

undoubtedly a critical factor for opening up new historical possibilities. Therefore an account of the level and type of development is almost certainly indispensable for conceptualizing possible alternatives to existing social orders.

What we would question is the contention that explanatory primacy, without any qualification whatsoever, should be accorded to the productive forces. At the very least, historical materialism, as Marx sketched it in the 1859 Preface and as Cohen reconstructed it in *Karl Marx's Theory of History*, must be supplemented by a theory of class capacities—or at least an account of the development of working-class capacities under capitalism. In all likelihood, such a theory would have to be based directly on an analysis of social relations of production, the state and ideology—and perhaps also on human interests distinct from the one in which orthodox historical materialism invests the entire dynamic of epochal historical change.<sup>49</sup>

Socialist political strategies must contend directly with the obstacles in the way of developing appropriately revolutionary class capacities: the institutional form of the capitalist state, divisions within the working class and between that class and its potential allies, and mechanisms of ideological domination and deflection. Such obstacles are irreducible to the forces of production. Thus the fettering of these forces in no way ensures the eventual erosion of the obstacles to working-class capacities. A revolutionary theory which sees the building of working-class capacities as an inevitable outcome of technological development, and which fails to grasp the specificity of the role of social structural constraints in the formation of class capacities, will, we think, be incapable of informing revolutionary practice constructively.

Our doubts about the Primacy Thesis, in its orthodox form, do not by any means imply a rejection of the core insights of historical materialism. We believe that the Transformation Thesis, and even the Optimality Thesis, can be incorporated in modified form in a more complex model of historical trajectories. What is needed is the elaboration of a range of possible outcomes, each conditional on the presence of other, relatively independent causal processes. Classical historical materialism charts one normatively salient path of epochal social change, contingent upon the coincident development and fettering of class capacities. But there almost certainly are alternative paths, contingent upon other conditions, within a more open theory of historical trajectories. While we cannot offer such a theory, we shall try to indicate something of its structure in Chapter 5.

49. Plausible candidates might include, among others, interests in freedom, community and self-realization.

## What is Historical about Historical Materialism?

It is widely held that, in the eighteenth and nineteenth centuries, history came into its own as a proper object of scientific scrutiny, and that the writings of Darwin and Marx were decisive in this regard. To be sure, theories of nature and society had always allowed for change. But before Darwin and Marx the predominant view was that stasis, not change, was the natural state of systems. Darwin and Marx definitively reversed this conception, discovering a primary disposition to change in the nature of the objects they described. For them, stasis remained a theoretical possibility, but one requiring special explanation.

While both Darwinism and Marxism constitute revolutionary breaks with earlier conceptions of natural and human history, and while there are important conceptual affinities joining Darwin's theory of evolution and Marx's theory of history, it has not been sufficiently appreciated how these theories differ—precisely in the sense they count as *historical*. Evolutionary theory and historical materialism exemplify different strategies for making history an object of theoretical investigation. By reflecting on these differences, we can gain some purchase on the kind of theory historical materialism is, and appreciate the very special sense in which Marx did indeed construct an *historical* theory. Marx's theory of history must, of course, be judged by standards that could be applied in principle to any purported explanatory program. However, there are special features of the theory that require identification before a proper assessment can be made. The comparison with evolutionary theory is particularly useful for bringing these special features into focus.

In the next section we shall explain the sense in which the Darwinian theory of evolution constitutes a theory of the *history* of living things. This will be followed by a brief recapitulation of the core arguments of historical materialism. In the following two sections, we shall then

compare the characteristic historicity of each theory, first by examining the differences in each theory's core explanandum, and then by examining the structure of each theory's explanations. The chapter will conclude with a discussion of the particularly controversial character of historical materialism's empirical claims.

### The Historical Character of Evolutionary Theory

Whenever theories of change are applied to account for particular instances of change, the resulting explanations are, in one transparent sense, *historical*. What are explained are the vicissitudes of some explanandum between two moments of time. In this minimal respect even the physics of billiard balls would count as an historical theory.

It has been thought that evolutionary theory is historical in a stronger sense. David Hull,<sup>1</sup> adapting ideas that Gustav Bergmann advanced concerning psychology,<sup>2</sup> suggests that a theory is historical when "knowledge of the past is *necessary* to predict the future. Knowledge of the present alone will not do." Although this criterion singles out an interesting structural property a theory might have (roughly, the Markov property), it is not satisfied by the standard models that comprise evolutionary theory. In population genetics, for example, the gene and genotype frequencies of a population at a given time, plus the array of evolutionary forces that then impinge on the population, uniquely determine the future state or the probability distribution of possible future states of the population. The past impinges on the future only in so far as it has affected the present.

