

NEIL SMITH

Uneven Development

Nature, Capital, and the Production of Space

Third Edition

With a new afterword by the author and a foreword by David Harvey

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CHAPTER FOUR

Toward a Theory of Uneven Development I

The Dialectic of Geographical Differentiation and Equalization

IN LITTLE MORE THAN A DECADE, the uneven development of capitalism has become a popular even fashionable topic for research. The reason for this undoubtedly has to do with the general resurgence of interest in marxism following the social uprisings of the 1960s, and the fact that today the process of uneven development presents itself in more vivid detail at all spatial scales than in any previous period. There is virtual consensus concerning the necessity of understanding this seemingly recent phenomenon and a rapidly growing literature on the subject has already begun to appear. To date, however, this new research is characterized by a paucity of theoretical treatments seeking to understand uneven development in the context of a marxist (or non-marxist) analysis of capitalist development.¹ It is this task which is taken up here.

The starting point is given in the previous chapter where it was seen that the contradictory tendencies toward differentiation and equalization determined the capitalist production of space. In action, this contradiction emanating from the core of the capitalist mode of production inscribes itself in the landscape as the extant pattern of uneven development.

Before embarking on this analysis, it is necessary to make absolutely clear what we are and what we are not talking about; “uneven development” means many things to many people, depending mostly upon the historical context in which it was used. In the marxist tradition, reaching back to Lenin, the concept is employed variously in an economic, political, and philosophical sense, and in the introduction to *Grundrisse* Marx throws off a comment on the uneven development of material vis-à-vis artistic production, and on the uneven development of relations of production vis-à-vis legal relations. In a reminder essentially to himself, Marx noted that these issues should be treated concretely and not in the “usual abstractness.”² Marx’s exhortation about the concrete is undoubtedly correct, but the generality of his examples would be misleading if taken as a research agenda. In order to treat these issues more concretely it is necessary to establish first the economic—or more correctly, the political economic—basis of the uneven development of capitalism in the opposing tendencies toward differentiation and equalization. We shall limit ourselves here to establishing this political economic basis of uneven development.³

From the preceding chapters it should also be clear that we are concerned with the specifically capitalist process and pattern of uneven development. This would seem self-evident and barely worth repeating if not that even the most astute theorists have insisted on the historical and philosophical universality of the phenomenon. Uneven development, it is asserted, is a “universal law of human history,” or more abstract still, it is “the essence of contradiction.”⁴ Consensus over uneven development is therefore achieved at a price; the potentially penetrating insights of the theory are dissolved when uneven development is seen as a universal metaphysics, its meaning reduced to a lowest common denominator.

This philosophical approach not only denies valuable theoretical opportunities but much more important, it is historically erroneous. Marx recognized the universality of labor as a natural attribute of human existence but his entire analysis of capitalism depended on separating the natural propensity to labor from the socially and historically determined forms of the labor process under the capitalist mode of production. It is a hallmark of bourgeois ideology, indeed, to universalize the specific social forms and relations of the capitalist mode of production into permanent, “natural” relations. This holds for “uneven development.” As a philosophical universal its critical, epistemological cutting edge is not only blunted, but is potentially turned back on its user as a reactionary ideological weapon lurking within the corpus of marxism itself. It is not, as Ernest Mandel suggests, the “capitalist world system” that is a “*function* of the universal validity of the law of unequal and combined development”;⁵ rather, it is uneven development that is a function of the contemporary universality of capitalism.

There is no suggestion in all this, finally, that pre-capitalist development was somehow even rather than uneven. What is implied is that whatever the reasons for the unevenness of pre-capitalist development, they are quite different from those pertaining to capitalism, which has its own distinct geography. The geography of capitalism is more systematically and completely an integral part of the mode of production than was the case with any earlier mode of production.

If the present enthusiasm surrounding uneven development is not to lead into a “so-what” cul-de-sac where only the obvious is stated, but is instead to reveal fundamental insights about the geography of capitalism and about the structure and development of capitalism in general, then the process must be kept in sharp focus. This is why, in preparation for the analysis of uneven development, we have been so concerned to sort out a conception of space. As it is commonly used, “uneven development” refers not simply to the geography of capitalism but also to uneven rates of growth between different sectors of the capitalist economy. In equating uneven development here with its particularly geographical

expression, there is no attempt to deny the other aspects of the process. This is done to redress the trenchant neglect of the spatial dimension of capitalist development, and to emphasize in practice the conclusion from the previous chapter that spatial unevenness has no meaning except as part of the larger contradictory development of capitalism. It may be that this is bending the stick back too far, and that is certainly a risk. But without bending the stick, it is impossible to tell whether it is bent too far.

I. The Tendency Toward Differentiation

THE NATURAL BASIS OF DIFFERENTIATION

The division of labor in society is the historical basis of the spatial differentiation of levels and conditions of development. The spatial or territorial division of labor is not a separate process but is implied from the start in the concept of the division of labor. Marx was acutely aware of this, as witnessed by his often repeated but scarcely understood comment about town and country being the foundation of every well-developed division of labor based on commodity exchange. And if one examines the earliest division of labor—the sexual division of labor between men and women—this too is generally thought to have had a territorial expression, males generally beginning to develop a spatially wider domain.⁶

For most of human history, the division of labor has been based upon differentiation of natural conditions. “The possibility of surplus-labour and of surplus-value,” Marx wrote, “arises from a given productivity of labour” which appears first “as a gift of nature, a productive power of nature.”⁷ Given different natural conditions, the same expenditure of labor will result in different quantities of a given commodity, and this implies the possibility (but only the possibility) of surplus product in one place though not in another. Further, the qualitative differentiation of nature sets certain limits upon which production processes can take place in a given area. Thus cotton cannot be grown naturally in the Arctic, and coal cannot be extracted from geological strata that contain

none. This is the natural basis to surplus product. It is also the natural basis to the division of labor which, for its development, is entirely dependent upon the production of surplus product. In a more developed economy, the appropriation of natural advantage ceases to be accidental. Indeed, natural differences are internalized as the basis for a systematic social differentiation of the labor process. Qualitative differences in nature translate into qualitative and quantitative differences in societal organization; the societal division of labor expresses itself spatially.

The more advanced division of labor between agriculture and industry is equally a spatial phenomenon. The division of labor itself is now the result of a social dynamic—the productive consumption of surplus product and the progressive development of the productive forces—but it continues to express itself according to given natural conditions. That is, there is nothing in nature that impels a division between agriculture and industry, but once this social division emerges the inherent differentiation of nature affects which activities will take place where. The same principle applies not just for the general division between agriculture and industry but also for the internal subdivision of these major sectors. The location of different agricultural sectors takes place in relation to different natural conditions, and the same is true of different industrial sectors which are influenced more by locational differentiation in the availability of raw and auxiliary materials.

This sort of explanation—explaining the geographic location of social activities according to differentiations in nature—is the stock-in-trade of traditional geography. Well into the present century, and to a considerable extent even up to the present day, the priority of nature and of inherent differentiations within nature have been canonized in the study of geography. The environmental determinism that thrived particularly in the American school of geography was only an extreme version of the conventional wisdom that natural geographic conditions determined to a greater or lesser extent the type and location of human activities. As a research agenda, environmental determinism was never entirely hegemonic, and was superseded by a less dogmatic concern to study “areal

differentiation.” Borrowed from the German school of geography, where Hettner was concerned to explain composite geographical variations across the earth’s surface as the result of natural variations, the concept of “areal differentiation” was at the center of the American geographical tradition at least until 1960. This length of tenure was due not only to a certain stagnation in geographic thought, but to the stature within the discipline of two of the concept’s major proponents. It was Carl Sauer, in 1925, who seems first to have discussed “areal differentiation” *per se*, and Hartshorne was one of its most enthusiastic proponents. By 1960, purely natural explanations for areal differentiation were no longer so prevalent, though the tradition did retain clear signs of its origins in Hettner. In all of these traditions, the spatial concentration of wealth was seen as first and foremost the result of natural differentiation in physiography, resources, climate, etc.⁸

But the most explicit and at the same time most sophisticated attempt to relate differentiations in natural endowment with the spatial concentration of capital comes from commercial geography. Of mainly British origin, “commercial geography” described the variety of products derived from different nations and regions of the world, and attempted to explain the different patterns of agricultural and industrial production on the basis of different natural endowments. This led not only to preliminary explanations of exports and imports from a nation or region, but also to the definition of specific regions according to what they produced. This led to the familiar regional geography which, almost until the present day, has been the staple of high-school curricula. Urban and regional concentrations of industrial capital were explained as resulting from the proximity of specific raw materials, natural routes, and the like, whereas agricultural concentrations of capital resulted from the particular character of the soil, the climate, or the physiography. Thus the Pittsburgh-Youngstown-Cleveland region was seen to result from the proximity of coal and iron ore particularly; the Lancashire cotton region results from the suitable climate, the proximity of ports, and the existing tradition of textile manufacturing due to the rearing of

sheep on the neighboring hillsides; and New York owes its location to its abundance of waterfront space, the deep inland penetration of the Hudson-Mohawk river system, and its granite bedrock suitable for the construction of large wharves. Hence also, the agricultural geography of the United States is explained in terms of a “cotton belt,” a “hog belt,” a “spring wheat belt,” a “cattle belt,” the fruit-growing areas of California, Florida, and the Pacific northwest, and so on. And the trade between these areas was naturally explained according to the surpluses of the specific commodities produced in each region.

