HENRI LEFEBVRE, THE PRODUCTION OF SPACE
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Plan of the Present Work

(I) - III [STRESS OF PHILOSOPHICAL, CARTESIAN SP

Not so many years ago, the word 'space' had a strictly geometrical meaning: the idea it evoked was simply that of an empty area. In scholarly use it was generally accompanied by some such epithet as 'Euclidean', 'isotropic', or 'infinite', and the general feeling was that the concept of space was ultimately a mathematical one. To speak of 'social space', therefore, would have sounded strange.

Not that the long development of the concept of space had been forgotten, but it must be remembered that the history of philosophy also testified to the gradual emancipation of the sciences – and especially of mathematics – from their shared roots in traditional metaphysics. The thinking of Descartes was viewed as the decisive point in the working-out of the concept of space, and the key to its mature form. CARTESIAN SPACE According to most historians of Western thought, Descartes had brought to an end the Aristotelian tradition which held that space and time were among those *categories* which facilitated the naming and classing of the evidence of the senses. The status of such categories had hitherto remained unclear, for they could be looked upon either as simple empirical tools for ordering sense data or, alternatively, as generalities in some way superior to the evidence supplied by the body's sensory organs. With the advent of Cartesian logic, however, space had entered the realm of the absolute. As Object opposed to Subject, as *res extensa* RES EXTENS opposed to, and present to, *res cogitans*, space came to dominate, by containing them, all senses and all bodies. Was space therefore a divine attribute? Or was it an order immanent to the totality of what existed? Such were the terms in which the problem was couched for those philosophers who came in Descartes's wake – for Spinoza, for Leibniz,

for the Newtonians. Then Kant revived, and revised, the old notion of the category. Kantian space, albeit relative, albeit a tool of knowledge, a means of classifying phenomena, was yet quite clearly separated (along with time) from the empirical sphere: it belonged to the *a priori* realm of consciousness (i.e. of the 'subject'), and partook of that realm's internal, ideal – and hence transcendental and essentially ungraspable – structure.

These protracted debates marked the shift from the philosophy to the science of space. It would be mistaken to pronounce them outdated, however, for they have an import beyond that of moments or stages in the evolution of the Western Logos. So far from being confined within the abstractness with which that Logos in its decline endowed so-called pure philosophy, they raise precise and concrete issues, among them the questions of symmetry versus asymmetry, of symmetrical objects, and of the *objective* effects of reflections and mirrors. These are all questions to which I shall be returning because of their implications for the analysis of social space.

II [Space of Mathematics]

Mathematicians, in the modern sense of the word, emerged as the proprietors of a science (and of a claim to scientific status) quite clearly detached from philosophy – a science which considered itself both necessary and self-sufficient. Thus mathematicians appropriated space, and time, and made them part of their domain, yet they did so in a rather paradoxical way. They invented spaces – an 'indefinity', so to speak, of spaces: non-Euclidean spaces, curved spaces, *x*-dimensional spaces (even spaces with an infinity of dimensions), spaces of configuration, abstract spaces, spaces defined by deformation or transformation, by a topology, and so on. At once highly general and highly specialized, the language of mathematics set out to discriminate between and classify all these innumerable spaces as precisely as possible. (Apparently the *set* of spaces, or 'space of spaces', did not lend itself very readily to conceptualization.) But the relationship between mathematics and reality – physical or social reality – was not obvious, and indeed a deep rift had developed between these two realms. Those mathematicians who had opened up this 'problematic' subsequently abandoned it to the philosophers, who were only too happy to seize upon it as a means of making up a little of the ground they had lost. In this way space became – or, rather, once more became – the very thing which an earlier

philosophical tradition, namely Platonism, had proposed in opposition to the doctrine of categories: it became what Leonardo da Vinci had called a 'mental thing'. The proliferation of mathematical theories (topologies) thus aggravated the old 'problem of knowledge': how were transitions to be made from mathematical spaces (i.e. from the mental capacities of the human species, from logic) to nature in the first place, to practice in the second, and thence to the theory of social life – which also presumably must unfold in space?

