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Structure, system, and contradiction in the capitalist space economy

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Abstract. A theoretical approach to analysing the capitalist space economy is presented and is applied to the analysis of local economies. Capitalist society itself creates a distinction between 'structures', embodying necessary social relations and processes, and 'systems', which articulate contingent, external relations, in particular market relations. The development of structures from abstract to concrete forms incorporates space as spatial differentiation and as spatial logic. A specifically Marxist conception of competition in space is developed. On this basis, there is a discussion of the different meanings of 'local', the competition and coherence of local economies, and types of contradiction of different spatiality experienced by local economies.

1 Introduction

During the 1980s, in theoretical work on the relation of space to the capitalist economy (Gottdiener, 1985; 1987; Gregory and Urry, 1985; Harvey, 1982; Massey, 1984; Sayer, 1982; Smith, 1984) it was argued, contrary to the dominant view of radical work in the 1970s (for example, NCDP, 1979), that the spatiality of the economy is not merely a mystification, or passive reflection, of social relations, but actively enters into their construction (Massey, 1985). However, the way in which it does so remains controversial. In this article I present an approach to understanding the relation of capitalism to space which is distinctive in a number of ways.

First, I develop a distinction between 'structure' and 'system', which organise necessary and contingent social-spatial relations, respectively. These conceptions of structure and system are not purely philosophical but are 'determinate abstractions' founded in the nature of the capitalist mode of production itself (Gunn, 1989). Second, against a view influential in radical spatial theory, I argue that one can speak of 'logics of capital', and in particular 'spatial logics of capital', providing that the relation between the necessary and the contingent is properly understood.

Third, my account is focused strongly on the analysis of logical contradictions of the space economy. The use of (spatial) logics of capital, if understood as *contradictory* logic, does not lead to a neglect of the empirical variety of space economy but on the contrary plays a major role in constructing it. I argue that there are two different types of contradiction of spatial structures and systems. These contradictions are politically as well as theoretically important. Social structures are reproduced through conscious action; contradictions break open the social structures, pose choices, and allow consciousness not merely to reproduce but to change those structures.

Fourth, recent radical work in geography, in characteristically postmodern fashion, has emphasised spatial difference and variety. I argue that these arise not merely

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from contingent differences and complex combinations of structures, but also from contradictions in structures and from structures with an intrinsic spatial logic. This is politically important in showing the common structures which not merely 'underly' but *produce* difference.

Fifth, I apply this approach to develop a systematic theorisation of the logic of local economies, which are currently the subject of much political and academic interest. This enables one to specify the senses in which a local economy, its competition with other localities, and its forms of disruption are 'local', external, or actually aspatial. This is relevant to the forms and geography of social action which can address the problems of local economies.

My argument is not only within radical theory, but also criticises the conceptions of spatiality in mainstream approaches to economic geography. The level of abstraction in this paper is the capitalist mode of production as such; I am therefore concerned with the specificity of the capitalist use of space as compared with other modes of production (Burawoy, 1985, pages 26-29).

I first introduce a notion of '*structure*' and argue that it provides the central thread for linking analysis at different spatial levels of economies (section 2). I argue that structures may be developed from the abstract to the concrete, implicating space in two modes: a development from ubiquitous to spatially specific structures (section 3), and from aspatial structures to 'spatial structures' whose logic involves space (section 4). Whereas necessary relations are represented by structures, contingent interactions, in particular market exchanges, are organised within *systems* (section 5). I argue that competition in space needs to be conceptualised not merely as a market-systems relation but as a dialectic of system and structure (section 6). As well as constituting systems, local economies are structures by virtue of certain 'spatial structures' which give them coherence; but these are contradictory in that they disrupt as well as sustain accumulation (section 7). The distinction and the dialectic between structure and system enable us to understand the different modes in which space enters into the competition between localities (section 8), and to specify two different types of spatial contradiction (section 9). In section 10, I explore the way in which these types of contradiction result in disruptions to local economies, and the senses in which these disruptions are internal to localities.

2 Structures

The problem of the local economy presents itself as a problem of the relation of an economic part to the economic whole: of the local to the national or international economy, and of local firms and workers to the local economy. This relation of the part to the whole is sharply different in Marxist theory from what it is in the dominant theories used in economic geography, namely neoclassical, Keynesian, and systems theory. For concreteness, let us consider the relation of *the firm* to the economy as a whole. In non-Marxist approaches, the firm is seen as constituted independently of, and prior to, the economy as a whole. The firm is conceived as a self-sufficient thing-in-itself, before it enters into relations with other firms. Thus in neoclassical theory, the only characteristic of the entrepreneur, whose choices define the firm, is a wish to maximise money revenue; this wish is axiomatic and sui generis: it does not derive from any *social* (and thus economy-wide) processes. In particular, this nature of firms is specified quite separately from their mutual interactions through markets. In Keynesian theory, the aims and subjectivity of entrepreneurs and investors are more varied and more complex than in neoclassical theory. But Keynesianism does not provide any systematic theory of how these aims are constructed (the appeal to 'animal spirits' is characteristic). In systems

theory, the firm is pictured as interacting with its 'environment' (Hayter and Watts, 1983; McLoughlin, 1969). The nature of firm and environment can each be 'written in' in whatever way the theorist chooses; systems theorists regard this theoretical 'flexibility' as a major advantage of their approach over others (McLoughlin, 1969). But the result is, again, that the natures of the firm and the economic whole are independent, and are given prior to their 'interaction'.