This leaves open the question of the degree to which possible variation in past history can produce different states in the present. Natural populations are often said to be "historical" for this reason. Dobzhansky showed how a population's response to selection depends on its genetic composition; since different local populations of the *Drosophila* species he was working with were found to differ genetically, he concluded that the "outcome of such experiments depends upon the geographical origin of the ancestors of the experimental animals".<sup>3</sup> Similarly, Lewontin argued that the present genetic configuration of a population depends

1. David Hull, *Philosophy of Biological Science* (Englewood Cliffs, NJ: Prentice-Hall, 1974), p. 83.

2. Gustav Bergmann, *Philosophy of Science* (Madison: University of Wisconsin Press, 1957).

3. In Ronald Munson, ed., *Man and Nature* (New York: Delta Books, 1971), p. 194. Quoted in Hull, *Philosophy of Biological Science*, p. 85.

"not only on the static probability distribution of environments, but on *their historical sequence as well* . . . if the historical order in which populations occur is a significant variable in population adaptation, then an element of uniqueness is introduced."<sup>4</sup>

Both Dobzhansky's and Lewontin's arguments show, in effect, which properties of a system need to be included in a theory that thoroughly explains that system's possible changes of state. It would not be difficult to describe non-biological systems that have analogous properties. For example, the present state of a steel ball might depend not just on which forces impinged on it, but on the order in which these forces occurred. If the ball is magnetized before it is passed through an electrical field, the result may be different from what would obtain if the ball were magnetized only afterwards.

It is often thought that evolving populations are much more complicated than the systems treated in billiard ball physics; a large number of parameters need to be taken into account if the trajectory of the system is to be plotted. We do not contest this difference, but think it fails to establish a sense in which evolutionary theory is *historical*—or more historical than billiard ball physics. A dynamical equation with one independent variable and an equation with several do not, in that respect, count as qualitatively different. Both may theorize about change in the same way.

Another sort of proposal has been made concerning what makes evolutionary theory "historical". Morton Beckner held that a theory is historical when it contains an historical concept.<sup>5</sup> He suggests that "hungry" is such a concept, since its application to an organism at one time logically implies something about that organism's past. Strictly speaking, Beckner's example is not quite apt, since "hunger" refers to an organism's physiological state at one time without itself implying anything about its previous history. Even so, Beckner is correct in noting that evolutionary theory deploys historical concepts. "Adaptation" is a case in point, since that term is standardly applied only to traits that arose by a process of natural selection.<sup>6</sup> However, this way of showing

4. "Is Nature Probable or Capricious?" *Bioscience* 16 (1966), pp. 25-6; quoted in Hull, *ibid.*, p. 85.

5. Morton Beckner, *The Biological Way of Thought* (Berkeley: University of California Press, 1959).

6. See, for example, George C. Williams, *Adaptation and Natural Selection* (Princeton, NJ: Princeton University Press); Richard Lewontin, "Adaptation", *Scientific American* 239(3) (1978), pp. 156-69; and Stephen J. Gould and Richard C. Lewontin, "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme", *Proceedings of the Royal Society, London* 205 (1978), pp. 581-98, these last two reprinted in Elliott Sober, ed., *Conceptual Issues in Evolutionary Biology* (Cambridge: Bradford/MIT Press, 1984, pp. 252-70).

that evolutionary theory is, in some non-trivial sense, "historical" is problematic. First, it does not mark off anything special about evolutionary theory. "Acceleration" in classical mechanics would count as an historical concept in just the way "adaptation" does.<sup>7</sup> In addition, as Hull remarks (p. 83), a great many evolutionary concepts are, in fact, ahistorical, and it seems that the process laws the theory provides can be formulated strictly in terms of these ahistorical concepts.

We believe that Darwinian evolutionary theory is *historical* for quite a different reason. In holding that the principal force of evolution is natural selection, Darwin built into the structure of his theory the idea of *direction*. Although Darwin was skeptical of the idea that there is some morphological, physiological or behavioral property that natural selection would always increase, he did think of selection as an improver. That is, he thought that natural selection in a reasonably constant environment would raise the average level of adaptedness or fitness found in a population. In this century, the quantitative theories of Fisher and Wright allow this intuitive idea to be made precise—and also vulnerable—in ways Darwin could not have anticipated.