This type of explanation was often taken one step further, and applied not just to the economic differentiation between regions but also to the political differentiation between nations. Thus geographers and not a few historians were wont to explain Britain’s imperial hegemony in the nineteenth century as a result of its massive sea power which was in turn due to its being an island nation with no alternative but to turn to the sea. Hence Sir Halford J. Mackinder, father of the new nineteenth-century school of British geography, and Member of Parliament, writing in 1919:

The great wars of history . . . are the outcome, direct or indirect, of the unequal growth of nations, and that unequal growth is not wholly due to the greater genius and energy of some nations as compared with others; in large measure it is the result of the uneven distribution of fertility and strategical opportunity upon the face of the globe. In other words, there is in nature no such thing as equality of opportunity for the nations. Unless I wholly misread the facts of geography, I would go further, and say that the grouping of lands and seas, and of fertility and natural pathways, is such as to lend itself to the growth of empires, and in the end of a single world-empire.⁹

All of this due to nature!

The commercial geography upon which this political geography was based was itself based on very clear principles concerning the way in which natural advantage dictated the territorial division of labor. These principles were perfectly expressed in the definitive work on the subject,

George Chisholm’s *Handbook of Commercial Geography*, which was first published in 1889:

The great geographical fact upon which commerce depends is that different parts of the world yield different products, or furnish the same products under unequally favourable conditions. . . . If there is any permanent benefit to mankind at large (from rapid economic development and concomittent social disturbances) the full advantage of this nature is not reaped until every kind of production is carried on in the place that has the greatest natural advantage for the supply of a particular market. By natural advantages are meant such as these—a favourable soil and climate, the existence of facilities for communication external and internal as far as these lie in the nature of the surface and physical features, the existence of valuable minerals in favourable situations, and especially of the materials for making and driving machinery, these being the products which are least able to bear the cost of carriage. All these advantages are more or less permanent. . . . With natural advantage may be contrasted historical advantages, which are in their nature more temporary, though they are often in fact of long continuance. Perhaps the most important of all is a strong and stable government based on just and fixed principles not hostile to industry. . . . The commerce and industry of the world have for more than a hundred years been in a transition stage the like of which has never been known before. Communications are being improved, the means of production are being accelerated and cheapened, uncultivated lands are being settled, and primitive peoples introduced to the inventions of the white races with a rapidity hitherto unparalleled—with incidental results, as we have seen, not always the most desirable. Commerce and industry thus tend to be governed more and more by geographical conditions. . . . The opening up of the entire world by improved means of communication is leading capitalists to search out every part where development is possible and to remove obstacles to development wherever that can be done, but the very fact that man is acquiring great power in dealing with nature makes clear the limit beyond which he cannot pass in his modifications of the original conditions. . . . The tendency of which we are now speaking toward an ultimate

prevalence of geographical conditions in determining the distribution of commerce and industry is, it is true, a tendency toward a remote result.¹⁰

Today's geographers no longer have such confidence in the world-historic importance of their discipline, or in its destiny. Just as commercial geography and Mackinder's kind of political geography were means of understanding and promoting the rise of empire, so their fate followed the fate of empire. The demise of the British empire brought about the demise of this geography. The commercial and regional geography referred to above no longer occupies a central place in the discipline, but has been superseded by a more abstract concern for space, ushered in by the so-called quantitative and relevance revolutions of the 1960s and 1970s. What then of the claim that there is a tendency toward the ultimate prevalence of natural geographic conditions in determining the distribution of commerce and industry?

The principle of natural advantage, adhered to by traditional commercial and regional geographers, claims to explain more than it in fact does. In the end, such explanations of the concentration and centralization of economic activity are only half-truths. They may, and usually do, explain adequately the fact of initial development in a certain place but by no means explain the quantity or quality of subsequent development. The present reality of New York City, such an impressive symbol of the productiveness of human activity, has long since outgrown any naturalistic explanation based on bedrock or physical accessibility. With the development of the productive forces under capitalism, the logic behind geographic location retreats more and more from such natural considerations. The reason for this is twofold. What tied economic development to natural conditions was first the difficulty of overcoming distance, and second the necessity of close proximity to raw materials. With the development of the means of transportation, the first natural obstacle (distance) diminishes in importance. With the general increase in the productive forces, the second also becomes less important, since raw materials today are the product of an ever increasing number of

previous labor processes. One need think only of plastic, a raw material in a broad range of production processes. Ultimately, it originates as petroleum, but goes through a number of different labor processes before emerging as piping, furniture, clothing, or AstroTurf. For all but the first of these labor processes the raw material is an industrial product whose location is determined by the location of the productive forces and not at all by nature. Thus, although the world's petroleum-extraction industry remains totally tied to locations where petroleum is naturally available, the world's petrochemical industry is not similarly constrained, and does not cluster around the world's oilfields. This is a totally different situation from the days of early capitalism when the majority of raw materials were the direct products of agriculture or mining.

The concentration and centralization of capital in the built environment proceeds according to the *social* logic inherent in the process of capital accumulation, and this, we saw previously, leads towards a leveling of natural differences, at least insofar as they determine the location of economic activity. Or as Bukharin has written, in a tone reminiscent of Engels, "Important as the natural differences in the conditions of production may be, they recede more and more into the background compared with differences that are the outcome of the uneven development of productive forces."¹¹

Commercial geography was the geography of the age of commercial capital. As such it is no accident that it was further developed in Britain, the center of nineteenth-century commercial capital. The explanations offered by commercial geography are suitable, even insightful, for that age—an age of transition when capitalist economies inherited the geography of the natural economies of feudalism and other pre-capitalist modes of production. The territorial division of labor was indeed strongly influenced by, even rooted in, the natural differentiation of the earth. But with the emergence of capitalism, it is not just the society itself but also society's relation with nature that it revolutionized. The territorial division of labor is increasingly emancipated from its roots in nature and to the extent that it survives is provided with a new material

basis. Certainly, capitalism inherits a territorial division of labor rooted in natural differentiations, and this territorial division survives to a greater or lesser extent, but it survives as a relic subject to the dictates of a new society with a new set of forces tending toward the differentiation of the conditions and levels of development. To the extent that the old territorial division of labor remains, it does so by the good graces of capital.

The treatment of nature in traditional commercial and regional geography offers a further illustration of the ideology of nature discussed in the first chapter. In the hands of these geographers, nature is external and at best interacts with society. Frederick Jackson Turner offers a poetic view of this conception, if one that also illustrates Turner's ambiguous combination of myth and reality:

Thus civilization in America has followed the arteries made by geology, pouring an ever richer tide through them, until at last the slender paths of aboriginal intercourse have been broadened and interwoven into the complex mazes of modern commercial lines; the wilderness has been interpenetrated by lines of civilization ever more numerous.¹²

Whatever the ideological substance of this view, Turner recognizes with us the increased importance of commerce as against geology. For there is a direct contradiction between the emancipation from nature—or the stronger thesis of the production of nature—and the expectations of Chisholm, Stamp, and others that natural features would become increasingly important in explaining the distribution of industry and commerce. Nonetheless, this latter expectation was not entirely without a real basis. In fact it embodies a real truth that geographers have not yet disentangled from the discarded baggage of a historically obsolete geography. Actually, it is not the physical geography as such that grows in importance but, as was suggested in the previous chapter, it is the strictly spatial dimension of geography that grows in importance with the inexorable progress of capitalist development. And this spatial geography is socially produced, no longer a received natural pattern. Thus it

is no accident that since the quantitative/relevance “revolution” in geography, the discipline seems to have hatched a dual personality with the spatial analysis of environment increasingly separating itself from the consideration of human-environmental relations—space on one side, environment (physical and/or human) on the other. It is the societal mode of production which binds space and nature together into a single landscape.