In contrast, in Marxist theory the nature of the firm is given by the same set of logically related social relations and social processes—which I shall call *structures*—as those that define the economy as a whole. The core structure playing this role is the capital-labour relation (CLR). At the highest level of abstraction, this relation consists in the ownership and control of the means of production by capital, the worker's right to dispose freely of her or his own labour power on the market, capital's right and ability to control the consumption of that labour power once purchased, and the fetishistic compulsion of capital to use this control to extract the maximum surplus labour (Marx, 1974). These sets of practices and powers are logically linked, and together construct a relation between capital and labour both in the market for labour power and within the labour process.[1] This structure defines the nature of capital and of labour 'in general'. Conversely, capital and labour enter into this relation not contingently, but necessarily, by virtue of their nature. We already see here a crucial difference in method from the mainstream approaches considered above: the nature of the parts (here capital and labour) and their 'interaction' are not given independently but are constructed simultaneously (Ollman, 1971, pages 26-44).

If we now move to a more concrete level, capital and labour exist not 'in general' but as individual capitals and individual workers. The set of practices and powers just mentioned which construct the CLR is necessarily society-wide, to the extent that it involves the monopoly of ownership of the means of production by capital, and the establishment of certain property rights which require a society-wide guarantee. But this relation also reproduces itself at the individual level. Individual capitals are required *by their nature* to purchase and consume productively labour power, and individual workers are required *by their nature* to sell their labour power for a period to some capital and during that period to submit to the direction of that capital. And conversely, if an employer succeeds in purchasing labour power and submitting it to his or her direction then this relation constitutes the employer as capital and the seller of labour power as a worker. The CLR, then, exists not only at the level of the economy as a whole but at the level of the individual firm. Thus the firm and the economy as a whole are not separately constituted and then brought into interaction, but are rather both constructed by a single structure. This *congruence* between part and whole is a consequence of the *necessity* of the relation between capital and labour, which imposes itself at both the society and the individual level.

This gives us a powerful starting point for considering the relations between different spatial scales of the economy: workplaces, firms, and local, national, and international economies can be at least partly constructed by the same structure. To this extent, these spatial levels are not merely externally related but are *congruent* with each other.

[1] The 'Left Keynesian' or Kaleckian approach (for example, Clark et al, 1986) is focused on the first of these relations but the second is neglected. Now, the relation of capital and labour within production is wholly internal to the CLR, whereas their relation in the market in labour power is partly external to it, in that it involves structures and systems of reproduction. In neglecting the CLR within production this approach therefore makes a weak connection between the natures of capital and labour and their relation.

I have used the example of the CLR. This is not, however, the only structure which spans different spatial scales. At the highest level of abstraction there are two other key structures: the relations of reproduction of labour power and of the labourer, centred in the organisation of domestic labour; and the accumulation of capital, leading to the tendencies towards overaccumulation and devalorisation. These three core structures are themselves logically related, even outgrowths of each other (Ollman, 1971, pages 22-25). In their 'development' (Ollman, 1971, pages 65-67), each of these structures becomes further elaborated. Again, each of these structures, at each level of development, exists at the societywide *and* lower spatial levels.

One can see from this discussion that the relation between local economies and 'the larger economy' is often misspecified. Consider a statement of a type often encountered in industrial geography: "The pressure of international competition has forced the local industry to introduce new production technology and shed labour". Because the process is general, it is presented as originating outside the locality. But there is an inherent tendency in the CLR to replace labour by machinery which operates *within* each workplace and locality (albeit modulated by external competitive conditions: see section 6). The spatial origin of the process is of crucial political importance: if it is external, then the process is outside the control of social agents acting locally, whereas if it is internal then it is potentially an object of locally enacted struggle.

My use of the term 'structure', which has myriad meanings in social science, can be further clarified by distinguishing it from three usages which are common in economic geography. (a) It is used to denote a spectrum of elements compared with some, usually national aggregate, standard. This is the meaning of 'local structure' in shift-share analysis, for example. 'Structure' is here a purely descriptive-comparative concept. (b) It is utilised to denote synchronic relations, a snapshot of the economy, contrasted to its temporal change. In my usage, however, 'structures' can be dynamic and can denote processes of change, to the extent that change is in the logic of the social entity. (c) It is used to denote 'objective' or 'material' social entities, contrasted to subjectivity, consciousness, or ideology. This is the meaning in statements of the kind "Conscious attempts to regenerate the economy have been powerless in the face of its structural weaknesses". In contrast, in my usage the moment of consciousness is contained in structures, as consciousness is reproduced by, and reproduces, social relations, and is thus logically connected to the material moment. Further aspects of my usage of 'structure' are discussed in sections 3 and 4.

3 The development of structure: from the ubiquitous to the spatially specific

To say that a given structure operates at the societywide level and within each locality is not to say that it operates *in the same way* in each locality. Abstract structures are developed into diverse forms which are often spatially specific. The development from abstract to concrete forms takes place in a number of modes: through relating the structure to others; through the incorporation of material which (up to that point) was contingent to the structure's logic; and—what I want to stress here—through developing the internal logic of the structure, including developing its contradictions. Let us consider again the example of the CLR. In order to extract surplus labour, capital must control the activity of the workers within the labour process; but in order for the labour to be performed the worker must take initiatives and give commitment, however minimal; capital needs both to suppress and to use the worker's self-activity (Friedman, 1986). This contradiction and consequent tension within the labour process results in differentiation within it, as capital shifts back and forth between the contrary logics. A variety of degrees

and types of control open up, from dictatorial and detailed control of every action of the workers (Taylorism), to considerable degrees of worker autonomy over the form or the allocation of tasks. Where a particular labour process ends up within these possibilities depends, inter alia, on its technical nature; the concrete outcome thus depends on the incorporation of contingent material (technical conditions) into the abstract structure (Massey, 1984, pages 120–122; Massey and Meegan, 1979; Sayer, 1982). But the outcome also involves a logical development of the structure, including a development of its contradictions, an aspect which is often neglected (for example, in the texts just cited).