Evolutionary theory is historical in the same way that thermodynamics is. Suppose you saw a movie in which a chamber is divided in half by a wall, with one side filled with oxygen gas, the other with hydrogen. The wall is then removed and the two gases mix together and become homogeneous. This sequence of events in the film allows you to say whether the film was being shown forwards or backwards. This conclusion is underwritten by the second law of thermodynamics, which implies that entropy is a quantity that (probably) increases in a (closed) system of this sort.

Fitness is to evolutionary theory as entropy is to thermodynamics. It is a quantity that the theory of natural selection predicts will increase under specifiable conditions. This is not to deny that natural selection may be confounded by other evolutionary forces (like drift or mutation), which may prevent this result from occurring. And even when selection is the only force at work, an increase in fitness cannot always be assumed.<sup>8</sup> Yet Fisher was right to call his result the "Fundamental Theorem of Natural Selection".<sup>9</sup> The conditions he describes are simple

7. Acceleration involves the comparison of an object's velocity at distinct times. An object's instantaneous acceleration, roughly, is a limit concept wherein the two times are made arbitrarily close together.

8. An increase in fitness is not inevitable if selection is frequency-dependent. See Elliott Sober, *The Nature of Selection: Evolutionary Theory in Philosophical Focus* (Cambridge: Bradford/MIT Press, 1984).

9. In R.A. Fisher, *The Genetical Theory of Natural Selection* (Oxford: Oxford University Press, 1930).

and general enough to show that the theory of natural selection, like the theory of thermodynamics, has a built-in temporal asymmetry. The theory enshrines a difference between the direction from present to future and the direction from present to past. The structure of the theory is *historical* in this non-trivial sense.

### Historical Materialism

The principal objective of historical materialism is to discern the causal determinations that govern the structure and direction of historical change. In explaining by discerning causes, historical materialist explanations are unlike explanations proffered by traditional philosophies of history. However, like its predecessors, historical materialism does claim that the changes it aims to account for are developmental in character and have a determinate directionality. In orthodox historical materialism, as discussed in Chapter 2, directionality is an effect of the way economic structures are selected to maximize the rate of development of productive forces. Thus historical materialism is an optimizing theory.<sup>10</sup>

Optimizing theories are familiar in well-established scientific research agendas, including evolutionary theory in biology. Thus the theory of evolution by natural selection describes the process by which animals and plants best adapted to their environment tend to survive. However the fact that a particular trajectory would optimize the ability to adapt to certain conditions does not cause the system to follow that trajectory. Evolutionary theory, like "extremal" theories in physics, construes optimization as a consequence of a causal mechanism that also produces the changes in question. That a given change in gene frequencies increases the ability of living things to adapt does not explain why gene frequencies change. Rather, natural selection has two consequences: evolution—a change in gene frequencies—and, in addition, an increase in the quantity optimized. Thus evolutionary theory does not impute "fore-sight" to the systems it describes; nor does it maintain that future states of these systems determine present states. In short, it is not a teleological theory in a sense that would compete with standard ways of interpreting causality. Similarly, the fact that historical materialism depicts societies optimizing the rate of development of productive forces does not render

10. Cf. Chapter 4. An optimizing mechanism is sufficient for insuring directionality, but not necessary. The existence of "ratchet mechanisms" to prevent backsliding would suffice. Should historical materialism's optimizing claim prove indefensible, therefore, the theory could be modified without altering its distinctive conceptual structure—provided some direction-conferring mechanism is introduced to replace the optimizing mechanism the orthodox theory supposes.

the theory teleological. Historical materialism avoids teleology by deploying a conceptual structure similar, in pertinent respects, to Darwinian evolutionary theory and other well-established optimizing theories.<sup>11</sup>

Historical materialism provides an account of the processes that govern the structure and direction of human history. The theory purports to explain epochal historical divisions (modes of production) and the conditions for their emergence. Then it is claimed, in addition, that these modes of production explain legal and political “superstructures” and even “forms of consciousness” (ideologies). Since our concern is primarily with the dynamic processes the theory postulates, we shall focus on the explanations provided for epochal historical transformations, construed as changes in modes of production or economic structures. The relation of the “economic base” to superstructural and ideological components of social formations matters much less, we shall find, for the explication of what is specifically historical in Marx’s theory of history.