DIFFERENTIATION AND THE DIVISION OF LABOR

The differentiation of geographical space, what we have so far called the territorial division of labor, emanates from the more general societal division of labor. But the question of the division of labor is about as complex as it is neglected, and so when we attempt to place the territorial division of labor into this more general framework, a further weave of complexity is added. We shall attempt to disentangle the separate threads in several stages. Marx made only passing reference to the territorial division of labor but attempted a more systematic discussion of the societal division of labor, and so it is there that we begin.

Particularly in his earlier writing, Marx traced the development of the division from its roots in nature up to the complex division experienced under capitalism. In *Capital* he distinguished between three separate scales at which the division of labor took place. He distinguished between the *general* division of labor (the division between major activities such as industry and agriculture), the division of labor in *particular* (the various subdivisions between different sectors of these general divisions), and the *detail* division of labor that takes place in the workshop between different detailed work processes. This distinction between different scales at which the division of labor occurs is not merely a philosophical distinction, but one brought into existence by the development of the specifically capitalist form of manufacturing. In particular, the systematic detail division of labor within the workshop, and its distinction from the division of labor at higher scales, is the exclusive product of capitalism.¹³

But the division of labor is not the only source of social differentiation Marx identifies. Among the others he discusses, the most important here are those pertaining to the division of capital. Thus he divides the economy into two departments—one devoted to producing means of production and the other producing means of subsistence—in order to examine the reproduction of capital. Further, he makes a crude distinction between individual capitals, because without such a distinction capitalist competition is incomprehensible. How important are these sources of differentiation, and how are they related to the division of labor?

Although there has been considerable interest in the advancing detail division of labor in recent years, and in the division of labor between the production of surplus value and the reproduction of labor power, there has been virtually no work done on the division of capital and its relationship to the division of labor. Without offering a definitive justification here, I would like to suggest a tripartite division of capital which parallels and in part coincides with the tripartite division of capital offered by Marx. Thus we can divide an economy into three scales: the division of capital into *departments*; the division of capital into *sectors*; and the division of capital into *individual* units of property employed as capital.

1. Departments of the economy are differentiated from each other at the scale of the general division of labor identified by Marx. Although Marx himself did not make this relationship explicit, it fits well with his intent in identifying the general division of labor. Departments are differentiated from each other according to the use-value of their products, specifically their use-value in the process of the reproduction of capital. Thus Marx distinguishes between Department I in which the means of production (fixed capital and circulating capital) are produced and Department II in which articles of individual consumption (necessities and luxuries) are produced. Marx employed this distinction in order to demonstrate the possibility of the sustained reproduction of capital, not at all as a definitive division of the economy. This has led others to add fur-

ther departments, specifically a Department III which produces articles for collective, non-productive consumption, such as military hardware.¹⁴ Other divisions might be possible if the intent is a definitive classification of the economy into departments. This was not Marx's intention nor is it ours here; it suffices at present to identify the level at which the economy is divided into departments.

2. Different sectors of the economy are traditionally defined by the immediate use-value of their product, for example, automobiles, construction, steel, electronics, education, and so on. The distinction between sectors coincides entirely with Marx's division of labor in particular. Although the use-value of the product appears to be the criterion upon which different sectors are divided from each other, this is only a partial truth. The internal coherence of a specific sector and thereby the sector itself is increasingly defined by the equalization of the profit rate internally as compared to productive activities in other sectors. This is brought about through direct market competition which, of course, takes place only to the extent that competing use-values are comparable, thus lending credibility to the superficial observation that sectors are defined according to the similarity of the use-values they produce. The differentiation of sectors from each other is never complete, of course, and overlaps occur. This is particularly true in the production of large composite products such as steel mills or airplanes. To what extent is the builder of a modern automated, computer-programmed blast furnace or Boeing 747 operating in the electronics or computer sector rather than the construction and aerospace sectors respectively? And just as certainly there are external overlaps in that sectors do not tend to fit easily and exclusively under one department. The auto industry, for example, produces in all three departments. It produces trucks for productive consumption, cars for individual consumption, and tanks for war.

3. The differentiation of the social capital into individual units is not in any way a function of the division of labor, although the detail division of labor tends to operate from day to day at the level of the individual capital. Rather, the differentiation of individual capitals is

historically imposed on the accumulating social capital by the system of property relations expressed and constituted through the predominating legal system. With the origins of capitalism, individual capitals did tend to be synonymous with particular divisions of the labor process. The individual capitalist would be a farmer, a carpenter, a textile manufacturer. But with the necessary concentration and centralization of capital implied in the accumulation process, the scale of individual capitals has grown tremendously. Today, many small capitals may remain confined to one particular division of the labor process, but in the age of portfolio investments, this is true of a smaller and smaller portion of the total social capital. DuPont no longer simply makes chemicals; it mines coal and oil, operates hotels, runs a retail chain, and buys and sells real estate. Just as at the scale of different sectors of capital, so at the scale of individual capitals there is considerable overlap, but at the latter scale this is manifested not through a mixing of different activities but rather through an overlap of legal control, according to mutually intertwining stock ownership.¹⁵

If the division of labor and the division of capital are folded together, we are left with four identifiable scales at which the social differentiation process takes place:

- (a) the *general* societal division of labor (and capital) into different departments;
- (b) the division of labor (and capital) in *particular* different sectors;
- (c) the division of the social capital between different *individual capitals*;
- (d) the *detail* division of labor within the workplace.

These different divisions of labor are not equally important in determining the geographical differentiation of the landscape, and the task now is to assess their importance. We begin with the *detail* division of labor.

The *detail* division of labor appears with the organization of hand-craft activities into manufacturing where in the beginning it exists as an independent social force: "In those branches of industry in which the machinery system is first introduced," Marx wrote,

Manufacture itself furnishes, in a general way, the natural basis for the division, and consequent organisation of the process of production. . . . In Manufacture the isolation of each detail process is a condition imposed by the nature of division of labour, but in the fully developed factory the continuity of those processes is, on the contrary, imperative. . . . Modern Industry has a productive organism that is purely objective, in which the labourer becomes a mere appendage to an already existing material condition of production.

The detail division of labor then becomes a "technical necessity dictated by the instrument of labor itself."¹⁶ That is, the development of the detail division of labor as such is replaced as the central determinant of the differentiation of the labor process. Differentiation at this scale is increasingly the product of the technical development of the instruments of production themselves.

As such, and although it is fundamental in other ways, the detail division of labor contributes very little to the social differentiation that in turn leads to uneven development. This is predominantly a matter of spatial scale. The detail division of labor occurs at the scale of the individual factory and at the most affects geographical differentiations at the intra-urban scale. Indirectly, however, the advance of the detail division of labor may have a more widespread effect. The introduction of new technologies may well be responsible at least in part for the differentiation of space at the inter-urban, regional, or even international scales. One need only think of the development of Silicon Valley in California, or the Sinchu suburb of Taipei, or of the importance of the aerospace industry or the more modern military technologies in the development of the so-called Sunbelt. But in these cases, although new technologies are certainly involved, it is not the development of the machinery per se but its effect at a larger scale (that of the particular or general division of labor) that is responsible for the resultant spatial differentiation. The detail division of labor leads to spatial differentiation only insofar as it also involves a development in the particular or *general* divisions of labor.

At the scale of the general division of labor, capitalism is historically founded upon the division between industry and agriculture. Although this division is superseded with the development of capitalism it is historically important and receives its direct spatial expression in the separation of town and country. “The foundation of every division of labour that is well developed, and brought about by the exchange of commodities, is the separation between town and country. It may be said, that the whole economic history of society is summed up in the movement of this antithesis.”¹⁷ So wrote Marx with considerable insight concerning the necessary spatial content of the division of labor. This passage is widely and sometimes indiscriminately quoted, often by geographers groping for a handle on how to fit space into Marx’s theoretical analyses. But unless it is critically understood, this passage can be misleading. The separation of town and country is both the logical and historical *foundation* of the contemporary social division of labor in the following sense: only when the proletariat was free from the need and responsibility of producing their own means of subsistence could this social division of labor progress as it did. The separation of town and country does not originate with capitalism, but is on the contrary inherited by early capitalism. Only with the freedom of the agricultural peasants from the land, however, and with their migration to the city, is a final separation cleft between town and country. The separation of town and country is itself a product of the social division of labor, but it proceeds to become the foundation, as Marx said, for the further division of labor.