The differentiation of structures typically results in *spatial* difference. Again, this happens both through logical development and through the incorporation of external material. For example, consider a labour process specified at a certain level of abstraction, such as 'clothing machining'. This will appear in different forms in different localities (a) because of local circumstances which are (for present purposes) external to the labour process, such as wage rates; and (b) because of tensions within the labour process, for example, between volume-productivity and quality of production. Again, this theoretical point is politically important. Differences, including spatial differences, within capital and within labour are not merely the result of external contingencies but are logically constructed by the CLR itself: the difference arises from a unity. Moreover, to the extent that difference is constructed by contradiction it is unstable; in the example of clothing, employers, under the pressure of both volume-productivity and quality control, swing between different forms of labour process and employment contract (Leigh et al, 1982, chapter 8). This type of ambivalence in capital creates spaces for interventions by labour.

Structures thus become differentiated and spatially specific. It may be objected that they are then no longer 'structures', as the addition of contingent material means that they are no longer logically connected practices and relations (Massey, 1984, pages 44–50; Sayer, 1985). But this objection rests on an untenable dichotomy between the necessary and the contingent.[2] If I say, "It was necessary for her to do that", a wide set of circumstances is assumed, and these circumstances are incorporated into the logic of the statement ("It was necessary, given x, y, and z"). A structure, therefore, does not cease to be logical as it incorporates contingent material. One is therefore justified in talking here of spatially specific structures.

4 The development of structures: from aspatial to spatial logic

In defining above the most abstract form of the CLR, which I shall refer to as 'CLR1', I did not refer to space. Certain spatial conditions are implicit in the definition: means of production and reproduction take up finite areas of the earth's surface; workers and means of production must be adjacent and within communicating distance of owners of capital; and a territorially organised state must exist to guarantee property rights. These spatial conditions are no different from those

[2] Cox and Mair (1989) have pointed out that Sayer's (1985) framework contains such a dichotomy. This indeed seems to me to be a necessary feature of the 'critical realism' (Bhaskar, 1975) which Sayer uses and which has recently been influential in human geography. Critical realism regards logical relations as embodied in the 'causal powers' of social objects, including the relations which define the objects, so that these objects necessarily behave according to these causal powers. Things which lie outside these causal powers are therefore purely contingent (Sayer, 1985, pages 49–50). It is difficult to see how a causal power, embodied in this way in the object, can be developed from abstract to concrete forms. For a related but distinct critique of critical realism, see Gunn (1989).

of noncapitalist class societies; the use of space[3] is therefore not constitutive of CLR1. In contrast, time *is* a constitutive element of capitalist social relations at the highest level of abstraction; indeed, these relations construct social time. Value and exchange abstract out socially necessary labour time; management of the labour process is the control of concrete labour time and the use of labour power during a certain time; and capital accumulation measures itself in profit per unit time.[4]

However, in certain *developments of* CLR1 the use of space *is* a necessary element. For example, the freedom of the worker to sell her or his labour power on the market, and to survive and reproduce that labour power through the private purchase of commodities and their private transformation by unpaid domestic work, implies, in contrast to the situation in the slave or feudal modes of production, that the geographies of production and reproduction are not coincident but have distinct dynamics. Given that these spaces nevertheless have to be connected (via the journey to work) one has a potential tension between the spatial organisation of production and that of reproduction. In this case, the use of space is an integral part of the logic and hence of the structure; I shall refer to these as 'spatial structures'. Note that this is very different from the common usage of 'spatial structure' to mean concrete spatial patterns.

At an intermediate level of abstraction a large number of spatial structures of capitalism may be specified (Harvey, 1982; Smith, 1984). To illustrate the argument, let us consider the important set of spatial structures which lead to spatial concentration and dispersal of production.

Tendencies towards spatial concentration A dynamic of the capitalist labour process tends to concentrate production in space within each firm. The dynamic of over-accumulation and devalorisation leads to centralisation of ownership, tending to further concentration of production. Minimisation of working capital in stocks of commodities tends to reduce distances between producers and markets.

Tendencies towards spatial decentralisation Overproduction of commodities leads to an increase in the spatial extent of markets. Overproduction of money capital leads to an increase in the spatial extent of circuits of credit money. Overaccumulation of productive capital with respect to labour power leads to an expanding and evershifting space of production. The existence of ground rent produces further centrifugal tendencies. Increases in productivity in transport and communications facilitate all these forms of decentralisation.

Tendencies to spatial immobility Long turnover time in certain types of investment which are immobile implies spatial immobility if the investment is to be realised. Access to already created labour power and to other social and economic infra-structures creates a spatial conservatism in productive capital (see section 7).

That space does not enter capitalist social relations at the highest level of abstraction but at these intermediate levels does not mean that these are any less

[3] Some authors have argued that space is socially constructed (Lefebvre, 1970; Smith, 1984); if this were so then one might see space itself as a structure. However, as Sayer (1985) has argued, it is the use of space, not space itself, which is socially constructed. I take the earth's surface as an external given for society. This is not a trivial assumption, because 'social space' is not unitary or stable over time, but is made up of myriad, everchanging 'spaces' of particular social practices; these have to be commensurated in some common space, and this can only be the fixed system of coordinates of the earth's surface.

[4] The assertion of Giddens (1985, page 265) and Urry (1985, page 20) that the social construction of time has been neglected in social science therefore seems to neglect economics. The very different roles of space and time at this level of abstraction suggest that it is unfruitful to discuss them as if they were comparable dimensions, through an implied analogy with the theory of relativity (for instance, Giddens, 1985, pages 264-272, 283; Urry, 1985, pages 24-29).

spatial *structures* if, again, we do not have a dualism of the necessary and the contingent.[5] Contrary to Sayer's argument (1985, page 54), the role of space, beyond the fact that it has *some* role, is not a purely empirical question. Note the powerful contradiction between the three groups of tendencies; this is a contradiction, and not merely a conflict, because the tendencies are all developments of CLR1. This contradiction means that there is no simple concrete pattern of centralisation or decentralisation. The lack of such a concrete outcome does not mean, as Massey (1984, page 49) argues, that there is no abstract spatial logic of capital. On the contrary, each outcome involves a tension between centralising, decentralising, and conservative logics, which produce instability within, and differentiation between, localities (see section 3).