As we have seen, Marx held that “forces of production” tend to develop continuously, bringing about discontinuous transformations of “social relations of production”. Depending on the level of development of the forces of production, a given type of production relation facilitates or impedes (“fetters”) the development of productive forces. When production relations fetter development, forces and relations of production are in a structurally unstable configuration. The structural instability is the material condition for epochal change—for the reorganization of social relations of production into new economic structures.

Orthodox historical materialism postulates a unique sequencing of discrete economic structures corresponding to different levels of development of productive forces—along which, it is claimed, history tends to

11. To say that, for historical materialism, societies tend to optimize a particular quantity is not to say that actual societies will in fact be optimal with respect to that quantity. Other forces may interfere. Thus many historical materialists acknowledge the possibility—and even the existence—of economic structures in which agents are prevented from transforming social relations of production, even while production relations fetter the development of productive forces. Within the Marxist tradition, the “Asiatic mode of production” is a case in point. In Chapter 2, this idea was noted as a possible counterexample to the Contradiction Thesis. But assuming the descriptive adequacy of the designation, it could be argued that in social formations where the Asiatic mode of production dominates, a complex of conjunctural features—including, among others, a highly centralized political administration, a characteristic pattern of town–countryside relations, technical requirements of agricultural production, and even religious ideology—combine to impede social transformations that would otherwise optimize the level of development of productive forces. Asiatic societies, according to this understanding, are materially ripe for epochal transformation, but incapable of organizing it. Unless overcome by external forces—for instance, by an expanding capitalism—these social formations are destined for permanent stagnation, not development.

move. Discrete economic structures give rise, moreover, to different forms of class domination, which in turn generate class struggles in and over social relations of production. In the orthodox view, these struggles are inexorable and their outcomes predictable. That class best suited, at a particular level of development of productive forces, for further developing productive forces will ultimately prevail. Thus there is *selection for* that set of production relations that is *optimal* for further developing productive forces.<sup>12</sup> For orthodox historical materialists, then, the *possibility* of change along the depicted trajectory is, in the long run, *sufficient* for the indicated change to occur. Where there is a transhistorical human interest in transforming economic structures to unfetter the forces of production, the requisite class capacities develop and social relations of production will be transformed accordingly. Thus, at the level of abstraction at which it is pitched—where the trajectory of historical epochs, not particular events, is the proper explanandum—orthodox historical materialism is a theory of historical inevitability, of an unavoidable sequence of epochal stages.<sup>13</sup>

As such, the theory is almost certainly untenable, as we have already maintained. But, as we shall see in Chapter 5, historical materialism can dispense with its commitment to historical inevitability, without becoming trivial or losing its distinctive character. For now, it will be convenient to keep the orthodox theory in mind the better to grasp the special characteristics of the kind of theory Marx developed. These features pertain to the more plausible, though less ambitious, historical materialisms we shall also go on to describe.

12. However, the orthodox theory does not specify the selection *mechanism*. That is, it has no analogue, strictly speaking, to the way evolutionary theory not only can compute the changes that will occur when selection and other forces act on a population, but also can explain why the ecological circumstances of the population generate a particular array of selection pressures. Historical materialism claims that history has a kind of optimizing property, but says little about the mechanism or mechanisms that make this true. On this issue, see the exchange between Cohen and Jon Elster in *Political Studies* xxviii, 1 (1980).

13. As discussed in Chapter 2, historical materialism construes the connection between forces and relations of production and also between base and superstructure as functional relations. In this way, the theory recognizes reciprocal interactions between the levels it describes. It is not a *unidirectional* causal theory. Nevertheless, it does appear to ascribe causal and also explanatory primacy to forces over relations of production; and also to the economic base over superstructural phenomena. We shall assess these primacy claims, among others, in Chapter 7. However, it should be noted here that even the most orthodox historical materialists acknowledge reciprocal interactions between forces and relations of production, and between base and superstructure. Thus historical materialists never treat the economic base as a mere epiphenomenon of the forces of production, having no causal efficacy in its own right; nor do they treat superstructural phenomena as epiphenomena of the economic base. In other words, according to one legitimate understanding of the often abused expression, historical materialists, even of the most orthodox kind, are not “vulgar Marxists”.