III [Mental Space]

From the tradition of thought just described – that is, from a philosophy of space revised and corrected by mathematics – the modern field of inquiry known as epistemology has inherited and adopted the notion that the status of space is that of a 'mental thing' or 'mental place'. At the same time, set theory, as the supposed logic of that place, has exercised a fascination not only upon philosophers but also upon writers and linguists. The result has been a broad proliferation of 'sets' (*ensembles*), some practical,[1] some historical,[2] but all inevitably accompanied by their appropriate 'logic'. None of these sets, or their 'logics', have anything in common with Cartesian philosophy.

No limits at all have been set on the generalization of the concept of *mental space:* no clear account of it is ever given and, depending on the author one happens to be reading, it may connote logical coherence, practical consistency, self-regulation and the relations of the parts to the whole, the engendering of like by like in a set of places, the logic of container *versus* contents, and so on. We are forever hearing about the space of this and/or the space of that: about literary space,[3] ideological spaces, the space of the dream, psychoanalytic topologies, and so on and so forth. Conspicuous by its absence from supposedly fundamental epistemological studies is not only the idea of 'man' but also that of space – the fact that 'space' is mentioned on every page notwithstanding.[4] Thus Michel Foucault can calmly assert that 'knowledge [*savoir*] is also the

[1] See J.-P. Sartre, *Critique de la raison dialectique*, I: *Théorie des ensembles pratiques* (Paris: Gallimard, 1960).
[2] See Michel Clouscard, *L'être et le code: procès de production d'un ensemble précapitaliste* (The Hague: Mouton, 1972).
[3] See Maurice Blanchot, *L'espace littéraire* (Paris: Gallimard, 1955).
[4] This is the least of the faults of an anthology entitled *Panorama des sciences humaines* (Paris: Gallimard, 1973).

space in which the subject may take up a position and speak of the objects with which he deals in his discourse'.[5] Foucault never explains what space it is that he is referring to, nor how it bridges the gap between the theoretical (epistemological) realm and the practical one, between mental and social, between the space of the philosophers and the space of people who deal with material things. The scientific attitude, understood as the application of 'epistemological' thinking to acquired knowledge, is assumed to be 'structurally' linked to the spatial sphere. This connection, presumed to be self-evident from the point of view of scientific discourse, is never conceptualized. Blithely indifferent to the charge of circular thinking, that discourse sets up an opposition between the status of space and the status of the 'subject', between the thinking 'I' and the object thought about. It thus rejoins the positions of the Cartesian/Western Logos, which some of its exponents indeed claim to have 'closed'.[6] Epistemological thought, in concert with the linguists' theoretical efforts, has reached a curious conclusion. It has eliminated the 'collective subject', the people as creator of a particular language, as carrier of specific etymological sequences. It has set aside the concrete subject, that subject which took over from a name-giving god. It has promoted the impersonal pronoun 'one' as creator of language in general, as creator of the system. It has failed, however, to eliminate the need for a subject of some kind. Hence the re-emergence of the abstract subject, the *cogito* of the philosophers. Hence the new lease on life of traditional philosophy in 'neo-' forms: neo-Hegelian, neo-Kantian, neo-Cartesian. This revival has profited much from the help of Husserl, whose none-too-scrupulous postulation of a (quasi-tautologous) identity of knowing Subject and conceived Essence – an identity inherent to a 'flux' (of lived experience) – underpins an almost 'pure' identity of formal and practical knowledge.[7] Nor should we be surprised to find the eminent linguist Noam Chomsky reinstating the Cartesian *cogito* or subject,[8] especially in view of the fact that he has posited the existence

[5] *L'archéologie du savoir* (Paris: Gallimard, 1969), p. 238. Elsewhere in the same work, Foucault speaks of 'the trajectory of a meaning' (*le parcours d'un sens*) (p. 196), of 'space of dissensions' (p. 200), etc. Eng. tr. by A. M. Sheridan Smith: *The Archaeology of Knowledge* (London: Tavistock, 1972), pp. 182, 150, 152 respectively.

