Marxist Philosophy

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Contents

PART I. IS THERE A MARXIST PHILOSOPHY, AND IF SO, WHAT IS IT?	3
MATERIALISM	7
DIALECTICS	15
MARXIAN DIALECTICS	19
MARXISM AND SCIENCE	25
MARXISM AND PHILOSOPHY	26
PART II. MARXISM, KNOWLEDGE, AND TRUTH	28
MARXISM AND MORALITY	36
DETERMINISM AND FREEDOM	43
THE TYRANNY OF THEORY	50

PART I. IS THERE A MARXIST PHILOSOPHY, AND IF SO, WHAT IS IT?

It should be clear by now that I think there is, in fact, a Marxist philosophy. Throughout this book, I have tried to show that Marxism is best understood as a philosophical worldview - specifically, a variant of Hegelian Idealism that sees itself and presents itself as materialist. Beyond this, I believe Marx and Engels did hold to a conscious ontological position, a view of the nature and structure of the natural world, one that has come to be called "Dialectical Materialism." Although I suspect that most Marxists, especially the "orthodox" Marxists of the Stalinist, Leninist, Maoist, and Trotskyist persuasions, would agree with me, some commentators have argued that there is not, and cannot be, a truly Marxist philosophy of nature, and definitely not one called "dialectical materialism." Among these figures are the Hungarian philosopher and literary critic, Georg Lukacs (at least in his book, History and Class Consciousness); the former Polish dissident, once-Marxist, and ultimately religious thinker, Leszek Kolakowski; and the major French spokesperson of the philosophy of Existentialism, Jean-Paul Sartre. In the view of those who hold to this position, Marx, in contrast to Engels, was not interested in questions of "metaphysics," that is, abstract speculation about the nature of the universe, and as a result, did not have an ontology/philosophy of nature of any kind, and certainly not one describable by the term "dialectical materialism."

The contention of Lukacs, Kolakowski, Sartre, and the others who share their opinion, rests on several interrelated claims and arguments, some implicit, some explicit. The first of these is that neither Marx nor Engels ever used the term "dialectical materialism." This is literally but not substantially true. Although the precise words, "dialectical materialism," do not occur in any of Marx and Engels' works, Engels does use the term "materialist dialectic" in his *Ludwig Feuerbach and the Outcome of Classical German Philosophy*, originally published in 1888 (C.P. Dutt, ed., International Publishers, New York, 1941, p. 44).

This, it seems to me, amounts to the same thing as "dialectical materialism." Moreover, in this work, Engels approvingly credits Joseph Dietzgen, a German worker who, according to various sources, was the first person to coin the term "dialectical materialism," with coming up with the idea independently of Marx and himself, in a work published in 1869. So, it seems safe to say that while Marx may not have used the term, "dialectical materialism," Engels (basically) did. The precise formulation, "dialectical materialism," later appeared in a book about Engels by Karl Kautsky, the major theoretician of the Second or "Socialist" International, and was eventually popularized by the "father of Russian Marxism," George Plekhanov.

The second claim of the deniers of "dialectical materialism" is that the mature Marx – by all accounts, including Engels', the dominant and intellectually superior partner of the Marx-Engels collaboration – never wrote a systematic work on philosophy. All we have from Marx's pen that explicitly address philosophical questions are works that are considered to be "immature"; that is, material written before he had come to his fully Marxist conclusions. These works include: (1)

Marx's doctoral dissertation on the philosophies of the ancient materialists, particularly, Democritus and Epicurus; (2) *The Economic and Philosophic Manuscripts of 1844*, which take up such questions as "alienation" and advocate what some, such as Raya Dunayevskaya, Erich Fromm, and Kolakowski himself, have characterized as a "humanistic" Marxism; (3) *The Holy Family*, a polemical, almost satirical, critique of several of Hegel's disciples; (4) the "Theses on Feuerbach," terse comments, adding up to just a few pages, on the philosophy of the German materialist, Ludwig Feuerbach; and (5) *The German Ideology*, a work co-written with Engels that attempts to come to grips with their philosophical past. All of this was written prior to late 1847–early 1848, the date generally considered to denote Marx's arrival at his supposedly mature and scientific world-view. The only substantial writings devoted specifically to philosophical questions produced by the pair after they had reached their maturity were written by Engels, and the position Engels propounds in these works is not, according to Lukacs, Kolakowski, Sartre, and others, really Marxist at all.

The third, and more meaningful, argument of those who contend that Marxism (or at least Marx's Marxism) does not have an ontology is that the "dialectic" - roughly (and this is my definition), the conception of reality as a complex and contradictory process whose component parts simultaneously interpenetrate, oppose and negate, modify and generate each other – applies to history, but not to nature. More specifically, to these thinkers, the dialectic primarily characterizes the socio-economic process, involving material reality, consciousness, and self-consciousness, in which human beings change the material world, themselves, and their conception of themselves (and of the world), through work (labor) and struggle. (Among some Marxist theoreticians and others knowledgeable about Marxism, this process is called praxis, from the Greek word for "practice.") It is in and through this process - according to Marxism - that human consciousness arises and develops, simultaneously shaped by and shaping that work, struggle, and nature itself. Only praxis, these commentators insist, displays "internal relations," that is, constitutes an organic whole whose components/internal parts interact in an interpenetrating and mutually generating - in other words, in a truly dialectical - fashion. In contrast, this argument goes, nature does not exhibit "internal relations." The relations among natural phenomena are "external"; the entities and processes of nature always stand outside of each other, do not interpenetrate, and therefore cannot be said to interact in a dialectical manner. As a result, since nature itself is not and cannot be dialectical, there can be no such thing as "dialectical materialism," in the sense of a Marxist philosophy of nature.