It should hardly be surprising, therefore, that precisely this further division of labor has eroded its own foundation—the separation of town and country. The urbanization of the countryside, through the industrialization of agriculture, is today an overwhelming reality and one which Marx foresaw. “The history of classical antiquity,” he said, “is the history of cities, but of cities founded on landed property and on agriculture . . . the Middle Ages (Germanic period) begins with the land as the seat of history, whose further development then moves forward in the contradiction between town and countryside; the modern [age] is

the urbanization of the countryside, not the ruralization of the city as in antiquity.”¹⁸ The separation of town and country today still occurs in some form but should be seen as a relic from the origins of capitalism. To speak of it today as still central to the determination of the general division of labor, as is all too commonly done, is to read Marx uncritically and to fossilize the rural-urban dichotomy. Strictly defended, this dichotomy is a derivative of the larger ideological dualism of nature versus society—the machine versus the garden.¹⁹

The urbanization of the countryside does not invalidate Marx’s claim that the history of society is “summed up” in the movement of the antithesis between town and country. On the contrary, it confirms it. But one must be prepared to follow the historical movement of this antithesis to the point of recognizing its *Aufhebung* or suspension. This is a case where the tendency toward equalization inherent in capital has won out over the differentiation of space. But in the process, as we shall see below, capitalism digs its own grave. To the extent that capitalist development levels the urban-rural dichotomy and thereby destroys the foundation for its own economic history, it prepares the way not only for its own defeat but for the development of a wholly new economic history built on a new foundation. Very accurately does the movement of this antithesis sum up the economic history of society.

Like the detail division of labor, the general division of labor is not a fundamental determinant of the pattern of spatial differentiation. We have seen this with the separation between town and country, and it is necessary now to show the same as regards the division of the economy into departments which supersedes the division between industry and agriculture. The distinction between the three departments identified above takes place at such a large scale, economically, that we would expect any spatial correlate to occur at a similarly large scale. Only in an accidental rather than systematic way could the differentiation between departments be responsible for spatial differentiation at the intra-urban scale.²⁰ At the scale of the world economy, the selective concentration of departments has been of considerable importance. The clearest example

of this was to be found in the specialization in early colonial economies whose major function was the production of raw materials for the European colonizer. The underdevelopment of Africa, Asia, and South America was built on the export from these continents of raw materials for use in Western Europe and later in North America. Marx offers a vivid description of this process in action, noting how it was integrally related to the development of machinery in the European industrializing economies:

On the one hand, the immediate effect of machinery is to increase the supply of raw material in the same way, for example, as the cotton gin augmented the production of cotton. On the other hand, the cheapness of the articles produced by machinery, and the improved means of transport and communication furnish the weapons for conquering foreign markets. By ruining handicraft production in other countries, machinery forcibly converts them into fields for the supply of its raw material. In this way East India was compelled to produce cotton, wool, hemp, jute, and indigo for Great Britain. By constantly making a part of the hands “supernumerary,” modern industry, in all countries where it has taken root, gives a spur to emigration and to the colonisation of foreign lands, which are thereby converted into settlements for growing the raw material of the mother country; just as Australia, for example, was converted into a colony for growing wool. A new and international division of labour, a division suited to the requirements of the chief centres of modern industry springs up, and converts one part of the globe into a chiefly agricultural field of production, for supplying the other part which remains a chiefly industrial field.²¹

The impetus for this global specialization in Department I activities is social; there is nothing “natural” about the destruction of competing machinery. But in operation, this social specialization did base itself on the natural differentiation of the earth’s surface. But this crude division of the underdeveloped world from the developed on the basis that the former supplies raw materials to the latter is no longer accurate. With the continued emancipation of social production from the dictates

of nature, the natural patterns of differentiation are rendered increasingly impotent in directing the spatial differentiation of the different economic departments of production. As raw materials become increasingly the product of numerous previous labor processes, as we saw in the case of plastics, the underdeveloped nations have become less and less tied to the exclusive production of raw materials, and have experienced considerable industrial development in some areas.²² The differentiation between departments of the world economy is an insufficient explanation for the division between the developed and underdeveloped world.

Among underdevelopment theorists today, Samir Amin probably comes closest to differentiating the underdeveloped world from the developed world according to the differentiation between departments. For Amin, peripheral capitalism has a quite different structure from central capitalism. Whereas central capitalism experiences self-centered accumulation, peripheral “social formations” experience an inherently unbalanced structure of development. In the center, development revolves around the production of “capital goods” and the encouragement of mass consumption; in the periphery, however, it is production for export and the consumption of luxury goods that form the basis of the economy, and this is an inherently unbalanced structure (figure 1).²³ Although Amin is concerned in part with the distinction between different departments these distinctions are not consistently at the base of his explanation of underdevelopment. He is well aware that the underdeveloped world is no longer simply or even predominantly defined by its export of raw materials, and that considerable industrialization has taken place in the underdeveloped world. But this is industrial production for export, and does nothing to alter the unbalanced economic structure of peripheral capitalism.

Thus production for export, *regardless* of the department in which this takes place, is of key importance for Amin’s analysis. Consequently, even for Amin, it is not the differentiation into departments that is at the root of the differentiation between developed and underdeveloped

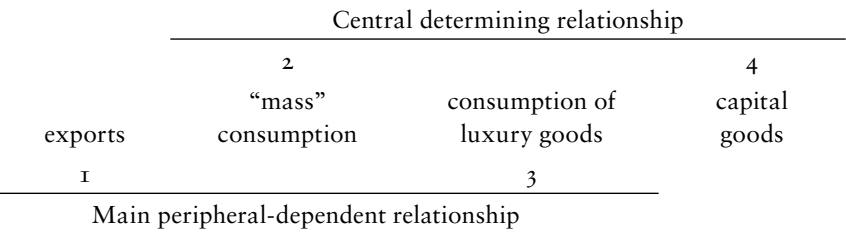


FIGURE 1 Amin’s model of central and peripheral development

nations. To the extent that a differentiation between departments does have a spatial dimension—and it is undeniable that productive activity in all four of Amin’s departments is concentrated in the developed world—this pattern is a product of some prior spatial differentiation, the explanation for which must be found elsewhere.

This leaves us with the two remaining scales at which social differentiation takes place, and it is these that are responsible in the first instance for the geographical differentiation of the capitalist world. At the scale of *individual capitals*, the differentiation process is quite direct; capital is concentrated and centralized in some places at the expense of others. At the scale of the *particular* division of labor—the division of the economy into specific sectors—the differentiation of geographical space is less direct. It occurs in a cyclical manner according to the equalization of the profit rate within a given sector, and the resulting movement of capital between sectors, from those with a low rate of profit toward those with a higher rate of profit. This movement of capital between sectors takes on a spatial dimension due to its timing; insofar as those sectors attracting quantities of capital are relatively young in the economy, their rapid expansion generally coincides with some kind of geographical expansion or relocation in order to supply the space for burgeoning productive facilities. And the corollary also holds. Insofar as sectors systematically losing large quantities of capital are old and established, perhaps even outmoded, and insofar as they therefore tend to have been clustered relatively closely in the landscape, then whole areas will tend to experience

a systematic and uncompensated devalorization of fixed capital located there. The devalorization of capital, and ultimately its general devaluation, are place-specific.²⁴

In sections III and IV we shall examine in greater detail the spatial translation of the particular division of labor and the division between individual capitals. For the present, we turn to the opposite tendency, that toward equalization.

II. The Tendency Toward Equalization

We saw in the last chapter the “universalizing tendency of capital,” and noted the contradictory geographical results of this process. On the one hand, geographical space is produced at the world scale as relative space, and on the other hand there is an internal differentiation of geographical space into distinct absolute spaces, at different scales. We have looked at the origins of the tendency toward differentiation but have now to consider more concretely what it means that global space is produced as relative space. Where Marx touches on this issue he does so, typically, in the context of the circulation process. More than with production, Marx emphasizes that “circulation proceeds in space and time.” Indeed he devotes a short section in *Grundrisse* to this issue. And in the *Manifesto*, he and Engels observe that the “need of a constantly expanding market for its products chases the bourgeoisie over the whole surface of the globe. It must nestle everywhere, settle everywhere, establish connections every where.”²⁵ But in *Capital* Marx also notes more generally, if rather cryptically, that “capital is by nature a leveller”; this generalization is provoked by the observation that capital “exacts in every sphere of production equality in the conditions of the exploitation of labour.”²⁶ Inherent in the global production of relative space, therefore, is a tendency toward the equalization of the conditions of production and of the level of development of the productive forces. This annihilation of space by time is the ultimate if never fully realized result of this tendency. In constant opposition to the tendency toward differentiation, this tendency toward equalization, and the resulting contradiction, are the more

concrete determinants of uneven development. This contradiction is resolved historically in the concrete pattern of uneven development, but before taking up this issue, we shall examine the source, in the sphere of social production, of the tendency toward equalization.