To summarise sections 3 and 4, space becomes incorporated into structures in two distinct ways: in the differentiation of structures across space and in the way structures use space. Empirical spatially uneven development is in part logically constructed from the development of nonspatial structures, from their contradictions, and also from spatial structures of an intermediate level of abstraction.

5 Systems

The capitalist mode of production is marked by the private control of units of production and reproduction, by a social division of labour in paid and unpaid labour. We have seen that these private agents share common structures, and by virtue of this are congruent with each other (section 2). But to the extent that their actions are uncoordinated, taken according to private interest, they are contingently, externally related. This absence of coordination is expressed in markets in commodities and in labour power; each agent pursues its particular interests in the face of markets which from its point of view are external. Markets, and the buyers and sellers that make them up, are therefore in the first place sets of contingently related elements which I shall call 'systems'. The distinction between structure and system used here is therefore not merely a 'philosophical' distinction between the necessary and the contingent required by any process of analysis but is a 'determinate abstraction' arising in the processes of capitalist society itself (Gunn, 1989).

Other systems than markets are relevant to spatial economies. For example, population is a system, made up of structurally congruent but, in the first place, uncoordinated agencies of parenthood. Market systems are specific, however, in having particularly strong interactions between their constituent agents via exchange. In this paper I shall consider only market systems.

We have seen that structures may be abstract or fully concrete. In contrast, systems are always concrete, as one is not concerned with the logic of their construction. For example, a market system for a particular product is made up of immediately empirically specifiable producers and consumers of the product at a particular historical time. Systems are therefore spatially and historically concrete.

The distinction between structures and systems used here has some similarities to that made by Giddens (1979): in both, 'structures' are constitutive and 'systems' concrete, in particular, they are spatially and temporally concrete. However, systems here are regarded as sets of external interactions, rather than merely patterns, whereas structures are regarded in the first place as logical relations, which can be developed from abstract to concrete forms, rather than as 'rules and resources'.

[5] Gottdiener, using realist language, locates that 'causal power' of space in commoditised land on the one hand and in spatially and historically concrete 'spatial configurations' on the other (1987). His rejection of capital logic (1985) leads him to neglect intermediate-level spatial structures.

The generality of Giddens's distinction means that it is not a determinate abstraction of a particular mode of production.

Every market involves systems relations of two types: the relations between competing producers (firms, sellers of labour power), which we may call 'competitive systems', and the relations between producers and buyers (firms, consumers), which we may call 'demand systems'. For a given market, the territories of the two systems will in general be different. For a producer these two spaces define a double competitive environment: the geography of the competitive system is associated with the qualitative forms of competition, whereas the geography of the demand system defines the strength, dynamics, and 'quality' of demand. For a local economy, competitive systems define the extent to which competition is a zero-sum game within the locality, whereas demand systems define flows of income and thus local multipliers.

Looking back at the criticism in section 2 of non-Marxist theories, we can now say that they picture the relations between the firm and the wider economy, and between capital and labour, as *systems* relations. This is because they are based on the point of view of the individual agent facing markets (Himmelweit, 1977). Indeed, these systems are the organising categories of neoclassical, Keynesian and systems-theoretical geography. In neoclassical economic geography, the focus is on factor price differences within competitive systems. In Keynesian theory, the geography of demand systems is central, as profitability is directly related to output and demand. Within a Marxist approach, the task is to relate these external systems to the structural relations of production. For competitive systems this is discussed in the next section. For demand systems, the territories of the systems articulate the relation between circulation and production and the contradictions of this relation. An important case is the contradiction for capital that an increase in wages both eats into profits and increases demand for consumer goods firms; the intensity of this contradiction for the capital operating in a locality is determined by the geography of the demand system of local consumer spending.

Table 1. The characteristics of structures and systems.

Structure	System
Necessity	Contingency
Internal relations	External relations
Mutual construction of constituents	Independence of constituents
May be abstract or concrete	Spatially and historically concrete

6 Competition: the dialectic of structure and system

Systems, then, concern competition in markets. But, after Bryan (1985), I shall argue that competition is not merely a market relation, as it appears in everyday discourse and neoclassical economics, but involves the relation of exploitation and the circulation of capital; that is, in the terms of this paper, that it is not only a systems relation but also a structural one.

Let us first consider an industry making a particular product—a 'product industry'. In neoclassical economics, competition is conceived of as a purely market relation between firms competing by price and quality for a given demand; as such, it is seen as involving external, systems-type interactions between producers. Thus 'imperfect competition' consists in unequal relations between producers. It is true that systems marshall the competitors in a market; but the processes by which competition proceeds are constituted by production, by the internal, structural characteristics and processes of firms. Firms compete partly through manipulation

of (and luck in) markets; but the core of competitive strategies is the labour process (including those of design, marketing, etc), and in particular the CLR. The ability of management to transform the labour process, in this wide sense, is the key to its ability to make profits and surplus profits. The substance of competition is thus *structural.* Moreover, the processes by which competition proceeds define the competitors (firms, sellers of labour power) making up a competitive system and thus its boundaries, including its spatial boundaries. In the case of the product industry, the set of firms which make it up is given, dynamically, by the internally defined capacities of those firms to compete within it.

Competition therefore involves not merely systems but structures. This is politically significant, because it means that competition is not simply a matter of the impersonal market but involves the relation between capital and labour.

Competition, then, proceeds through differentiated investments. The flow of capital between such investments tends to equalise the rate of profit between different capitals; it is this purely value relation, rather than the particular concrete labour processes in each branch, which is the centre of capitalist competition. Conceived of in this way, competition is not limited to a given product, as in neoclassical theory. On the contrary, the most important forms of competition concern the flow of capital between products and between productive, commercial, and money capital. A corollary is that competition occurs not merely between firms but within firms (Bryan, 1985).