### The Explananda of Evolutionary Theory and Historical Materialism: Events vs. Trends

Evolutionary biologists and practicing historians usually aim to explain particular events, not major historical trends. Historical materialism, on the other hand, is a theory of trends and patterns of transformation. The explananda of evolutionary biologists and practicing historians are therefore relatively fine-grained. Historical materialists, on the other hand, attempt to explain the relatively coarse-grained properties of the epochal trajectory of social change.

The difference can be made clearer by reflecting again on the contrast between the conceptual apparatus of evolutionary theory and historical materialism, respectively. Contemporary population genetics allows the computation of the evolutionary trajectory of a population (or the probability distribution of possible trajectories) once the values of a specified set of parameters have been determined. Geneticists can then compute the changes in gene frequencies that will occur, given particular evolutionary forces. In this way changes of gene frequencies within populations, fine-grained changes, are explained. However, population genetics says nothing about large-scale changes in life's diversity. Major changes are understood as cumulative effects of small-scale changes. In principle, anything that can happen in evolution can be represented formally. Evolutionary biologists can therefore *describe* major transformations. But evolutionary theory provides no special insight into these changes, and gives no account of their structure or underlying dynamic.

It is easy to see why evolutionary theory has so little to contribute to the understanding of more coarse-grained events. If natural selection is indeed the pre-eminent evolutionary force, change is mainly the result of exogenous, often environmental, factors. Organisms change to track their environments. Selection will then produce small changes in gene frequencies on a timescale of relatively few generations. When this process continues throughout the millions of years during which life has and probably will exist on earth, the outcome is largely indeterminate. In as much as environmental change is itself highly variable in space and time, considerable diversity and very little overall pattern will result. Organisms will be assembled fortuitously and the collection of organisms, the totality of life, will be an accidental hodge-podge.

For standard evolutionary theory, then, the major epochs of natural history are "accidents". In principle, of course, these changes can be explained, given enough information about gene frequencies and the required parameter values. But evolutionary biologists have no distinct explanation for the trajectory of change itself. Darwinism construes

epochs—the "Age of Dinosaurs", for example, or the "Age of Mammals"—in the same way that non-Marxian historians regard, say, the emergence of capitalism: as the fortuitous result of an accumulation of small-scale changes.

Practicing historians share the evolutionary biologist's focus on the particular. They too provide fine-grained explanations, depicting more general events or trends as accidental consequences of particular events. But there is a difference. Most historians would deny that any systematic general theory accounts for particular historical explanations. Historians have no analogue to natural selection. In this sense, mainstream historiography is essentially atheoretical in its treatment of patterns of change. Every change can be explained causally, at least in principle; but there is no general principle governing historical change and no systematic joining of particular explanations that bears explanatory interest.

For most historians "history", then, can designate anything in the past. There are no constraints on what counts as an historical event except that it has already occurred, and no constraints on the sorts of explanations historians may provide. Historical explanations and their explananda are irreducibly heterogeneous. To hold that history consists of a motley of past events, explained by any variety of causal or interpretive considerations, however, says nothing about historical materialism's prospects. It may be that there is no general theory of historical processes. But it may also be that the experienced complexity of the texture of history can give way to laws of its underlying dynamic. Neither claim is amenable to a priori proof or confutation. Whether or not history admits of a general theory is an issue to be discovered, not settled by fiat. Should historical materialism or some rival theory of comparable generality prove sustainable, the case against atheoreticism will be made. Meanwhile, the issue remains open.

In any case, the outcome should not matter much for particular historical explanations. Despite what many Marxists suppose, a general theory of history like historical materialism is too coarse-grained to affect explanations of most particular events significantly. Thus history itself might follow a technological imperative, while many particular events are explicable on quite different grounds. Practicing historians, like evolutionary biologists, are, in the main, theorists of fine-grained phenomena. Historical materialists, on the other hand, are only concerned with large-scale trends and epochal transformations. The principles that govern their explananda need not have explanatory resonance for more refined explananda.

These different ways of constructing their explanatory objects—epochal trajectories versus small-scale events—have important implications for the ways historical materialism and Darwinian evolutionary

theory periodize history. Historical materialism periodizes history into discrete modes of production, which are conceived as real divisions derived, in principle, from the internal logic of the theory of the historical trajectory. It provides a list of "natural kinds" in much the way that chemistry provides a natural kind division of matter (into the elements represented by the periodic table). The theory of evolution, on the other hand, sees the divisions in the history of life as essentially contingent outcomes derived from an *ex post facto* analysis of the historical record.