We have already seen some of the geographical expressions of this tendential equalization in the leveling of the urban-rural dichotomy and in the transformations of nature into a universal means of production. At its most general, the equalization of conditions of production—meaning its use-value as well as its exchange-value features—results from the universalization of abstract labor in the form of value. Its origins coincide precisely with the origins of differentiation. The accumulation of capital progresses not simply through the development of the division of labor but by the leveling of pre-capitalist modes of production to the plain of capital. The advanced division of labor is possible only to the extent that capital conquers the mode of production.²⁷ The universalization of the wage-labor relation portends for the laborer a freedom given with one hand—the freedom to buy and sell his or her labor power—but taken away with the other. As Marx observed, and as was emphasized in the earlier discussion of the production of nature, the individual worker is transformed into a “crippled monstrosity”; the “Juggernaut of capital,” to use Marx’s phrase, drags workers down to a common level, and as far as the individual is concerned makes a “speciality of the absence of all development.” Human nature is leveled downward.

A parallel degradation results from the capitalist pursuit of raw materials. In quantitative terms, the equalization process is manifested in the common scarcity of objects of labor. From wood to whales to petroleum, the presumed scarcity of these materials is a social creation, not an act of nature. According to Harvey, “this scarcity is socially organized in order to permit the market to function.”²⁸ In qualitative terms, capital engages in a frantic search for the materials—old and new—which fuel the accumulation process. Thus Marx concludes that

all progress in capitalistic agriculture is a progress in the art, not only of robbing the labourer, but of robbing the soil; all progress in increasing the fertil-

ity of the soil for a given time, is a progress toward ruining the lasting sources of that fertility. . . . Capitalist production, therefore, develops . . . only by sapping the original sources of all wealth—the soil and the labourer.²⁹

This applies not just to the soil but to the mineral, animal, and vegetable resources of the earth. These issues have already been discussed in greater detail in chapter 2. In two general senses, the production of nature brings about an equalization in the relation with nature: first, nature is made the universal appendage of capital; second, the quality of nature is leveled downward at the hands of capital. We shall not pursue this general point here but shall turn to the issue of fixed capital which is particularly important as regards the tendency toward equalization.

To the extent that capital accumulation depends upon the production and reinvestment of relative surplus value, the development and improvement of “technology” is vital. As fixed capital in the production process, technology is both the vehicle for the expansion of capital and also the impetus for such development. Competition is the social flux which generalizes the necessity of innovation throughout the economy. Assuming similar labor conditions, new techniques adopted by one capital must be equaled or bettered by other capitals in the same sector if they are to survive in the marketplace. Further, this increased productiveness of labor in one sector creates both the possibility and the necessity for increased productivity in others. The possibility arises in that an innovation in one sphere is likely to find applicability in another. The necessity arises because an advance in one sector may require advances in those sectors to which it is closely related. Marx gives the example of the mechanization of spinning which “made weaving by machinery a necessity, and both together made the mechanical and chemical revolution that took place in bleaching, printing, and dying imperative.”³⁰ More recent examples might include the industrialization of agriculture in order to maintain the supply of raw materials to a rapidly expanding industrial sector, or the development of the computer industry which spawned a variety of revolutions in microelectronics. With the development of means of communication and transportation, the barriers to the geographical

generalization of new technologies are diminished. To the extent that this generalization is achieved, the tendency toward the equalization of conditions and levels of production is realized.

Capital assigns massive resources to facilitate the development and application of new technology, especially in support of science. “The full development of capital . . . takes place,” according to Marx, when “the entire production process appears as not subsumed under the direct skilfulness of the worker but rather as the technological application of science.” With the enhanced role of fixed capital, massive new industrial sectors are required for the research, design, and development of appropriate instruments of production. Science itself becomes a business, the business of developing the necessary forms of fixed capital.

The accumulation of knowledge and of skill, of the general productive forces of the social brain, is thus absorbed into capital, as opposed to labour, and hence appears as an attribute of capital, and more specifically of *fixed capital*. . . . *Machinery* appears, then, as the most adequate form of *fixed capital*, and fixed capital, in so far as capital’s relations with itself are concerned, appears as *the most adequate form of capital* as such.³¹

As fixed capital moves toward center stage, the relativity of space is increasingly determined by the geographical patterns of investment in fixed capital. The relationship between the generalization of new technologies and the tendency toward equalization is thereby intensified; the economic forms are translated more directly into their geographical form. Now although the impetus behind the equalization process springs directly from the sphere of production, the new sectors of research, design, and development begin to operate independently toward the equalization of conditions and levels of development. This is particularly evident in the case of science: the “development of fixed capital indicates to what degree general social knowledge has become a *direct force of production*, and to what degree, hence, the conditions of the process of social life itself have come under the control of the general intellect and been transformed in accordance with it.”³²

Marx carries his argument concerning science and fixed capital to its logical conclusion, which is an equalization of a wholly different sort. For the increasing centrality of fixed capital is inherently contradictory. Capital posits labor as the sole source of value, and yet in its increased dependence upon fixed capital, capital itself depletes the basis of its own survival. “The increase of the productive force of labour,” Marx says, “and the greatest possible negation of necessary labour is the necessary tendency of capital.” For as

soon as labour in the direct form has ceased to be the great well-spring of wealth, labour time ceases and must cease to be its measure, and hence exchange value [must cease to be the measure] of use value. The *surplus labour of the mass* has ceased to be the condition of general wealth. . . . With that, production based on exchange value breaks down, and the direct, material production process is stripped of the form of penury and antithesis.³³

The logic of capital expansion leads not just to the universal subjugation of all human societies and of the entire earth to the rule of capital; it does so only by generalizing within capital the absolute rule of fixed capital.

Realized to the hilt, the geographical equivalent—or rather, prerequisite—of this banishment of penury and antithesis is the complete leveling of spatial differences and the instigation of even development. Depending particularly on these passages from *Grundrisse*, theorists from the Frankfurt School have elaborated upon Marx’s notion that “the conditions of the process of social life itself have come under the control of the general intellect and been transformed in accordance with it.” The most articulate and probably the best known has been Herbert Marcuse, who attempted to demonstrate that not just in production but throughout society—in the cultural, psychological, philosophical, and political realms—the hegemony of science, inexorably linked to technology, has led to new and near-universal structures of social control. The result is adequately captured in the title of the book where he most forcefully advances this thesis: *One Dimensional Man*. There he documents the

simultaneous equalization and degradation of all realms of human experience to a lowest common denominator, one established by the very structure and process of scientific discourse. The spatial correlate, to which Marcuse only alludes, but which is more explicitly discussed in the social science literature and lamented in newspaper travel columns, is a one-dimensional geography. The equalization of geographical differences and the shrinking of world space emerge together; the more accessible foreign parts become, the more similar they seem to home. This is not just a case of the old cliché that familiarity breeds contempt. Regardless of its social expression this geographical one-dimensionality has a real historical basis in the equalization of the conditions and levels of production. The lowest common denominator, in a geographical sense, is not just the spacelessness implied by an equivalence of wages or of prices, but the ubiquitous degradation of landscape.³⁴ Spacelessness here is the obverse of utopia.

Marcuse admirably captures the increased centrality of fixed capital, and therefore of science, depicted by Marx and understands also the tendency for science to spread its domain outward from the production process. As such he understands at least one facet of the tendency toward the equalization of social conditions brought on by the expansion of capital. But his pessimistic conclusion of one-dimensionality is premature. Where Marx is discussing the victory of automation and of technological dominance, he does so not as a description of an accomplished reality or even a reality that could be achieved under capitalism. Yet this is exactly how Marcuse seems to read Marx. If not yet accomplished in Marx's time, automation of the mind as well as the economy, the growing irrelevance of class struggle and the demise of the labor theory of value are today, for Marcuse, an accomplished reality. Yet even in the same passage, Marx was clear that under the actual conditions of capitalism it is "absurd" to "make fixed capital into an independent source of value, independent of labour time."³⁵ In fact Marx was not describing any reality at all in this well-known passage from *Grundrisse* but rather spinning out the logical destination of the development of fixed capital.