[6] See Jacques Derrida, *Le vivre et le phénomène* (Paris: Presses Universitaires de France, 1967).

[7] See Michel Clouscard's critical remarks in the introduction to his *L'être et le code*. Lenin resolved this problem by brutally suppressing it: in *Materialism and Empirio-Criticism*, he argues that the thought of space reflects objective space, like a copy or photograph.

[8] See his *Cartesian Linguistics: A Chapter in the History of Rationalist Thought* (New York: Harper and Row, 1966).

of a linguistic level at which 'it will not be the case that each sentence is represented simply as a finite sequence of elements of some sort, generated from left to right by some simple device'; instead, argues Chomsky, we should expect to find 'a *finite* set of levels ordered from high to low'.[9] The fact is that Chomsky unhesitatingly postulates a mental space endowed with specific properties – with orientations and symmetries. He completely ignores the yawning gap that separates this linguistic mental space from that social space wherein language becomes practice. Similarly, J. M. Rey writes that 'Meaning presents itself as the legal authority to interchange signified elements along a single horizontal chain, within the confines [*l'espace*] of a coherent system regulated and calculated in advance.'[10] These authors, and many others, for all that they lay claim to absolute logical rigour, commit what is in fact, from the logico-mathematical point of view, the perfect paralogism: they leap over an entire area, ignoring the need for any logical links, and justify this in the vaguest possible manner by invoking, as the need arises, some such notion as *coupure* or rupture or break. They thus interrupt the continuity of their argument in the name of a discontinuity which their own methodology ought logically to prohibit. The width of the gap created in this way, and the extent of its impact, may of course vary from one author to another, or from one area of specialization to another. My criticism certainly applies in full force, however, to Julia Kristeva's σημειωτική, to Jacques Derrida's 'grammatology', and to Roland Barthes's general semiology.[11] This school, whose growing renown may have something to do with its growing dogmatism, is forever promoting the basic sophistry whereby the philosophico-epistemological notion of space is fetishized and the mental realm comes to envelop the social and physical ones. Although a few of these authors suspect the existence of, or the need of, some mediation,[12] most of them

[9] Noam Chomsky, *Syntactic Structures* (The Hague: Mouton, 1957), pp. 24–5.

[10] J. M. Rey, *L'enjeu des signes* (Paris: Seuil, 1971), p. 13.

[11] And it extends to others, whether on their own account or via those mentioned here. Thus Barthes on Jacques Lacan: 'His topology does not concern *within* and *without*, even less *above* and *below*; it concerns, rather, a reverse and an obverse in constant motion – a front and back forever changing places as they revolve around something which is in the process of transformation, and which indeed, to begin with, *is not*' – *Critique et vérité* (Paris: Seuil, 1966), p. 27.

[12] This is certainly not true of Claude Lévi-Strauss, the whole of whose work implies that from the earliest manifestations of social life mental and social were conflated by virtue of the nomenclature of the relationships of exchange. By contrast, when Derrida gives precedence to the 'graphic' over the 'phonic', to writing over speech, or when Kristeva brings the body to the fore, clearly some search is being made for a transition or articulation between, on the one hand, the mental space previously posited (i.e. presupposed) by these authors, and, on the other hand, physical/social space.

spring without the slightest hesitation from mental to social.

What is happening here is that a powerful ideological tendency, one much attached to its own would-be scientific credentials, is expressing, in an admirably unconscious manner, those dominant ideas which are perforce the ideas of the dominant class. To some degree, perhaps, these ideas are deformed or diverted in the process, but the net result is that a particular 'theoretical practice' produces a *mental space* which is apparently, but only apparently, extra-ideological. In an inevitably circular manner, this mental space then becomes the locus of a 'theoretical practice' which is separated from social practice and which sets itself up as the axis, pivot or central reference point of Knowledge.[13] The established 'culture' reaps a double benefit from this manoeuvre: in the first place, the impression is given that the truth is tolerated, or even promoted, by that 'culture'; secondly, a multitude of small events occur within this mental space which can be exploited for useful or polemical ends. I shall return later to the peculiar kinship between this mental space and the one inhabited by the technocrats in their silent offices.[14] As for Knowledge thus defined on the basis of epistemology, and more or less clearly distinguished from ideology or from evolving science, is it not directly descended from the union between the Hegelian Concept and that scion of the great Cartesian family known as Subjectivity?