### Explanations in Evolutionary Theory and Historical Materialism: Endogenous and Exogenous Causal Processes

It is not particularly unusual to claim, as historical materialists do, that history admits of epochal divisions, or even that the periodization historical materialism proposes is explanatory. Concepts of feudalism, capitalism and socialism are widely held to have explanatory force and even to indicate real historical divisions. What is contentious is the claim that it is possible to construct a theory of the inherent tendency for societies to move from one of these forms to another along a predictable path. Unlike chemistry, therefore, historical materialism accounts for the list of forms in its "periodic table" by appeal to an inherent developmental dynamic.<sup>14</sup> Accordingly, historical materialism is a theory not just of possible variations, but of historical change. Historical materialism's distinctive historicity resides in its insistence on this very contentious point.

Historical materialism resembles teleological philosophies of history in conceiving the processes that move history along as endogenous. It is ever-changing relations (of correspondence and non-correspondence) between forces and relations of production that account, in the Marxian view, for modes of production and their sequencing. Historical materialist development is *internal* to systems constituted by forces and relations of production.<sup>15</sup>

14. Arguably, cosmology explains, in principle, the emergence—in cosmic history—of the elements the periodic table displays. However this may be, chemistry itself is not a dynamic theory in the sense that historical materialism is.

15. By *endogenous*, we mean internal to the system described. Whatever is not endogenous is, then, *exogenous*. Needless to say, the distinction is theory-relative in the sense that, for instance, it is (Marxian) social theory that tells us that, say, forces of production are endogenous to social systems while climate is not; or (Darwinian) evolutionary theory that tells us that mating systems are endogenous to populations, while, again, climatic change is not. In particular explanations, it may not always be immediately apparent whether or not a causal factor is endogenous to the system described. However, for the present purpose, the distinction is clear enough. In any case, our concern is not with the *identification* of particular factors as endogenous or exogenous, but with the character of the explanations provided by historical materialism and Darwinian evolutionary theory, respectively.

Mainstream historiography acknowledges few, if any, endogenous processes, and in any case assigns them no special explanatory importance. Evolutionary biology does recognize some causal factors internal to evolving populations, for example, random genetic drift and systems of mating. However, from a Darwinian perspective, it is natural selection, not endogenous processes, that determines the trajectory of organismic change. In the Darwinian world-picture, evolutionary change is not, for the most part, internally driven. In so far as natural selection governs biological evolution, evolution is a matter of fitting organisms to their environments.<sup>16</sup>

Historical materialism, in contrast, recognizes *only* endogenous causal factors. The theory provides no way to describe exogenous sources of change. It would therefore count against historical materialism if it turned out that the best explanation for some epochal historical transformation, say, the emergence of capitalism out of feudalism, appeals principally to exogenous causes. Historical materialism—or, more precisely, any historical materialism sufficiently general in scope to cover the transition from feudalism to capitalism—would be mistaken if feudalism turned out to be an inherently stable (though not immutable) economic structure that first became dislodged in Europe in consequence of causes distinct from the social structure of feudal societies—the special geographical situation of Europe, its particular forms of political administration, its characteristic pattern of town/countryside relations, its dominant religious ideology, its fortuitous "discovery" of the Americas, and so on. From an historical materialist point of view, exogenous factors, if actually instrumental in feudalism's demise, are effective only in virtue of feudalism's inherent structural contradictions.<sup>17</sup>

Historical materialism's distinctive historicity consists precisely in the role it accords endogenous processes. Admittedly, one could discern a

16. Of course, even the strictest Darwinians acknowledge, in principle, if not in practice, endogenous (biological) *constraints* on the changes that natural selection can produce; cf. Gould and Lewontin, "The Spandrels of San Marco and the Panglossian Paradigm".