The competition in which a local economy is involved is, then, not merely competition within each of its existing activities; it is crucially the flow of capital, in search of higher rates of profit, between products, between stages of production of a given product, and between its productive, commodity, and money forms. Such switches can have sharp impacts on local economies. From the local perspective, they are often viewed as a kind of fecklessness, a lack of commitment to the area, particularly when they are carried out by transnationals; but in tending to equalise the rate of profit across different activities they are the most dynamic form of competition. The mobility of capital between sectors and between places is sometimes seen as a peculiarly modern phenomenon, and as arising from particular forms of capital (transnationals, international finance, etc). In the treatment here, on the contrary, it is inscribed in the nature of capital as self-expanding value. The competitive systems relevant to a local economy thus include not merely product industries, but different vertical stages of production (such as those of the 'industrial district'), multisite firms, systems that link production, commerce, and finance, and ultimately the economy as a whole at various spatial scales. These all define 'spaces', figuratively and literally, which organise the circulation of capital.

I have argued that systems are constructed by structures; let us now examine the reciprocal relation. Consider again a product industry. We have seen how firms' structures underpin the qualitative strategies through which competition proceeds. The internal accumulation of capital within each firm defines the aggregate capacity of the industry. The externally given demand of the system combines with this capacity to determine prices, aggregate profits, and thus the quantitative intensity of competition. These define certain strategies as profitable and others as unprofitable. In this way labour expended in the different firms, within different strategies, and within different localities is commensurated as abstract labour. [Thus value is constituted in circulation as well as in production (Banaji, 1979).] The system, through a 'determinate abstraction', imposes value production within its constituent structures; in this way, the system partially constructs these structures (Itoh, 1979).

In the neoclassical approach, competition produces a tendency towards convergence and homogenisation of product industries. But, although the system

commensurates different strategies, it can produce divergence as well as convergence in them. Change in the organisation of the labour process is always uneven given the lack of coordination between firms, business secrecy, unequal financial resources, unequal locally supplied labour power, and the constant interruptions to investment created by periodic crises (see section 3). Geographical differences in structures are not captured by the neoclassical production function: it is not a question of substituting between undifferentiated 'capital' and 'labour' according to their spatially varied prices, but of qualitatively different labour processes, between which there may be no continuum, and which are based not only on varied factor prices but on spatially varied qualities of labour power and CLRs within and outside production. Hence the response of local enterprises to new strategies elsewhere in the product-industry system is often not imitation but qualitative differentiation. Thus system interactions produce not only spatial convergence but spatial differentiation of structure.

Structures and systems, then, are mutually constructing. This mutual construction, at a sufficient level of concreteness, is strongly spatial: structures with a spatial logic, and spatially differentiated structures, construct systems of determinate spatial extent, and vice versa. This is one way of understanding the dialectic of combined and uneven development (Löwy, 1981); different areas, combined through systems, tend to develop converging ('combined') and divergent ('uneven') structures, whose contradictory development alters the constituents of the system and thus the form of 'combination'.

7 Locally effective structures of the local economy: the social nature of production

The competitiveness of firms in a locality, then, depends on their locally specific internal structural characteristics. But it also depends on features of the local economy as a whole. Harvey (1985, pages 146-150) has argued that the 'coherence' between what I shall call the 'broad sectors' of the local economy—production, finance, reproduction of labour power, land and premises, infrastructures, suppliers—is central to the competitiveness of the local economy. How is this coherence to be understood in our framework of structure and system?

First, why does one so often conceptually carve up the local economy into these broad sectors, rather than, for example, into portions of capital of different turnover times? The most obvious reason is that the broad sectors correspond to a social division of labour: they are undertaken by different agents who relate to each other by market transactions. The most fundamental division of labour is between capital and labour, where labour is directly responsible for the production of labour power (sections 2 and 4); but, in addition, the broad sectors under capitalist control are generally each controlled by different firms. Recalling the argument of section 5, one sees that the local economy is a system made up of the broad sectors. These sectors are developed according to the private interests of the producers, subject to the external local markets. The 'social' (in the sense of 'nonprivate') nature of the local economy here appears as the social division of labour; from the point of view of individual producers, it appears as markets. The markets coordinate the proportional production of the different commodities; that this is market, and not planned, allocation gives a potential for disproportionalities, but only a potential (Harvey, 1985, pages 166-176).

However, this systems nature of the local economy is modified by the durability, immobility, and transferability of a large part of the means of production: given capitalist social relations, these tend both to produce stronger, structural relations between the parts of the local economy and to produce systematic tendencies to disproportionality. Many types of fixed capital, within infrastructures and ordinary

forms of production, and also skilled labour power have long physical durability; the capital invested in them is typically written off over long periods, so that they are durable not only as use values but as values (Harvey, 1985, pages 208–209). Most fixed capital is effectively immobile once installed; and labour power has limited spatial mobility. Now, this immobile capital of long turnover time has necessary relations with short turnover time, circulating capital invested in the local economy. The operation of capital of short turnover time requires long-turnover-time capital within and without the firm, and successive investments of short turnover time are therefore made according to the stock of capital with long turnover time. Investments of long turnover time are made according to expectations about future investments in circulating capital by the same or other firms. These a priori relations tend to establish a quantitative and qualitative match between investments of different turnover time in the locality. A posteriori, the investments of different turnover time will not be (fully) valorised if such a match does not exist. Investments of different turnover time are therefore *structurally* related. But changing market conditions, uncoordinated investment, and unfulfilled expectations mean that, over their life, long-turnover investments are likely to be either underused, resulting in devalorisation, or in undersupply, resulting in inflation and the devalorisation of circulating capital, given that their immobility prevents their being marketed elsewhere. Thus the structural link between investments of different turnover time is both functional and disfunctional for their valorisation.

Note that these disproportionalities occur not just between different firms and branches, via markets, but within firms. Note also that disproportionalities between firms or branches are hard to correct, and thus serious, only when they involve investments of long turnover time. Thus the source of disproportionalities is not markets, nor the social division of labour, but differences in turnover times: a structural rather than a systems relation.