Not surprisingly, the destination for Marx was not "one dimensional man" under an impregnable and barbarian capitalism; rather it was socialism. The state where labor time is no longer the measure of value, where the surplus labor of the masses is no longer the condition for the development of the social wealth, where social life is under the direct control of the intellect, and where the production process is stripped of the form of penury and antithesis—all this is none other than Marx's vision of socialism, and furthermore one of his most explicit statements of that vision. What he in fact demonstrates here is the way in which the development of one form of capital implants the seed of socialism within the womb of capitalism. The equalization process reaches a new high.

Like the tendency toward differentiation, the tendency toward equalization is inherent in capital. It is expressed most clearly in the world market and in the circulation process, because the individual act of exchange is one of creating a social equivalence. It is in the sphere of circulation that the annihilation of space by time strives to be realized. Yet what is realized in circulation usually emanates from production, and this is the case with the tendency toward equalization. The equalization of the conditions and level of production is as much a product of the universalization of abstract labor as the tendency toward differentiation. Dazzled by the former, Marcuse fails to appreciate the latter. Yet it is together that these opposite tendencies produce a historically specific geography.

III. The Accumulation, Concentration, and Centralization of Capital

We have already seen that the necessity of capital accumulation leads to a frantic geographical expansion of capitalist society, led by productive capital. This requires a continuous investment of capital in the creation of a built environment for production. Roads, railways, factories, fields, workshops, warehouses, wharves, sewers, canals, power stations, dumps for industrial waste—the list is endless. These and myriad other facilities are the geographically immobilized forms of fixed capital, so

central to the progress of accumulation. The location of this capital is a complex concern; different issues and economic relationships differ in importance whether we examine the individual capital or the accumulation process in aggregate. Based on the microeconomic theory of the firm, bourgeois location theory begins with the individual decision and attempts to generalize from this to the level of the overall space economy. Marxist theory, however, begins from the integration of micro and macro scales: individual capitals confront a set of constraints, limitations, and conditions set by the structure and development of the larger economy, while the rules of the larger economy are an outgrowth of the class and competitive relations pertaining at the level of every individual capital. It should not be surprising, then, that the strong geographical conclusions that emerge from Marx's "general law of capitalist accumulation" connect directly with the differentiation of space at the scale of individual capitals. The common thread is the concentration and centralization of capital and it is with this issue that we begin.

In the first place we must distinguish between the social and the spatial concentration and centralization of capital. When Marx talks about it, he generally means the *social* process according to which individual units of capital come to control larger and larger quantities of capital. The spatial concentration and centralization process refers to physical location of capital and is thereby different from social concentration and centralization. We shall proceed from the social to the spatial, and in the process explain the difference between concentration and centralization.

Marx insisted that primitive accumulation is already (social) concentration of capital in the hands of individual capitalists; in fact it is the earliest *concentration* of capital *as* productive capital (as opposed to merchant capital). Thus he remarks that "a greater number of labourers working together, at the same time, in one place . . . in order to produce the same sort of commodity under the mastership of one capitalist, constitutes, both historically and logically, the starting point of capitalist production."³⁶ The initial concentration of capital in a number of hands

provides the means for a more advanced division of labor, the production of a larger quantity of surplus product by each capital and therefore a further concentration of capital through accumulation. This is concentration proper, where each capital grows by reinvesting increasing quantities of surplus value as capital.

Indeed, the social concentration of capital is a necessity of accumulation as much as a premise for it. With the drive for relative surplus value, individual capitals are compelled to reinvest increasing quantities of surplus value in the purchase of larger and larger scale machinery and other means of production, and this requires a continued concentration of capital to facilitate the expanded scale of production. Now in proportion as the concentration of capital facilitates the advancement of the division of labor, capital must also find the means to recombine what is ever being divided. And as ever, capital turns necessity into advantage. Thus capital takes advantage of the social powers of *cooperation* inherent in the laborer and uses them not only to execute a technical recombination of labor in the workplace, but simultaneously to reduce the costs of production and make possible a variety of production processes which, without cooperation, would be impossible. Where a large number of workers are able to work side by side, due to the concentration of capital and the appropriation of the workers' powers of cooperation, the capitalist no longer simply sets to work a number of laboring individuals, but rather the *collective laborer* whose productive power exceeds that of the sum of the individual laborers. The construction of railroads, Marx says, depends fundamentally upon the cooperation of large numbers of laborers in different locations.³⁷ Today, with electronic and satellite communications and with computer technology, cross-spatial cooperation and the constitution of a geographically dispersed collective laborer are of vital importance.

Although cooperation "originates from the social nature of labour," it appears under capital as its opposite: the power of social labor is taken (literally as well as symbolically) as the power of capital. The greater the concentration of capital and with it the development of the productive

forces, the more this appearance seems real. Less and less does the detail division of labor determine the shape of the instruments of production as was the case up to the manufacturing period. Rather, the technical design of the productive system determines the detailed division of labor in the workshop. This leads to a change in the way in which the combination of labor is accomplished. With the production of machines by machines and the complete transformation of the laborer into a mere appendage of the productive forces—with, that is, the real rather than the formal subsumption of labor to capital—simple cooperation is superseded by a more developed form of cooperation. “In simple co-operation . . . the suppression of the isolated, by the collective, workman still appears to be more or less accidental. Machinery [on the other hand] operates only by means of associated labor. Hence the co-operative character of the labor process is, in the latter case, a technical necessity dictated by the instrument of labor itself.” In cooperation technically dictated by machinery, capital finds a free source of relative surplus value. The “productive forces resulting from co-operation” in this way are “natural forces of social labour” which capital appropriates gratis for its own.³⁸

If capital accumulation leads directly to the concentration of capital in existing units, it leads indirectly but no less inexorably to a far more powerful process—the centralization of capital. The centralization of capital occurs whenever two or more previously independent capitals are combined into a single capital, and this generally occurs directly through a merger or takeover or indirectly through the credit system. The centralization of capital allows for a more rapid expansion in the scale of production (and potentially therefore to a more rapid increase in the productiveness of labor) than could be achieved by simple concentration of capital in existing units.

The world would still be without railways if it had to wait until accumulation had got a few individual capitals far enough to be adequate for the construction of a railway. Centralization, on the contrary, accomplished this in the

twinkling of an eye, by means of joint-stock companies. . . . Capital can grow into powerful masses in a single hand because there it has been withdrawn from many individual hands.

As such, the centralization of capital “does not in any way depend upon a positive growth in the magnitude of social capital.”³⁹ Indeed centralization often proceeds faster in association with economic crises, when the social capital is shrinking. Centralization is thus simultaneously the destruction of one capital and the surge in valorization of another.

“Centralization completes the work of accumulation”; it exaggerates the effects and purpose of the concentration of capital. “Capital proper does nothing but bring together the mass of hands and instruments which it finds on hand. It agglomerates them under its command. That is its real stockpiling; the stockpiling of workers, along with their instruments, at particular points.” The centralization process is the most effective means for carrying out this stockpiling, and with the continued development of the productive forces, the centralization of capital takes on continually increasing importance. “Today,” Marx wrote, “the force of attraction, drawing together individuals, and the tendency toward centralization of capital is even stronger.” Marx wrote this, remember, in a period when virtually the only “multinational corporations” were merchant or banking concerns.⁴⁰ Now in any single industrial sector, the centralization process would reach its limit when all of the separate capitals were combined as one; in any given economy the limit would be reached when the entire social capital was combined under the auspices of a single capitalist outfit. But as Marx points out, this stage can never be reached. In the first place, “portions of the original capitals disengage themselves and function as new independent capitals.” But second, in a process which has become much more important since Marx’s time, large centralized capitals divide themselves internally and while they remain under the same control economically, function as semi-autonomous divisions producing in different sectors of the economy, but within a single corporate structure. Thus although the level of centralization increases

with the progress of accumulation, it does so only in the context of a continual contradiction between the social centralization and decentralization of capital. But Marx also had something more ambitious in mind when he concluded that capitalism was incapable of achieving the total centralization of capital. Another solution presents itself when the social relations of production prevent a sufficient decentralization: “Centralization of the means of production and socialization of labour at last reach a point where they become incompatible with their capitalist integument. This integument is burst asunder. The knell of capitalist private property sounds. The expropriators are expropriated.”⁴¹

If social centralization is the centralization of exchange-value in fewer and fewer hands, spatial centralization is the physical centralization of use-values. The social centralization of capital both produces and requires a certain spatial centralization of capital, and at the scale of the individual capital, this provides the primary impetus toward the geographical differentiation of the conditions and levels of production. There is no one-to-one mapping or automatic translation from social to spatial centralization, but to the extent that the former necessitates the latter, the urgency that whips on the social centralization of capital expresses itself in the geographical differentiation associated with the concentration of capital in certain centers of production. How does this translation to spatial centralization take place?