At the risk of simplifying, I would say that for Lukacs, Kolakowski, Sartre, and those who think as they do (and they believe for Marx, but not for Engels), if a process does not involve consciousness or ideas, it cannot be dialectical. Pure nature – that is, nature as it supposedly is in itself, outside of humanity's interaction with it, which is what an ontology attempts to describe – exhibits no dialectic.

Fourth, to these philosophers, the very notion that Marx might have had a philosophy of nature is false on the face of it. This is because, from what they see as the real Marxist point of view, nature as it is in itself cannot be conceived.

Since, to Marx, knowledge emerges out of praxis, that is, humanity's efforts to transform nature through labor, humanity cannot know nature in any other way than through how human beings interact with it. In other words, all humans can know is nature as we relate to it – as we interact with it and change it, as we exercise our labor, including our scientific labor, on it – not how it is in itself. As a result, a Marxist ontology/philosophy of nature is an absurdity, and the concept of "dialectical materialism" or a "materialist dialectic," as put forward by Engels and other Marxists, is un-Marxist.

Last, in the view of these thinkers, Marx could not have held to a philosophy of "dialectical materialism" because such a philosophy implies a rigid deterministic framework that is alien to Marx's view of history, which, based as it is on the centrality of praxis, is open-ended and undetermined. According to this claim, in Marx's view, but not in Engels', humanity determines its own future and its own fate, and is not bound by the determinism postulated by dialectical materialism.

I do not believe the standpoint of these thinkers on this question can be sustained. While it is true that there are contradictions between certain facets of the Marxian theory of history (the "materialist conception of history" or "historical materialism") and the Marxian conception of nature (the "materialist dialectic" or "dialectical materialism), as well as within each of these, it is much too pat (and too convenient) to describe this simply as a contradiction between the fully Marxist outlook of Marx and the supposedly "positivist," "scientistic," and ultimately unMarxist, position of Engels. In light of the evidence, it is much more reasonable to argue that Marxism as a whole, including the supposedly "real" Marxism of Marx, contains "positivistic," and "scientistic" elements that coexist uneasily with other aspects of the Marxian worldview.

Let's try to answer these contentions in more detail.

First off, Marx and Engels were life-long friends, collaborators, and, as the Marxist movement often describes them, comrades-in-arms. They met as young men and discovered that they were thinking along similar lines and had reached similar conclusions. They struggled together in various arenas throughout their adult lives, were in constant communication, as shown by their voluminous correspondence, and spent hours in broad-ranging conversation when they had the opportunity to do so. It is hard to believe that they did not discuss all the subjects that interested them, including those of philosophy and science, at great length. It is also difficult to imagine that they were not in fundamental agreement on what to them would have been fundamental questions. Both were men of extremely strongly-held opinions (as reflected in the many, usually ferocious, polemics they wrote against those who differed with them), and if they had disagreed with each other in meaningful ways, this would almost inevitably have been reflected in their correspondence. (In fact, it probably would have led to a break in their personal/political relations.) But there is no evidence of this.

Second, two of the books, and the most important ones, Engels wrote that deal with questions of philosophy/ontology were written, or were at least begun, while Marx was still alive. The first of these, *Herr Eugen Dühring's Revolution in Science*, now known as *Anti-Dühring*, a polemic against a recent convert to socialism, was first published as a series of articles in the Leipzig *Vorwärts*, the central organ of the German Social-Democratic Party, in 1877 and 1878, and later compiled in book form. It is extremely unlikely that these articles, and later the book, would have been published had Marx not agreed with and approved of them. In fact, according to Engels' preface to the second edition of the book:

"...it was of course self-understood between us that this exposition of mine should not be issued without his [Marx's – RT] knowledge. I read the whole manuscript to him before it was printed..." (*Anti-Dühring*, International Publishers Co., Inc., New York, 1939, p.13.)

The second book, left by Engels as an unfinished manuscript and published much later as *The Dialectics of Nature*, was begun some time after 1871, probably 1872. This was when Engels came to London (from Manchester, where he had managed the family textile business) and began to immerse himself in the scientific literature of the day. According to the British scientist and Marxist, J.B.S. Haldane:

"He (Engels) had always been a student of science. Since 1861 he had been in close touch with the chemist Schorlemmer at Manchester, and had discussed scientific problems with him and Marx for many years." (Preface to Engels, *Dialectics of Nature*, International Publishers, N.Y., 1940, p. viii.)