The quasi-logical presupposition of an identity between mental space (the space of the philosophers and epistemologists) and real space creates an abyss between the mental sphere on one side and the physical and social spheres on the other. From time to time some intrepid funambulist will set off to cross the void, giving a great show and sending a delightful shudder through the onlookers. By and large, however, so-called philosophical thinking recoils at the mere suggestion of any such *salto mortale*. If they still see the abyss at all, the professional philosophers avert their gaze. No matter how relevant, the problem of knowledge and the 'theory of knowledge' have been abandoned in favour of a reductionistic return to an absolute – or supposedly absolute – knowledge, namely the knowledge of the history of philosophy and the history of science. Such a knowledge can only be conceived of as separate from both ideology and non-knowledge (i.e. from lived experience). Although any separation of that kind is in fact impossible, to evoke one poses no threat to – and indeed tends to reinforce – a banal 'consensus'. After

[13] This pretension is to be met with in every single chapter of the *Panorama des sciences humaines* (above, note 4).

[14] See also my *Vers le cybernanthrope* (Paris: Denoël-Gonthier, 1971).

all, who is going to take issue with the True? By contrast, we all know, or think we know, where discussions of truth, illusion, lies, and appearance-*versus*-reality are liable to lead.

IV [Possibility of a Science of Space]

Epistemologico-philosophical thinking has failed to furnish the basis for a science which has been struggling to emerge for a very long time, as witness an immense accumulation of research and publication. That science is – or would be – a *science of space*. To date, work in this area has produced either mere descriptions which never achieve analytical, much less theoretical, status, or else fragments and cross-sections of space. There are plenty of reasons for thinking that descriptions and cross-sections of this kind, though they may well supply inventories of what *exists in* space, or even generate a *discourse on* space, cannot ever give rise to a *knowledge of* space. And, without such a knowledge, we are bound to transfer onto the level of discourse, of language *per se* – i.e. the level of mental space – a large portion of the attributes and 'properties' of what is actually social space.

Semiology raises difficult questions precisely because it is an incomplete body of knowledge which is expanding without any sense of its own limitations; its very dynamism creates a need for such limits to be set, as difficult as that may be. When codes worked up from literary texts are applied to spaces – to urban spaces, say – we remain, as may easily be shown, on the purely descriptive level. Any attempt to use such codes as a means of deciphering social space must surely reduce that space itself to the status of a *message*, and the inhabiting of it to the status of a *reading*. This is to evade both history and practice. Yet did there not at one time, between the sixteenth century (the Renaissance – and the Renaissance city) and the nineteenth century, exist a code at once architectural, urbanistic and political, constituting a language common to country people and townspeople, to the authorities and to artists – a code which allowed space not only to be 'read' but also to be constructed? If indeed there was such a code, how did it come into being? And when, how and why did it disappear? These are all questions that I hope to answer in what follows.

As for the above-mentioned sections and fragments, they range from the ill-defined to the undefined – and thence, for that matter, to the undefinable. Indeed, talk of cross-sectioning, suggesting as it does a scientific technique (or 'theoretical practice') designed to help clarify

and distinguish 'elements' within the chaotic flux of phenomena, merely adds to the muddle. Leaving aside for the moment the application of mathematical topologies to other realms, consider how fond the cognoscenti are of talk of pictural space, Picasso's space, the space of *Les demoiselles d'Avignon* or the space of *Guernica*. Elsewhere we are forever hearing of architectural, plastic or literary 'spaces'; the term is used much as one might speak of a particular writer's or artist's 'world'. Specialized works keep their audience abreast of all sorts of equally specialized spaces: leisure, work, play, transportation, public facilities – all are spoken of in spatial terms.[15] Even illness and madness are supposed by some specialists to have their own peculiar space. We are thus confronted by an indefinite multitude of spaces, each one piled upon, or perhaps contained within, the next: geographical, economic, demographic, sociological, ecological, political, commercial, national, continental, global. Not to mention nature's (physical) space, the space of (energy) flows, and so on.