This is given a twist by the fact that many of the commodities of long turnover time are consumed by a great variety of local enterprises (they are highly 'transferable'), yet the responsibility for their production slips through the mesh of the social division of labour. The classic case is the production of labour power: each firm tends to try to rely on the prior production of skilled labour power by other (local) firms, leading to systematic underinvestment. The same phenomenon can also occur with 'normal' commodity inputs such as premises and business services. (Note, again, the role of the turnover time of these investements.) Once again, we have a structural relationship, the dependence of each firm on prior production by others, which is also immediately contradictory, as by the same token the supply necessarily tends to be inadequate.

Local economies, then, are 'social' by virtue of systems relations: each producer (firm, worker) responds, moment by moment, to local competition and local demand. But they are also 'social' in a stronger, structural sense: different local investments are mutually dependent for their valorisation, by virtue of their irreversibility, their differentiated turnover times, and the immobility of some, reinforced by 'free riding'. For this kind of nonmarket dependence we may use the term 'the social nature of production' (though this is a potentially misleading term because markets also are social).

The relation between the parts and the whole of the local economy, then, is not only a systems but a structural one. If we leave aside for a moment their contradictory nature, these structural relations encourage accumulation and enhance the competitiveness of the local economy. The supply of long-turnover commodities and transferable inputs in a locality attracts new investment and promotes its valorisation. Harvey's 'coherence' is this positive side of the local structural

connections of the local economy. In the terms of section 4, they are 'spatial structures', operating over a local distance; and they tend to produce immobility and centralisation of production. They are an important means by which locally specific stuctures are perpetuated (section 3).

Many authors (for example, Broadbent, 1977, page 115; Urry, 1985, page 35) have argued that the most important specific differentiating structure of local economies in contemporary capitalism is labour power. From the point of view of capital considering an incremental addition to production in the area this may well be true. But we have just seen that this differentiated structure only exists by virtue of other local structures, particularly locally specific production, with which it is structurally connected. The reproduction and dynamics of local specificity therefore involve the reproduction of the *whole* of the local economy, not merely its pool of labour power. The argument of this section is that differentiated local economies are to some extent *structural wholes.*

To the extent that the local structural connections have negative effects on accumulation, by producing underinvestment and disproportionality, they tend to elicit various forms of nonmarket coordination, particularly by the state (Harvey, 1985, pages 150–153). These attempt, dynamically, to establish the required proportions between the different elements of capital in the locality, that is, to promote 'coherence'. Note that it is not the social nature of production *as such* that elicits state intervention, but its *contradictions.*

8 Competition between localities

This account of competition (section 6) and of the local economy as a structure (section 7) enables us to conceive more clearly what is meant by 'competition between localities'. Capital operating (organising living labour) within a locality competes within a variety of systems, which include different types of system (product industry, stages of production, the firm, etc). These systems define qualitative competitive pressures (in the dominant strategies used within them) and quantitative intensity of competition (in the average rate of profit within them). These pressures are associated with the geographical extent of these systems. The means by which capital operating in the locality can compete within these systems is defined by its specific structural characteristics and its ability to change these, and, crucially, its ability to dominate labour. Competition between localities thus intimately involves relations between the classes within each locality (Gough, forthcoming). The competitiveness of the locality also depends on locally acting spatial structures making for its 'coherence'. The contradictions of these structures and systems (see sections 7, 9, and 10) result in the movement of capital between localities, and this constitutes their competition.

Although these contradictions are the driving force of capital mobility, this mobility is modulated by the particular character of the firms owning it; this defines the firm's ability to select the systems of competition within which it will operate. In contemporary capitalism the mobility of capital via the financial system is almost complete; but firms investing their capital in this way usually have to accept only interest rather than profit. The mobility of a firm's direct investment is more limited: first, by the size of its capital; second, by the knowledge and skills of its management; and, third, by the minimum profit rate it is prepared to accept. These characteristics of the firm define simultaneously the sectors and the locations into which it is able to move its capital; this logical connection is a 'spatial structure'. (The existing spatial locations of the firm, and the location of its headquarters, may form a system of competition within the firm, but they are of secondary importance

in determining the location of new investment.) The mobility of capital between localities is thus modulated by the structural spatial mobilities of individual capitals. These spatial mobilities are not exogenous to accumulation within local economies: they are constructed over time by the firms' practice.

Capital repositions itself within systems where it can make higher profits either through abandoning the local economy or through transforming the structures of that economy. In either event, through structural means a new set of systems comes to bear on the local economy. To the extent that local capital is trapped within its existing systems of competition, it may have to accept a lower rate of profit, thus producing locally differentiated average rates of profit. (On evidence of these in the USA, see Clark et al, 1986, pages 253-256.)

To understand competition of localities, then, we require the specific conception of competition used in this paper, the flow of capital between competitive systems. We have seen that localistic competition involves space in three quite distinct modes: (1) the geograpical locations of the systems to which the local economy is externally related; (2) the local specificity of the structures of the local economy; and (3) the operation of spatial structures, such as the mobility of individual capitals and the structural coherence of the local economy as a whole. The paths of competition of capital operating in the locality, and their geography, are defined by specific combinations of these modes.

9 Spatial contradictions

The contradictions within the structures and systems of the local economy are central to its competitiveness. The discussion so far suggests that contradiction occurs in different modes in structures and systems. Contradictions in structures arise from their internal logic, where a single social process implies two contrary tendencies. We have also seen various examples of contradictions within systems. These all involve a clash between the aggregate, the average, or the overall extent of the system on the one hand, and the dynamic of the structures which constitute it on the other. For example, we noted in section 5 the contradiction between the aggregate consumer demand of a local economy and the structural tendency of each capital to hold down the wages it pays. Similarly, in a product industry there is a structural tendency for each firm to increase its capacity, particularly through intensive investment, which is contradicted by the (largely) externally given aggregate demand. The characteristic form of contradiction in systems, then, is a contrary dynamic of the aggregate of the system on the one hand and the structures which define its boundaries on the other.