The spatial centralization of capital is mainly a matter of centralized productive capital. Certainly, the spatial centralization of money capital can be considerably enhanced by the centralization of the social capital as a whole, but in itself the spatial centralization of money capital is of little significance. It takes but a few banks and other buildings to house the bank notes, checks, certificates of deposit, gold, IOUs, electronic messages, and so forth, that circulate through the centers of the world financial system. And these buildings and institutions do not in general create new centers, but rather tack themselves on to already existing centers. As regards the centralization of capital, money capital is far more important in the social sphere than in the spatial sphere. But this does

not mean it is unimportant in the spatial sphere. As the most mobile form of capital, and as the social incarnation of value, the geographical movement of money capital can grease the wheels of whatever tendencies (toward equalization *or* differentiation) are thrown up in the process of accumulation. Commodity capital too is important but does not in itself tend to dictate new patterns of centralization. In the first place, commodity capital invested in the landscape is generally invested as productive capital, even if its consumption is not an element of social production. This would apply to a house or an office building. But second, much of the commodity capital built into the landscape tends to cluster round complexes of productive capital. This is the case with urban development under capitalism where a host of services and ancillary activities are attracted by the centralized investment of fixed capital. The few exceptions to this rule are sufficiently exceptional to be referred to as administrative cities. For these as well as for the reasons noted above in relation to fixed capital, it is reasonable to approach the question of spatial centralization as particularly concerning productive capital. The one main exception to this rule will be treated specifically below.

In the first place we know that the development of the productive forces brings about an increase in the scale of the production process itself. The greater the “number of labourers working together, at the same time, in one place,” the larger is the mass of instruments and materials employed in the production of surplus value, and the larger is the spatial scale of the production process. With the continuous division of labor, a larger and larger number of work processes have to be clustered together, and even when whole sections of the production process are spun off spatially—as, for example, in the separation of auto-assembly units from basic production—the tendency is toward larger and larger plants. Not only internally within a single capital, but externally, this clustering of activities takes place. The more advanced the division of labor, the greater tends to be the number of ancillary services and activities required by a given production process, and the greater is the range of productive capital which can be employed in common, thus

commandeering the powers of geographical cooperation. There is therefore a tendency toward the spatial clustering of capitals in established places of production. There is no great mystery here: the results of internal and external clustering we know from the bourgeois literature as “economies of scale” and “agglomeration economies.”⁴² Both result from economies in the time and cost of circulation together with the harnessing of the social powers of cooperation, the latter operating through both active labor and the gift of dead labor fossilized in the geographical structure.

Along with the objects and instruments of labor, the accumulation process brings about an unprecedented spatial centralization of the subjects of labor. “The causes which concentrate masses of labour under the command of individual capitalists,” Marx said, “are the very same that swell the mass of the invested fixed capital, and auxiliary and raw materials.” Where workers are concentrated in one location, the cost of reproduction of labor power is reduced because a number of necessities can be consumed in common. In particular, the necessary journey to work is kept to a minimum, thus keeping wages and hence socially necessary labor to a minimum, and maximizing the period of surplus labor. Accumulation of capital is not just accumulation of the proletariat, as Marx said, but accumulation of the proletariat in certain places of production. Summarizing this overall process, Marx writes: “If we consider the material element of *accumulation*, it means nothing more than that the division of labour requires the concentration of the means of subsistence and means of labour at particular points, whereas formerly those were scattered and dispersed.”⁴³ The effect of capital, then, has been to differentiate previously undifferentiated geographical space.

At the level of individual capitals, the concentration and centralization of capital provide the central impetus toward geographical differentiation. This process operates in different ways at different spatial scales, and we shall pick this up in the next chapter. For the moment, it is necessary to examine the second potential source of differentiation (identified in section II) at the level of the particular division of labor, or the divi-

sion of the economy into sectors. This question must be pursued in the context of the historical rhythm of accumulation.

IV. *The Rhythm of Accumulation*

The investment of capital in the built environment is synchronized with the more general cyclical rhythm of capital accumulation. We would expect this to be more or less true of any subdivision of capital, but it is of particular importance with respect to capital invested in the built environment because of the prolonged period over which the material body of fixed capital is fossilized in the landscape. At any given moment, there are individual capitals being built into the landscape, capitals at every stage of devalorization (the routine process through which fixed capital surrenders its value piece by piece in production), devalued elements of fixed capital, and abandoned remnants of capital which have been rendered valueless.⁴⁴ The historical occurrence of capital in these different states is not accidental and nor, as a result, is its geographical occurrence; the historical rhythm of investment in the built environment forges specific geographical patterns which in turn strongly influence the agenda of capital accumulation. This connection has been noted by a number of authors from Kuznets and Abramowitz to Parry Lewis and Brinley Thomas,⁴⁵ but the most systematic attempt to relate the theory of accumulation to the specific geography of capitalism comes from Harvey.

Harvey develops “a cyclical ‘model’ of investment in the built environment,” based both on historical evidence and on Marx’s theory of capitalist crisis. In outlining the theory here, I omit the caveats and complexities which Harvey introduces and offer only the barest bones of the model.⁴⁶ At the most general level the construction of the built environment for production is strongly associated with the periodicity of “long waves” or Kuznets cycles in the overall expansion of capital. To explain this readily observable result, Harvey suggests that we distinguish between a primary, secondary and tertiary circuit of the economy. The primary circuit is the locus of surplus value production and consumption as

well as reproduction of labor power; the secondary circuit involves the investment of capital specifically in fixed capital and the consumption fund, part of which goes to the formation of the built environment; and the tertiary is the sphere of investment in science, education, technology, social expenditures, and so forth. These circuits are thoroughly integrated and difficult to distinguish absolutely; indeed by the time he completed the *Limits* Harvey dropped the distinction between these circuits in order to emphasize precisely the unity of the process. The central logic, however, remains the same. Marx derived the necessity of crisis at the core of capital accumulation, meaning among other things the onset of over-accumulation both as a condition and as a result of crisis. But crisis in the primary circuit could be staved off temporarily at least by switching capital investments into the secondary and tertiary sectors. The secondary sector and, in particular, the built environment tends to be under-capitalized, Harvey says, because of the large scale of such investments, their long turnover period, and their tendency to be collectively consumed; this leads to a reluctance by individual capitalists to make such investments. This switching of capital into the built environment is facilitated by a number of institutions, particularly the credit system and the state. Harvey illustrates this flood of capital into the built environment in periods immediately preceding crises with historical examples, such as the widespread property boom of 1969–73.

But this is only ever a temporary solution and leads very quickly to over-accumulation in the built environment also, but not until new geographical patterns have been spawned. Nonetheless, over-accumulation results in a massive devaluation of capital, and because of its long turnover period, fixed capital is particularly vulnerable. Quite different from the routine devalorization of fixed capital in the production process, this devaluation represents an absolute destruction of value. As Harvey emphasizes, devaluation is place-specific, and this creates the possibility that whole areas of the built environment undergo a rapid and wide-reaching devaluation. Of the crises that eventually result, Harvey distinguishes three kinds: *partial* crises which are localized (by sector or area)

in their effect, *switching* crises in which capital vacates entire sectors or areas in favor of others, and *global* crises in which the entire capitalist system is to some extent affected. The crisis which has developed overtly from 1973 is a global crisis.

This model represents only a first step in the attempt to relate the development of the built environment to the rhythm of accumulation. But already one can see its applicability to urban development, particularly. Beyond the work of building cycles by the authors referred to above, Isard documents the cyclical nature of investment in means of transportation; Whitehand shows in the context of Glasgow that private and state investment in the built environment take place at different parts of the economic cycle and that this results in alternating rings of private and public development; and Walker demonstrates the same cyclical pattern of growth in the suburbanization process.⁴⁷ What is common to all of the studies is that they demonstrate the integral role of the built environment in the rhythm of accumulation and crisis in the capitalist economy.