Before any specific and detailed attempt is made to refute one or other of these approaches, along with whatever claim it may have to scientific status, it should be pointed out that the very multiplicity of these descriptions and sectionings makes them suspect. The fact is that all these efforts exemplify a very strong – perhaps even the dominant – tendency within present-day society and its mode of production. Under this mode of production, intellectual labour, like material labour, is subject to endless division. In addition, spatial practice consists in a projection onto a (spatial) field of all aspects, elements and moments of social practice. In the process these are separated from one another, though this does not mean that overall control is relinquished even for a moment: society as a whole continues in subjection to political practice – that is, to state power. This praxis implies and aggravates more than one contradiction, and I shall be dealing with them later. Suffice it to say at this juncture that if my analysis turns out to be correct it will be possible to claim of the sought-for 'science of space' that

1 it represents the political (in the case of the West, the 'neocapitalist') use of knowledge. Remember that knowledge under this system is integrated in a more or less 'immediate' way into the forces of production, and in a 'mediate' way into the social relations of production.

[15] [English-speaking experts tend perhaps not to use the word 'space' with quite the same facility as their French-speaking counterparts use the word *espace*, but they do have a corresponding fondness for such spatial terms as 'sector' and 'sphere' – *Translator*.]

2 it implies an ideology designed to conceal that use, along with the conflicts intrinsic to the highly interested employment of a supposedly disinterested knowledge. This ideology carries no flag, and for those who accept the practice of which it is a part it is indistinguishable from knowledge.
3 it embodies at best a technological utopia, a sort of computer simulation of the future, or of the possible, within the framework of the real – the framework of the existing mode of production. The starting-point here is a knowledge which is at once integrated into, and integrative with respect to, the mode of production. The technological utopia in question is a common feature not just of many science-fiction novels, but also of all kinds of projects concerned with space, be they those of architecture, urbanism or social planning.

The above propositions need, of course, to be expounded, supported by logical arguments and shown to be true. But, if they can indeed be verified, it will be in the first place because there is a *truth of space*, an overall truth generated by analysis-followed-by-exposition, and not because a *true space* can be constituted or constructed, whether a general space as the epistemologists and philosophers believe, or a particular one as proposed by specialists in some scientific discipline or other which has a concern with space. In the second place, confirmation of these theses will imply the necessity of reversing the dominant trend towards fragmentation, separation and disintegration, a trend subordinated to a centre or to a centralized power and advanced by a knowledge which works as power's proxy. Such a reversal could not be effected without great difficulty; nor would it suffice, in order to carry it through, to replace local or 'punctual' concerns by global ones. One must assume that it would require the mobilization of a great many forces, and that in the actual course of its execution there would be a continuing need, stage by stage, for motivation and orientation.

V [CAPITALISM INFLUENCES SPACE]

Few people today would reject the idea that capital and capitalism 'influence' practical matters relating to space, from the construction of buildings to the distribution of investments and the worldwide division

of labour. But it is not so clear what is meant exactly by 'capitalism' and 'influence'. What some have in mind is 'money' and its powers of intervention, or commercial exchange, the commodity and its generalization, in that 'everything' can be bought and sold. Others are concerned rather with the actors in these dramas: companies national and multinational, banks, financiers, government agencies, and so on. In either case both the unity and the diversity – and hence the contradictions – of capitalism are put in brackets. It is seen either as a mere aggregate of separate activities or else as an already constituted and closed system which derives its coherence from the fact that it endures – and solely from that fact. Actually capitalism has many facets: landed capital, commercial capital, finance capital – all play a part in practice according to their varying capabilities, and as opportunity affords; conflicts between capitalists of the same kind, or of different kinds, are an inevitable part of the process. These diverse breeds of capital, and of capitalists, along with a variety of overlapping markets – commodities, labour, knowledge, capital itself, land – are what together constitute capitalism.