Giddens comes to a similar conclusion in his criticism of Elster's analysis of contradiction. Elster (1978) has emphasised contradictions arising from 'fallacies of composition'. In the terms used here, these involve the actions of externally related agents, the contradiction arising when the aggregation ('composition') of the system produces effects contrary to the intentions of each one of the agents; in other words, it is a purely systems contradiction. However, as Giddens (1979, pages 140-141) points out, these contradictions seem typically to involve the internal dynamics of the agents, in our terms their structural dynamics. One could go further and say that this must be the case: for a 'fallacy of composition' to constitute a contradiction in any strong sense, the actions of the agents making up the system must be *necessary* actions, that is, they must arise from the logic of their structural makeup. It is therefore not a coincidence that the systems contradictions we have encountered turn out to be contradictions not in a system alone but in the dialectic of system and structure.

10 The contradictions of accumulation in local economies and their spatiality

Last, we can distinguish some important types of contradiction of local economies, according to the type of logic involved. As this logic is also a spatial logic, one can specify the spatiality of these contradictions. This enables one to clarify what it means to say that disruptions of accumulation in a local economy come from 'inside' or 'outside' the locality. Following the argument of the last section, we may distinguish disruption arising from contradictions of structures alone; from contradictions of the dialectic of structures and systems; and from disruptions from systems alone. Because systems are spatially determinate, we may distinguish local and nonlocal ones. This gives the following typology.

10.1 *Category 1: structural contradictions*

(a) Disruption of accumulation can arise from contradictions within the structures of work places, firms, and 'broad sectors' of the local economy. Class struggle within production is an obvious example. We have seen that, at sufficiently high levels of abstraction, these structures are ubiquitous, and their contradictions are therefore ubiquitous or at least widespread: for example, similar problems of managerial control may be found in particular labour process wherever it is. But the structures and their contradictions are internal to the local economy (section 2), and they will always to some extent take a locally specific form (section 3).

(b) We saw in section 7 how the spatial structures giving coherence to a local economy are themselves contradictory, tending to produce qualitative and quantitative disproportionality within the local economy. These structures and their contradictions operate within the locality (they are 'spatial structures' operating at the local scale). As they depend on particular turnover times, degrees of immobility and transferability of fixed capital, labour power, etc, they are strongly locally specific.

(c) The structural coherence of a local economy may be disrupted by shifts in the sectoral composition of production. This occurs in a strong form in the introduction of industries wholly new to the locality, producing an 'archaeology' of distinct and sometimes mutually conflicting spatial structures (forms of coherence) within the locality. The qualitative and quantitative development of the older structures (for example, the production of pools of free labour power) lays the basis for the growth of the new ones (Massey, 1984, pages 117–120). New 'layers' and their attendant disruption of local coherence are therefore partly a product of the contradictions of the old 'layers'.

This set of disruptions to local accumulation, then, involves structures, internal to the local economy, which range from the ubiquitous to the locally specific; they include locally effective spatial structures.

10.2 *Category 2: contradictions of the dialectic of structures and local systems*

(a) Overaccumulation of capital with respect to labour power, local infrastructure, or local demand tends to lead to local inflation. This involves an internal structural tendency combined with systems of local extent.

(b) The local economy as a system, that is, through its markets, effects various forms of equalisation on structures composing it in a way which causes their disruption. Consider the local market in labour power. Long-term increases in productivity play a central role in determining long-term changes in wage levels. But because there is a local market in labour power, it is the *average* increase in productivity that counts; and the market then imposes this average on all firms, irrespective of their particular productivity movements. Similarly, levels of ground rent (and thus land price) are set by the level of spatially associated surplus profits. But the local market in land is based on the *average* level of these surplus profits, and it imposes land prices on firms irrespective of their particular profit levels.

Whereas contradiction (b) of category 1 in a sense involves local markets not working well enough ('free riders', lack of long-term investments, etc), in this case they work too well. The local market systems thus constantly cause crises for particular firms and particular sectors. These processes are necessary for shaking out the local economy; but they are a crude and indiscriminate means of restructuring, because they take no account of long-term profitability and competitiveness of particular firms and sectors, and produce local disproportionalities. Again, we have here contradictions involving structural processes (increasing productivity, the wage–productivity relation) and spatial structures (locally associated surplus profits leading to ground rent) acting with systems of local extent (local markets and prices).

10.3 *Category 3: contradictions of the dialectic of structures and nonlocal systems*
(a) Overaccumulation of productive capital with respect to nonlocal demand leads to devalorisation of installed capacity.
(b) Any of the forms of disruption so far discussed can produce a mismatch of structure in the locality with the nonlocal systems in which they were operating. We saw in section 6 that a structure can be appropriate for competition within a product-industry system. The extent to which this is true of a local economy as a whole might be called its 'structure-and-system coherence', in distinction to its structural coherence (section 7).

10.4 *Category 4: change in nonlocal systems*
In category 3, disruption *originates* in local structural processes, though its effect depends on nonlocal systems. But disruption can also originate in changes outside the locality in the nonlocal systems within which the local economy operates. These disrupt the structure–systems coherence by shifting the competitive system away from the structures in the locality. The market exchanges making up the systems may be changed or disrupted (changes in transport and communications, trade barriers). Markets in final products or inputs may change. This is the only type of disruption which is purely external to the locality.

All these forms of disruption tend to produce uneven devalorisation within the local economy, and thus (further) disproportionalities [see (b) of category 1] which exacerbate the disruption. Thus even forms of disruption which are nonlocal in origin can develop a local structural aspect.

A striking feature of this typology is the importance of contradiction, that is, of disruptions arising from the internal logic of the structures of local economies, sometimes alone (category 1), sometimes in relation to their systems (categories 2 and 3). Developments contingent to the local economy can clearly be important [category 4, and to some extent (c) of category 1]; but the familiar picture of a local economy as 'a victim of external circumstances' is often misleading. The spatial logics of the forms of disruption of local accumulation are in fact diverse and complex. To the extent that their origin is 'local', this can be so in three quite different senses: locally specific structures, locally effective spatial structures, and local systems (see section 8).