Marx's most complete analysis of crisis comes in part III, volume 3 of *Capital*.⁴⁸ The same historical development of the productive forces which becomes the lever of accumulation also brings about the "gradual growth of constant capital in relation to variable capital"—that is of capital invested in raw materials, machinery, etc., in relation to labor power—and since this shrinks the relative basis from which profit is produced, this "must necessarily lead to a *gradual fall of the general rate of profit*." Because there are inherent developments which countered this necessity, for example an increasing rate of surplus value, Marx emphasizes that the falling rate of profit is only ever a tendency. Beyond the immediate impetus of accumulation, a fall in the rate of profit further "hastens the concentration of capital and its centralization through expropriation of minor capitalists." This gives further impetus to the accumulation process leading ultimately to the over-accumulation of capital. Thus "the fallen rate of profit and over-production of capital originate from the same conditions," and in turn lead to "violent and acute crises,

to sudden and forcible devaluations [*Entwertung*], to the actual stagnation and disruption of the process of reproduction, and thus to a real falling off in reproduction.”⁴⁹

Now the argument concerning crises have been summarized here in an overly linear fashion. Crisis is not only the product of an inherent contradiction between the need to develop the productive forces and the conditions under which this must take place; in its concrete development as well as its genesis, economic crisis is also inherently contradictory. We need to look at some of the contradictory results of crisis, for no matter how disruptive and dysfunctional, crises can also be acutely functional for capital. The mergers, takeovers, and bankruptcies as well as general devaluation (of commodities, labor power, machinery, money) and destruction of capital (variable as well as constant) that accompany crises also prepare the ground for a new phase of capitalist development. Ultimately, Marx says, “the devaluation [*Entwertung*] of the elements of constant capital would itself tend to raise the rate of profit. The mass of employed constant capital would have increased in relation to variable, but its value could have fallen. The ensuing stagnation of production would have prepared—within capitalistic limits—a subsequent expansion of production.” Or as he put it elsewhere, there are “successive periods of depression, medium activity, precipitancy, crisis. . . . But a crisis always forms the starting-point of large new investments.”⁵⁰ It is in this context, that is, in relation to the restructuring of economies through crisis in preparation for a new phase of expansion, that the particular division of labor has its most pronounced geographical expression. In volume 1 of *Capital*, Marx describes the genesis of new sectors of capitalist industry out of pre-capitalist handicrafts or early manufacturing:

This first period, during which machinery conquers its field of action, is of decisive importance owing to the extraordinary profits that it helps to produce. These profits not only form a source of accelerated accumulation, but also attract into the favoured sphere of production a large part of the additional social capital that is being constantly created, and is ever on the look-out for new investments.⁵¹

This description could equally apply to the development of new sectors of industry. Ernest Mandel suggests, for example, that new phases of capital accumulation coming hard on the heels of crisis are driven primarily by technological innovations that were not introduced during the crisis. The result in the early phase of expansion is a number of new industrial sectors in which the rate of profit is very high and which grow very rapidly. Although Mandel seems to go farther and argue a technological determinist explanation of economic cycles, which we do not accept here, the general point is well founded and finds support from a number of quarters.⁵² Marx suggested an explanation for this relationship, between new sectors of production and crises, in his discussion of fixed capital. Although different capitals have different turnover periods and are invested at different points, “the cycle of interconnected turnovers embracing a number of years, in which capital is held fast by its fixed constituent part, furnishes a material basis for the periodic crises.” It is for this reason, he says, that crisis always forms the starting point of large new investments.⁵³ Marx does not develop this point further, and it has not been subjected to rigorous empirical verification, but it seems quite reasonable, intuitively. If the turnover time of fixed capital in the form of machinery accounts for the material basis of the shorter five-ten-year cycles in the economy, the turnover of the larger investments in buildings, means of transportation, and other major “improvements” can be viewed as the material basis of the “Kuznets cycles” of eighteen to twenty-five years.

The devaluation of productive capital in the course of crisis and the rapid expansion that follows are place-specific, to use Harvey’s phrase. They are place-specific not just at the level of the individual capital where the devaluation or valorization of specific items of fixed capital occurs at a discrete location. Far more important, they are place-specific at the level of whole sectors of the economy. This relationship is suggested in Marx’s observation linking the turnover of fixed capital and the periodicity of crisis, and it is realized in practice in the course of crisis, by capital itself. Even when crises emerge sporadically—here a bank, there a steel company, somewhere else a producer of consumer durables, along

with shoals of little capitalists—the crisis develops in the same fashion that capital originally took hold of the pre-capitalist economy, that is, sector by sector. It does this simply as a function of competition. Where devaluation first becomes entrenched, the victims attempt to shove it off in the easiest direction, which means their most direct competitors. This is the import of Harvey's distinction between partial and sectoral crises. Insofar as sectors of the economy are spatially centralized, then, the place-specific character of devaluation translates sectoral crises directly into geographical crises affecting entire regions. The obsolescence of old technologies and the rise of new ones, so vital to capitalism, is simultaneously the transformation of old spatial structures into new ones.

Even as the economy slouches into deeper global crisis—the near-uniform equalization downward of the profit rate—the impact of crisis (the distribution of the social devaluation) remains uneven. “So long as things go well,” Marx says, “competition affects an operating fraternity of the capitalist class.” Amicably, they divide the world between empires, large and small, then set about business with no small enthusiasm. With only minor skirmishes, “each shares in the common loot in proportion to the size of his respective investment.” But with crisis, the sharing of profits gives way to the sharing of losses and each tries to minimize his individual losses. “How much the individual capitalist must bear of the loss, i.e. to what extent he must share it at all, is decided by strength and cunning, and competition then becomes a fight among hostile brothers.”⁵⁴ Some of these brothers stay to fight for their empires, others pick up and move, but the outcome is the same. The capitalist class as a whole attempts to localize the crisis by writing off some of the smaller brothers and their empires, and these places sustain the most precipitous devaluation. If, as Marx says, “the proportionality of the individual branches of production springs as a continual process from disproportionality,”⁵⁵ then the geographical expression of this disproportionality becomes most acute in crisis.

The level to which the capitalist mode of production “has conquered the conditions of production,” according to Marx, “is indicated in the

transformation of capital into unmovable property.” That is, the extent of the concrete production of space becomes a measure of the universality of capital. This is why Marx declares that fixed capital “appears as the most adequate form of capital.”⁵⁶ Yet it is clear in the context of crises that precisely because of its immobility, fixed capital is a wholly inadequate form of capital. It is circulating capital, rather, that facilitates the survival of the capitalist class, albeit one which has had “to cannibalize itself.”⁵⁷ The mobility of circulating capital during bouts of rapid devaluation becomes a means not toward geographical equalization but a differentiation upon which the survival of capital is predicated. Thus Marx is quick to add that circulating capital too is the most adequate form. The resolution of this contradiction is a matter of history.

The post-crisis period of capital accumulation inherits a geographical space that is highly differentiated through crisis. The validity of bourgeois location theory is at best restricted to this period of somewhat idyllic expansion when those of the feuding brothers who survived have returned home, and are again a cozy fraternity. Location theory begins from the assumption of a given differentiated landscape, then examines the location decisions of the individual firms. To the extent that the locational structure—the geography of capitalism—is seen to change historically, this change is treated as the arithmetic summation of these decisions. In this period of expansion, circulating capital merely facilitates the investment in fixed capital which now takes on its historic mission as the lever of accumulation; a new harmonious landscape for production is created. But these idyllic conditions for capital (and for location theory) are only ever temporary. Capital and location theory both are caught up in a historical and geographical flow they cannot explain. But there is another assumption, inherent in location theory, which needs closer attention: the assumption that the summation of individual location decisions tends toward an equilibrium geography, a balanced set of locations. At root this equilibrium is an *equalization of economic differences*, spatially. Ironically, researchers in this tradition are usually quick to renounce the reality of their results, claiming that equilibrium

is only an ideal construct, when in fact there is within capitalism a real tendency toward equilibrium.

In political as well as geographical terms, this question of equilibrium is crucial. Implied in it is the question whether, ultimately, the capitalist mode of production can resolve or otherwise displace its inherent contradictions through some sort of spatial solution, a “spatial fix.” This in turn implies the question of scale, and through an examination of these two issues, we shall make the final approach toward deriving a general theory of uneven development.

If this discussion of differentiation and equalization began rather abstractly with an interpretation and extrapolation of Marx’s disparate comments and ideas, the focus on crisis and the rhythm of accumulation should have made these ideas somewhat more concrete. The sectoral devaluation of capital in the midst of crisis certainly has an immediate ring to it. The process of deindustrialization, for example, makes sense not just as a devaluation process, but one that is specific to certain sectors and specific to certain regions. We have gone part way, then, toward integrating the fundamental tendencies toward geographical differentiation and equalization, and the division of labor, with the temporal rhythm of capital accumulation. In the next chapter we shall try to complete the journey.