Many people are inclined to forget that capitalism has yet another aspect, one which is certainly bound up with the functioning of money, with the various markets, and with the social relations of production, but which is distinct from these precisely because it is dominant. This aspect is the *hegemony* of one class. The concept of hegemony was introduced by Gramsci in order to describe the future role of the working class in the building of a new society, but it is also useful for analysing the action of the bourgeoisie, especially in relation to space. The notion is a refinement of the somewhat cruder concept of the 'dictatorship' first of the bourgeoisie and then of the proletariat. Hegemony implies more than an influence, more even than the permanent use of repressive violence. It is exercised over society as a whole, culture and knowledge included, and generally via human mediation: policies, political leaders, parties, as also a good many intellectuals and experts. It is exercised, therefore, over both institutions and ideas. The ruling class seeks to maintain its hegemony by all available means, and knowledge is one such means. The connection between knowledge (*savoir*) and power is thus made manifest, although this in no way interdicts a critical and subversive form of knowledge (*connaissance*); on the contrary, it points up the antagonism between a knowledge which serves power and a form of knowing which refuses to acknowledge power.[16]

[16] This is an antagonistic and hence *differentiating* distinction, a fact which Michel Foucault evades in his *Archéologie du savoir* by distinguishing between *savoir* and *connaissance* only within the context of an *espace du jeu* or 'space of interplay' (Fr. edn, p. 241; Eng. tr., p. 185), and on the basis of chronology or 'distribution in time' (Fr. edn, p. 244; Eng. tr., p. 187). [The *savoir/connaissance* distinction cannot be conveniently expressed in English. Its significance should be clear from the discussion here; see also below pp. 367–8. Wherever the needs of clarity seemed to call for it, I have indicated in parentheses whether 'knowledge' renders *savoir* or *connaissance* – *Translator*.]

Is it conceivable that the exercise of hegemony might leave space untouched? Could space be nothing more than the passive locus of social relations, the milieu in which their combination takes on body, or the aggregate of the procedures employed in their removal? The answer must be no. Later on I shall demonstrate the active – the operational or instrumental – role of space, as knowledge and action, in the existing mode of production. I shall show how space serves, and how hegemony makes use of it, in the establishment, on the basis of an underlying logic and with the help of knowledge and technical expertise, of a 'system'. Does this imply the coming into being of a clearly defined space – a capitalist space (the world market) thoroughly purged of contradictions? Once again, the answer is no. Otherwise, the 'system' would have a legitimate claim to immortality. Some over-systematic thinkers oscillate between loud denunciations of capitalism and the bourgeoisie and their repressive institutions on the one hand, and fascination and unrestrained admiration on the other. They make society into the 'object' of a systematization which must be 'closed' to be complete; they thus bestow a cohesiveness it utterly lacks upon a totality which is in fact decidedly open – so open, indeed, that it must rely on violence to endure. The position of these systematizers is in any case self-contradictory: even if their claims had some validity they would be reduced to nonsense by the fact that the terms and concepts used to define the system must necessarily be mere tools of that system itself.

VI

The theory we need, which fails to come together because the necessary critical moment does not occur, and which therefore falls back into the state of mere bits and pieces of knowledge, might well be called, by analogy, a 'unitary theory': the aim is to discover or construct a theoretical unity between 'fields' which are apprehended separately, just as molecular, electromagnetic and gravitational forces are in physics. The fields we are concerned with are, first, the *physical* – nature, the Cosmos; secondly, the *mental*, including logical and formal abstractions; and, thirdly, the *social*. In other words, we are concerned with logico-epis-

temological space, the space of social practice, the space occupied by sensory phenomena, including products of the imagination such as projects and projections, symbols and utopias.