17. Care must be taken, however, in determining what would count as contrary evidence to historical materialism. The theory is intended to explain not particular transformations within epochs, but the succession of epochs themselves. Within epochs, exogenous factors—particularly the impact of other societies—can be expected to alter the effects of endogenous development. Thus, in the Marxian view, capitalist societies are expected to extend capitalism by conquest (economic or political), since capitalist societies, in virtue of their "laws of motion", have a tendency to expand until rival, pre-capitalist social formations are brought into the capitalist orbit. Therefore, historical materialism would not predict capitalism to emerge endogenously *everywhere* as the solution to the contradictions of feudalism. In fact, it is unlikely, from a Marxian point of view, that capitalism would anywhere ever emerge endogenously again, once it has emerged endogenously somewhere once. Wherever there is the possibility of physical contact between capitalist and pre-capitalist political economies, the transition to capitalism will be assured through exogenous imposition, not endogenous development.

structure to historical change on the view that, as in evolutionary theory, what prompts transformations in human societies is mainly exogenous to historical systems. It might be, for example, that the direction of human history is explained by changes in climate, or by epidemiological factors, or by any number of other exogenous causes. These causes could effectively divide history into discrete natural kinds. It is even possible to imagine a theoretical warrant for sequencing these natural kind divisions into a determinate trajectory. We need only suppose that the exogenous causes are somehow joined in some kind of systematic temporal sequence. Thus we can imagine, say, a suitably general theory of trajectories of climatological change which could impart to history a predictable trajectory, but not an internally-driven direction in the sense of historical materialist development.

Thus an account of historical change that recognizes only exogenous causes would remain a theory of historical *variation* only, even if these exogenous causes are themselves amenable to the kind of general theory just indicated. For this reason, such an account would be less historical than historical materialism. The dynamic of change would be ascribed to factors *outside* history. Historical materialism, in contrast, though avoiding the objectionable teleology of earlier philosophies of history, conceives change propelled along by an internal necessity. In this respect, unlike accounts of historical change that consider exogenous variables decisive, historical materialism retains the radical historicity of the Hegelian view of history, while at the same time maintaining, unlike its Hegelian predecessor, the explanatory objectives characteristic of modern science.

The idea that evolution is internally driven, though alien to Darwin's outlook, has had its defenders. Lamarck, although he accorded some role to a "force of circumstance", wherein environmental factors could tinker with a species' morphology, physiology and behavior, nevertheless accorded primary importance to a progressive tendency for life to ascend from one stage of development to the next. The ladder of life was foreordained; lineages began by spontaneous generation and then begin the ascent. This developmental theory conceived of evolution as an "unfolding" of a pre-programmed sequence. Darwin's idea of natural selection transformed the way population change is theorized. For Lamarck, populations evolve because the organisms in them *change* in accordance with an internal dynamic. For Darwin, populations evolve because organisms *vary*, and an exogenous process then sifts and winnows. Indeed, natural selection can transform a population even when no organism changes at all.<sup>18</sup>

18. For discussion of Lamarck's theory, see Ernst Mayr's "Lamarck Revisited", in *Evolution and the Diversity of Life* (Cambridge, MA: Harvard University Press, 1975), pp. 444-535. For further analysis of the structural difference between developmental and variational theories of evolution, see Sober, *The Nature of Selection*.

Historical materialism thus not only provides a description of history's structure, accounts for that structure and orders the items of that structure chronologically; it also accounts for that ordering historically, by reference to processes that are endogenous to the very historical systems the theory identifies as its proper domain. In this regard, it is a radically historical theory, different in kind from evolutionary theory and also from rival accounts of historical change which, like evolutionary theory, conceive historical change as the effect of exogenous variables on historical communities.

### Conclusion

Both historical materialism and Darwinian evolutionary theory advance two different kinds of hypotheses. First, each offers a general hypothesis about the *existence* of particular mechanisms that generate effects in the world—the "dialectic" of forces and relations of production in historical materialism, natural selection in evolutionary theory. Second, each theory also makes claims about the *primacy* of their respective mechanism for explaining the distinctive explanandum of the theory. These two kinds of hypothesis are often conflated, but they have a certain autonomy, since clearly an existence hypothesis can be valid and yet the associated claim to explanatory primacy may be false.

In evolutionary biology today, there is virtually no controversy over the existence of natural selection as a causally relevant mechanism. What is controversial is the traditional Darwinian claim that natural selection is the most important determinant of evolutionary change. It is uncontroversial that a body of theory provided in population genetics describes the consequences of various evolutionary forces, both singly and in combination. The equations require that one specify the values of relevant parameters like selection coefficients, mutation and migration rates, mating patterns and population size. Once these parameters are specified, the laws predict what the population will do. Debate in evolutionary theory concerns the relative importance these parameters have had in the actual history of life. Has natural selection been the pre-eminent force of evolution? Has random genetic drift played a significant role? Such controversies take the existence of Darwinian mechanisms for granted, but question their relative explanatory power in a particular empirical experiment: life on earth.

