of work. All operational definitions of households centre on a combination of pooled consumption and shared residence. Household membership defines our class in Weberian terms since it is the resource base of the household which limits our capacity to consume[10] and residence fixes us in social space. However, we can move in space, either with our household or from it. Such movements require large energy inputs, but these are achievable. The divorced woman whose house is repossessed because of mortgage defaults by a departing husband, can easily pass down the system with her children. Very good academic achievement can bring a young adult up (although the schools they attend are not likely to be of much help here – see Byrne and Rogers 1996). A single parent can get a new partner and move from a household dependent on state benefits to one with one and a half wages, which can be enough to achieve movement into reasonable cheap owner-occupied housing. It is clear that these sorts of transitions can only really be mapped by a household panel study on the lines of the British Household Panel Study. However, even this has limitations, notably in terms of its spatial content. For anonymising reasons, and because the study is nationally founded, it is difficult, not to say impossible, to locate the households within their local social spaces at the times at which their measurements were taken. Regrettably, the Cleveland Social Survey abandoned its panel element very early on, so there is no local mapping of actual transitions directly available from it. It may prove possible to reconstruct earlier locations of people and their households from this data set but this is work for the future.

However, let us imagine that we did have a local panel study covering the period 1977 to 1995 (we should be so lucky). What this would enable us to do would be to plot the movements of households, and the new households which stemmed from them, over time and through social space, remembering of course that the character of social space itself might be changing in a non-linear way. We could see in some detail what exactly was associated with socio-spatial mobility. Of course, people would move to other localities, but, provided we knew their new addresses, we could locate them readily within the neighbourhood system of that new local phase space. In effect we would have an (almost certainly sample-based) account of the movement of social atoms within a social system. This would enable us to see the actual historical development of the system as it occurred and to map out the way households and people moved through it in the course of their lives.

This is all closely related to the criticisms of the general character of the quantitative programme in sociology which formed the substance of the previous two chapters. Essentially much of that criticism centred on the

individualistic orientation of quantitative sociology. Enormous effort has been devoted to modelling how some person or household ended up in a given situation, without much thought being given to what produced the set of possible situations which there were to end up in. Given a data set of the kind described above, coupled with the system describing measures available from censuses of population and employment and a range of other descriptors of changes in the condition of the locality,[11] we can see both what the changing shape of the phase space is in terms of possible attractor sets, and what it is about changes in people's lives which facilitates their movement among that changing set of attractors over time.

Let us consider the case of East Middlesbrough. This large neighbourhood was the product of deliberate planning during and at the end of the Second World War. It represented a real social democratic commitment to the elimination of social and spatial inequalities. In an informative report researchers from the Centre for Environmental Studies (CES) concluded that:

> The pioneering 1946 Max Lock plan set out a very ambitious thirty year programme which involved the relocation of 50,000 people and heroically aimed at 'pulling together' the town which was at that time regarded as socially fragmented. Ironically; the thirty year building programme of East Middlesbrough's eleven neighbourhood estates put even more physical and social distance between East Middlesbrough's working class population and the rest of the town.
>
> (CES 1985: 1)

That statement is descriptively accurate and analytically inaccurate. In other words, as of 1985 it describes the situation pretty well exactly, but the actual planning and construction programme did not generate that situation – it did not 'put' it there. Rather, in the early 1970s, by which time the East Middlesbrough development was essentially complete, there was not a massive social distance between the people who lived there and the rest of the town. By the early 1990s, in the divided city of Teesside, there was. This is very easily illustrated by a comparison of social division on Teesside in 1977 with social division in 1991 (see Byrne 1995a). In 1977 just 10 per cent of Cleveland's households which contained dependent children were in a deprived category, when a cluster analysis was used to differentiate between deprived and non-deprived. By 1991, 30 per cent of such households were in this deprived category. In 1977 most deprived households were headed by a female single parent. In 1991 most were male headed, although most female headed households remained deprived. In

1977 a third of East Middlesbrough households were deprived. In 1991 two thirds were.

Clearly East Middlesbrough was less affluent than most parts of Cleveland in 1977 but most households resident there were not poor. By 1991 the area was essentially characterised by deprivation. That reflected the locality's phase space change from a Fordist torus to a post-Fordist, post-industrial butterfly. What would be really interesting would be to explore the trajectory of households into and out of East Middlesbrough as well as the change in the situation of the neighbourhood within a changing locality, within a changing region2, within a changing nation state, within a changing bloc, within a changing world. There were certainly specific locality, and even neighbourhood, effects which set the situation for East Middlesbrough, but the general global context mattered too. It was interactions among globalisation, national policy shifts, local planning and development, and neighbourhood factors, which created the present situation of that place. When we come to the household level, the socio-spatial atoms, then we add in household factors as well, and all the interactions at and among these levels. That is what sets up the statistical mechanics of social space.