The need for unity may be expressed in other ways too, ways that serve to underscore its importance. Reflection sometimes conflates and sometimes draws distinctions between those 'levels' which social practice establishes, in the process raising the question of their interrelationships. Thus housing, habitation – the human 'habitat', so to speak – are the concern of architecture. Towns, cities – urban space – are the bailiwick of the discipline of urbanism. As for larger, territorial spaces, regional, national, continental or worldwide, these are the responsibility of planners and economists. At times these 'specializations' are telescoped into one another under the auspices of that privileged actor, the politician. At other times their respective domains fail to overlap at all, so that neither common projects nor theoretical continuity are possible.

This state of affairs, of which the foregoing remarks do not claim to be a full critical analysis, would be brought to an end if a truly unitary theory were to be developed.

Our knowledge of the material world is based on concepts defined in terms of the broadest generality and the greatest scientific (i.e. having a content) abstraction. Even if the links between these concepts and the physical realities to which they correspond are not always clearly established, we do know that such links exist, and that the concepts or theories they imply – energy, space, time – can be neither conflated nor separated from one another. What common parlance refers to as 'matter', 'nature' or 'physical reality' – that reality within which even the crudest analysis must discern and separate different moments – has thus obviously achieved a certain unity. The 'substance' (to use the old vocabulary of philosophy) of this cosmos or 'world', to which humanity with its consciousness belongs, has properties that can be adequately summed up by means of the three terms mentioned above. When we evoke 'energy', we must immediately note that energy has to be deployed within a space. When we evoke 'space', we must immediately indicate what occupies that space and how it does so: the deployment of energy in relation to 'points' and within a time frame. When we evoke 'time', we must immediately say what it is that moves or changes therein. Space considered in isolation is an empty abstraction; likewise energy and time. Although in one sense this 'substance' is hard to conceive of, most of all at the cosmic level, it is also true to say that evidence of its existence stares us in the face: our senses and our thoughts apprehend nothing else.

Might it not be possible, then, to found our knowledge of social practice, and the general science of so-called human reality, on a model borrowed from physics? Unfortunately not. For one thing, this kind of approach has always failed in the past.[17] Secondly, following the physical model would prevent a theory of societies from using a number of useful procedures, notably the separation of levels, domains and regions. Physical theory's search for unity puts all the emphasis on the bringing-together of disparate elements. It might therefore serve as a guardrail, but never as a paradigm.

The search for a unitary theory in no way rules out conflicts within knowledge itself, and controversy and polemics are inevitable. This goes for physics, and mathematics too, for that matter; sciences that philosophers deem 'pure' precisely because they have purged them of dialectical moments are not thereby immunized against internal conflicts.

It seems to be well established that physical space has no 'reality' without the energy that is deployed within it. The modalities of this deployment, however, along with the physical relationships between central points, nuclei or condensations on the one hand and peripheries on the other are still matters for conjecture. A simple expanding-universe theory assumes an original dense core of matter and a primordial explosion. This notion of an original unity of the cosmos has given rise to many objections by reason of its quasi-theological or theogonic character. In opposition to it, Fred Hoyle has proposed a much more complex theory, according to which energy, whether at the level of the ultra-small or at that of the ultra-large, travels in every direction. On this view a single centre of the universe, whether original or final, is inconceivable. Energy/space–time condenses at an indefinite number of points (local space–times).[18]

To the extent that the theory of supposedly human space can be linked at all to a physical theory, perhaps Hoyle's is the one which best fits the bill. Hoyle looks upon space as the product of energy. Energy cannot therefore be compared to a content filling an empty container. Causalism and teleology, inevitably shot through with metaphysical abstraction, are both ruled out. The universe is seen as offering a multiplicity of particular spaces, yet this diversity is accounted for by a unitary theory, namely cosmology.

Space as the product of Energy

This analogy has its limits, however. There is no reason to assume an

[17] Including Claude Lévi-Strauss's attempts to draw for models on Mendeleev's classification of the elements and on general combinatorial mathematics.