The situation is quite different in historical materialism. What is controversial in historical materialism is not just the hypotheses its proponents advance to explain actual history, but the very claim that historical materialism identifies a causally relevant process. Historical

materialism asserts a (possibly counterfactual) claim about the effects on patterns of social change of the interactions of forces and relations of production (a) wherever the conditions under which it has application obtain, and (b) wherever there are no interferences of sufficient force to countervail the effects of historical materialist development. Historical materialists from Marx on, however, have not been content simply to postulate the existence of these endogenous mechanisms; they have also advanced the historical hypothesis that these mechanisms provide the primary explanation for the actual course of the history of human civilization. Of course, historical materialism does not deny that, as a matter of historical fact, exogenous factors—not recognized by the theory—have causal efficacy. But just as Darwinian theory hypothesizes that, as a matter of historical fact, natural selection is overwhelmingly the most important factor accounting for evolutionary change, so historical materialism supposes that, as a matter of fact, the dynamic processes the theory acknowledges actually account for (epochal) historical change. Thus historical materialism favors endogenous over exogenous causes twice over: its general laws acknowledge only endogenous processes, and its associated historical hypothesis asserts that these endogenous processes have played a crucially important role in determining the shape of human history.

Many critics of historical materialism challenge the claim that these mechanisms exist and impart any tendency at all to historical development. This challenge differs from the contention that these mechanisms, as a matter of fact, have not played the pre-eminent role the theory assigns them. What is denied is the claim that human history has any overall directionality, other than the trivial chronological directionality of the sequence of events. The transhistorical endogenous mechanisms postulated by historical materialism to determine the epochal trajectory of human history are not simply overwhelmed by other causal processes. On this view they don't exist and therefore cannot even generate a weak tendency for development.<sup>19</sup>

In the next chapter, we examine a particularly insightful example of this genre of criticism.

19. Typically, the evidence used against the existence hypothesis comes from the analysis of the empirical importance of other causes of historical change. Demonstrating the importance of other causes, however, is only evidence against the historical hypothesis that the forces and relations of production are sufficiently powerful causes to explain the overall contours of historical development by themselves. It does not constitute evidence against the existence hypothesis itself. To reject the existence hypothesis it is either necessary to show that some of the internal assumptions of the model are false (e.g. that human beings are not rational in the manner assumed by the hypothesis) or empirically to identify situations in which the conditions postulated by the theory hold, and yet the hypothesized effects are not produced.

## Historical Trajectories

Criticisms of historical materialism tend to take two forms: either they are hostile attacks by anti-Marxists intent on demonstrating the falsity, perniciousness or theoretical irrelevance of Marxism, or they are reconstructive critiques from within the Marxist tradition attempting to overcome theoretical weaknesses in order to advance the Marxist project. In these terms, Anthony Giddens's two books, *A Contemporary Critique of Historical Materialism* and *The Nation State and Violence*, are rare works: appreciative critiques by a non-Marxist of the Marxist tradition in social theory.<sup>1</sup> While finding a great deal that is wrong with Marxist assumptions and theoretical claims, Giddens also argues that "Marx's analysis of the mechanisms of capitalist production ... remains the necessary core of any attempt to come to terms with the massive transformations that have swept the world since the eighteenth century."<sup>2</sup> Indeed, in his use of the labor theory of value and his analysis of the capitalist labor process, Giddens is closer than many contemporary Marxists to orthodox Marxism. These books are not wholesale rejections of Marxism, but attempts at a critique in the best sense of the word—a deciphering of the underlying limitations of a social theory in order to appropriate in an alternative framework what is valuable in it. While many of Giddens's arguments against historical materialism are unsatisfactory, his books represent a serious engagement with Marxism. They deserve a serious reading by Marxists and non-Marxists alike.

1. Anthony Giddens, *A Contemporary Critique of Historical Materialism* (Berkeley: University of California Press, 1981); and *The Nation State and Violence* (Berkeley: University of California Press, 1985).

2. *A Contemporary Critique*, p. 1.