One implication of this argument is that attempts to counter such disruptions through local economic initiatives have to address diverse meanings of 'the local' and varied types of articulation of local and nonlocal. This complexity is missed in the usual distinction between 'local' and 'nonlocal' strategies as strategies based on 'indigenous development' and inward investment, respectively.

11 Conclusions

I hope I have been able to show the usefulness for economic geography in general and the understanding of local economies in particular of a distinction between structure and system. The distinction is useful not simply because it distinguishes necessary and contingent relations, but because it corresponds to historically specific processes of the capitalist mode of production. We have seen the inadequacy of the mainstream approaches which theorise spatial relations exclusively in terms of systems, that is, as social entities linked by market and other relations external to their nature. But the deployment of the distinction between structure and system is mechanical and reductionist unless these terms, and their relation, are understood dialectically. Structures should not be understood simply as unitary abstractions but as concepts capable of development from abstract to concrete forms and as embodying contradictions which disrupt their unity 'from the inside'. Systems do not have a distinct realm of effectiveness, but are constructed by, and react back onto, structures. The use of these dialectics can help to clarify the logic of the capitalist use of space.

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References

Banaji J, 1979, "From the commodity to capital: Hegel's dialectic in Marx's *Capital*" in *Value: The Representation of Labour in Capitalism* Ed. D Elson (CSE Books, London) pp 14-45

Bhaskar R, 1975 *A Realist Theory of Science* (Alma Books, York)

Broadbent T A, 1977 *Planning and Profit in the Urban Economy* (Methuen, Andover, Hants)

Bryan R, 1985, "Monopoly in Marxist method" *Capital and Class* **26** 72-92

Burawoy M, 1985 *The Politics of Production* (Verso, London)

Clark G L, Gertler M S, Whiteman J E M, 1986 *Regional Dynamics: Studies in Adjustment Theory* (Allen and Unwin, Winchester, MA)

Cox K, Mair A, 1989, "Levels of abstraction in locality studies" *Antipode* **21** 121-132

Elster J, 1978 *Logic and Society* (John Wiley, Chichester, Sussex)

Friedman A, 1986, "Developing the managerial strategies approach to the labour process" *Capital and Class* **35** 97-124

Giddens A, 1979 *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis* (Macmillan, London)

Giddens A, 1985, "Time, space and regionalisation", in *Social Relations and Spatial Structures* Eds D Gregory, J Urry (Macmillan Education, Basingstoke, Hants) pp 265-295

Gottdiener M, 1985 *The Social Production of Urban Space* (University of Texas Press, Austin, TX)

Gottdiener M, 1987, "Space as a force of production" *International Journal of Urban and Regional Research* **11** 405-416

Gough A J, 1992, "Workers' competition, class relations, and space" *Environment and Planning D: Society and Space* **10** forthcoming

Gregory D, Urry J (Eds), 1985 *Social Relations and Spatial Structure* (Macmillan Education, Basingstoke, Hants)

Gunn R, 1989, "Marxism and philosophy" *Capital and Class* **37** 87-116

Harvey D, 1982 *The Limits to Capital* (Basil Blackwell, Oxford)

Harvey D, 1985, "The geopolitics of capitalism", in *Social Relations and Spatial Structures* Eds D Gregory, J Urry (Macmillan Education, Basingstoke, Hants) pp 128-163

Hayter R, Watts H D, 1983, "The geography of enterprise" *Progress in Human Geography* **7** 157-181

Himmelweit S, 1977, "The individual as basic unit of analysis", in *Economics: An Anti-text* Eds F Green, P Nore (Macmillan, London)

Itoh M, 1979, "Marx's theory of market value", in *Value: The Representation of Labour in Capitalism* Ed. D Elson (CSE Books, London) pp 102-114

Lefebvre H, 1970 *La Révolution Urbaine* (Maspéro, Paris)

Leigh R, North D, Escott K, Gough J, 1982 *Monitoring Manufacturing Employment Change in London 1976–1981: The Implications for Local Economic Policy* (Middlesex Polytechnic, Enfield, Middx)

Löwy M, 1981 *The Politics of Combined and Uneven Development* (Verso, London)

McLoughlin J B, 1969 *Urban and Regional Planning: A Systems Approach* (Faber and Faber, London)

Massey D, 1984 *Spatial Divisions of Labour* (Macmillan Education, Basingstoke, Hants)

Massey D, 1985, "New directions in space" in *Social Relations and Spatial Structures* Eds D Gregory, J Urry (Macmillan Education, Basingstoke, Hants) pp 9–19

Massey D, Meegan R A, 1979, "The geography of industrial reorganisation: the spatial effects of the restructuring of the electrical engineering sector under the IRC" *Progress in Planning* **x** part 3

Marx K, 1974 *Capital* (Lawrence and Wishart, London)

NCDP, 1979 *The State and the Local Economy* National Community Development Project, Benwell CDP; copy available from The Home Office, Queen Anne's Gate, London, SW1

Ollman B, 1971 *Alienation: Marx's Conception of Man in Capitalist Society* second edition (Cambridge University Press, Cambridge)

Sayer A, 1982, "Explanation in economic geography: abstraction versus generalisation" *Progress in Human Geography* **6**(1) 68–88

Sayer A, 1985, "The difference that space makes", in *Social Relations and Spatial Structures* Eds D Gregory, J Urry (Macmillan Education, Basingstoke, Hants) pp 49–66

Smith N, 1984 *Uneven Development* (Basil Blackwell, Oxford)

Urry J, 1985, "Social relations, space and time", in *Social Relations and Spatial Structures* Eds D Gregory, J Urry (Macmillan Education, Basingstoke, Hants) pp 20–48