[18] See Fred Hoyle, *Frontiers of Astronomy* (New York: Harper and Brothers, 1955).

isomorphism between social energies and physical energies, or between 'human' and physical fields of force. This is one form of reductionism among others which I shall have occasion explicitly to reject. All the same, human societies, like living organisms human or extra-human, cannot be conceived of independently of the universe (or of the 'world'); nor may cosmology, which cannot annex knowledge of those societies, leave them out of its picture altogether, like a state within the state.

[ABSTRACT SPACE & PRODUCTION OF SPACE] (VII)

What term should be used to describe the division which keeps the various types of space away from each other, so that physical space, mental space and social space do not overlap? Distortion? Disjunction? Schism? Break? As a matter of fact the term used is far less important than the distance that separates 'ideal' space, which has to do with mental (logico-mathematical) categories, from 'real' space, which is the space of social practice. In actuality each of these two kinds of space involves, underpins and presupposes the other.

What should be the starting-point for any theoretical attempt to account for this situation and transcend it in the process? Not philosophy, certainly, for philosophy is an active and interested party in the matter. Philosophers have themselves helped bring about the schism with which we are concerned by developing abstract (metaphysical) representations of space, among them the Cartesian notion of space as absolute, infinite *res extensa*, a divine property which may be grasped in a single act of intuition because of its homogeneous (isotropic) character. This is all the more regrettable in view of the fact that the beginnings of philosophy were closely bound up with the 'real' space of the Greek city. This connection was severed later in philosophy's development. Not that we can have no recourse to philosophy, to its concepts or conceptions. But it cannot be our point of departure. What about literature? Clearly literary authors have written much of relevance, especially descriptions of places and sites. But what criteria would make certain texts more relevant than others? Céline uses everyday language to great effect to evoke the space of Paris, of the Parisian *banlieue*, or of Africa. Plato, in the *Critias* and elsewhere, offers marvellous descriptions of cosmic space, and of the space of the city as a reflection of the Cosmos. The inspired De Quincey pursuing the shadow of the woman of his dreams through the streets of London, or Baudelaire in his *Tableaux parisiens*, offer us accounts of urban space rivalling those of

Victor Hugo and Lautréamont. The problem is that any search for space in literary texts will find it everywhere and in every guise: enclosed, described, projected, dreamt of, speculated about. What texts can be considered special enough to provide the basis for a 'textual' analysis? Inasmuch as they deal with socially 'real' space, one might suppose on first consideration that architecture and texts relating to architecture would be a better choice than literary texts proper. Unfortunately, any definition of architecture itself requires a prior analysis and exposition of the concept of space.

Another possibility would be to take *general* scientific notions as a basis, notions as general as that of text, like those of information and communication, of message and code, and of sets of signs – all notions which are still being developed. The danger here is that the analysis of space might become enclosed within a single area of specialization, which, so far from helping us account for the dissociations mentioned above, would merely exacerbate them. This leaves only *universal* notions, which seemingly belong to philosophy but not to any particular specialization. Do such notions exist? Does what Hegel called the concrete universal still have any meaning? I hope to show that it does. What can be said without further ado is that the concepts of *production* and of the *act of producing* do have a certain abstract universality. Though developed by philosophers, these concepts extend beyond philosophy. They were taken over in the past, admittedly, by specialized disciplines, especially by political economy; yet they have survived that annexation. By retrieving something of the broad sense that they had in certain of Marx's writings, they have shed a good deal of the illusory precision with which the economists had endowed them. This is not to say that it will be easy to recover these concepts and put them back to work. To speak of 'producing space' sounds bizarre, so great is the sway still held by the idea that empty space is prior to whatever ends up filling it. Questions immediately arise here: what spaces? and what does it mean to speak of 'producing space'? We are confronted by the problem of how to bring concepts that have already been worked out and formalized into conjunction with this new content without falling back on mere illustration and example – notorious occasions for sophistry. What is called for, therefore, is a thoroughgoing exposition of these concepts, and of their relations, on the one hand with the extreme formal abstraction of logico-mathematical space, and on the other hand with the practico-sensory realm of social space. To proceed otherwise would result in a new fragmentation of the concrete universal into its original Hegelian moments: the *particular* (in this case descriptions or