The US – race as an additional controlling parameter

The internal spatial ecology of cities in the United States is more complex than that of the UK because of the crucial role of 'race', and specifically of black American status, in constructing it. There is now good evidence from the 1991 census that the UK does not have ethnically constructed ghettos in any meaningful sense of that word (see Peach 1996b), but the situation in the US is one marked by: 'the unique segregation of black Americans . . . and the deleterious consequences they suffered as a result of this spatial isolation' (Massey and Denton 1993: viii).

Massey and Denton remark that:

> although we share William Julius Wilson's view that the structural transformation of the economy played a crucial role in creating the urban underclass in the 1970s, we argue that what made it disproportionately a *black* [original emphasis] underclass was racial segregation.
>
> (Massey and Denton 1993: 136–7)

Massey and Denton's book summarises a very large number of studies and uses census-derived materials to explore the extent of racial segregation in US cities. They note both that this has changed very little over the twentieth

century and that the black middle class is segregated much more from its white equivalent than it is from the black poor.

There are three aspects to this from a complex systems view of the city. The first relates to the character of the city as a phase system of neighbourhoods. The residential space of UK cities can be understood essentially in class terms. That of US cities must also take account of race. Here what is being called the city might better be described as the urban area. The phenomenon of white flight has rendered many urban area cores primarily black, but the locality is properly considered as including both the city and its suburban catchment area.[12] In seeking to understand the patterning of US residential space, race is as important as class.

The second aspect relates to the actual transformation process of US residential neighbourhoods by realtors as block busters. Lemann (1991) notes the inability of Saul Alinsky and progressive elements in 1960s Chicago to create an ethnically mixed lower-middle-/upper-working-class neighbourhood in the city. Instead, the entry of black families led to the area becoming overwhelmingly black, by a process that could be mathematically modelled in terms of catastrophe theory. In the UK the ethnically mixed suburban area is a perfectly possible attractor. In the US it is not.

This absence of the ethnically mixed middle-class neighbourhood as a possible spatial attractor is crucial for the actual life trajectories of US black households. Black people can achieve some social mobility but it is very difficult for them to isolate their children from the disabling characteristics of ghetto experience. White middle-class children attend good public (in the real US sense) schools which contain very few children who are failing and who express deviant value systems. Black middle-class children are far more likely to be in schools which draw on areas of severe social deprivation.

The reasons for this saliency of race for black Americans, in marked contrast to all other ethnic groups in the US, including Hispanics in the main, but not those Puerto Ricans who are regarded by US whites as black, clearly lies in the cultural forms that became associated with the validation of chattel slavery before emancipation, and with racially-based exclusion from citizenship alongside economic domination, in the subsequent reconstruction system founded on sharecropping.

Morenoff and Tienda (1997) have recently reported the results of a very interesting study of the temporal dynamics in Chicago. This study is interesting both in terms of method and of substantive findings. The method used was precisely a time-ordered set of cluster analyses of the kind which it was suggested in Chapter 3 should be used as a way of

exploring the history of dynamic qualitative change. The resulting account is one of considerable social polarisation. In particular transitional working-class neighbourhoods, which comprised 45 per cent of all census tracts in 1970, formed only 14 per cent of such tracts in 1990 (Morenoff and Tienda 1997: 67). Of considerable interest also is the way in which Hispanic immigration has modified the social ecology of Chicago with concentration of Hispanics leading to the transition of many stable middle-class neighbourhoods to the transitional working-class category. In Chicago 'underclass' neighbourhoods were overwhelmingly (90 per cent on average) black.

Ethnicity and its history is enormously important for the socio-spatial form of US cities but recent developments in the strategies of capital have also played a role which has occurred to a lesser degree in UK cities. Fitch (1993) provides a fascinating account of the 'Assassination of New York' which describes how the FIRE (Finance, Insurance and Real Estate) complex manipulated the urban planning system from the 1920s onwards in order to change designated land uses as a way of extracting more value from sites. What happened was that agency, much of it perpetrated by the Rockefeller family,[13] reconstructed the character of the whole urban space so as to preclude much industrial employment being possible. In the case of New York a complex and diversified employment system was actually simplified so as to exclude that part of it which generated decent blue collar incomes. This is of great significance in explaining New York's particularly high levels of real unemployment, which differentially affects black people.

I have argued before that the racialisation of 'the underclass' represents a process of assignation rather than something which is inherent in the urban system. What this means is that the processes of deindustrialisation, which as Fitch so convincingly demonstrates must be understood in local as well as global terms, create a series of positions. Ethnicity can function as a basis on which people are then assigned to those positions but processes of ethnic domination do not create them in the first place. Their origins lie with actions originating in relation to the systems of production and circulation.

It seems to me that this argument is essentially correct for the UK, but that in societies where ethnic domination is or has been integral to economic exploitation, then ethnicity has a determinant effect, in a complex and contingent form of course, of its own. The obvious example of such a system was apartheid-era South Africa where its spatial form in residential terms was ensured by the operation of the Group Areas Act. In the northern United States the cultural expressions of a uniquely

exclusionary racism continue to be of enormous significance. It should prove possible to model the historical development of residential racial and class segregation in US cities through a process of quantitative historical exploration. This issue of the 'underclass' and its spatial constitution will be looked at again in Chapter 8.