Moreover, in his preface to the book, Haldane indicates that quotations from Greek philosophers, written in Marx's handwriting, appear in Engels' manuscript, suggesting that Marx had read Engels' work at some point.

In light of this, to draw a sharp distinction between Engels' and Marx's views on questions of science and philosophy seems far-fetched. It is possible, indeed, probable, that Marx would have expressed himself differently from and better than Engels. But it is not likely that he would have disagreed substantially with what Engels wrote.

Third, even if we leave all these considerations aside, even if we just consider Marx himself, it is virtually impossible to come to a different conclusion. Marx was a person with an extensive background and ongoing interest in philosophy, including philosophies of nature. As mentioned, he had written his doctoral dissertation on the outlooks (the ontologies) of ancient materialist philosophers, while a significant section of his book, The Holy Family, consists of a discussion of the English empiricists and the French materialists. For a time, he considered himself to be a follower of Hegel (who did have a philosophy of nature) and openly admitted Hegel's great influence on his thinking. In addition, all of Marx's early writings are highly philosophical in both content and form, and even his mature, supposedly scientific, works, such as Capital, are laced with philosophical terminology and concepts. Indeed, as I have argued in previous chapters, these mature works are fundamentally philosophical in nature. Not least, Marx was a systematic thinker. He was interested in, was extremely knowledgeable about, and had written substantial works that touched on, a large number of fields. Indicative of this, his theory of history encompasses, and attempts to explain in a logically consistent way, virtually all areas of human endeavor, including ontologies. It is difficult to believe, as Lukacs, Kolakowski, and Sartre imply, that Marx was not interested in ontological questions and even harder to accept that he did not have an ontology, a systematic conception of the nature and structure of the universe, of his own.

And if Marx did have such an ontology, what kind could it have been except something that might be called "dialectical materialism"? In the first place, how could it have been anything but materialist? Marx's theory of history is, at least consciously, materialist, and militantly so. He considered non-materialist, that is, Idealist, theories of history to be little more than a cover for religion, which he viewed as a noxious delusion, an example of "false consciousness." Is it reasonable to accept that Marx was a materialist in matters of history and an Idealist (or something else – and if so, what?) in matters of ontology? Marx also considered his view of history, indeed, his entire conception of socialism, to be scientific, and like many observers of science at the time and since, he considered science to be inherently materialist. So how could he have been anything but a materialist?

Beyond this, Marx criticized previous materialists for being mechanical and one-sided. This one-sidedness is what, he said, led to the active side of philosophical/critical thought being developed by the Idealists. How, then, could his materialist ontology have been anything but "dialectical," a concept borrowed from the Idealists, particularly Hegel. In sum, if we accept this line of reasoning, how could Marx not have had an ontology, and how could it have been anything but something that might accurately be termed "dialectical materialism"?

(The fact that Lukacs, Kolakowski, Sartre, and others believed that the dialectic applies only to praxis and history but not to nature does not mean that Marx did, too. Interestingly, Lukacs, Kolakowski, and Sartre are in agreement with Hegel on this point. Hegel insisted that nature is not dialectical; only the realm of the Ideal, that is, the realm of spirit, mind, consciousness, exemplifies the dialectic. In Hegel's conception, nature is the alienated "other" of mind or spirit, and, as such, exhibits no truly dialectical processes or structure.)

Finally, in the previous chapter, I dealt with the question of Marx's theory of history, including its ambiguity on the question of whether history is open-ended or determined. As I've argued throughout this book, the insistence on the part of both Marx and Engels that their brand of socialism is "scientific" as opposed to "utopian" ultimately rests on their contention that socialism/communism, to be achieved through a revolution and the establishment of the dictatorship of the proletariat, is the "necessary" and "inevitable" outcome of human history. Marx believed this as much as Engels. It is this that explains why the terms "necessary," "historical necessity," "necessarily," "inexorable," etc., appear so often throughout the writings of the pair, not only the works of the supposed "positivist" Engels, but also those of the "real" Marxist, Marx himself. The use of such language strongly suggests that the fundamental position of Marxism, including Marx's Marxism, is that history is determined and predictable, not contingent. This question will be taken up at greater length in the next chapter.

Based on all this, I think it is safe to say: (1) Marxism does have a consciously held ontological standpoint (a philosophy of nature); (2) This outlook can accurately be described as "dialectical materialism"; (3) Engels' writings on philosophy can be taken to be an adequate representation of what Marx also believed and therefore an accurate presentation of the Marxist viewpoint (however embarrassing this may be to some people).

(The most substantial case for the un-Marxist nature of "dialectical materialism" is made by Kolakowski in his threevolume magnum opus, *Main Currents of Marxism* (Oxford University Press, 1978). Among other things, this is a very erudite, very sophisticated, and ultimately very strained, attempt to delineate and defend a humanist, libertarian version of Marxism, and to blame the Stalinist outcomes of Marxism on Engels, Plekhanov, Lenin, and other supposed misinterpreters of the "real" Marxism of Marx (although Kolakowski does not let Marx entirely off the hook). Interestingly, although Kolakowski discusses Engels' "scientistic" views at some length in Volume One, he never mentions the fact that, as I indicated above, Marx read, and apparently approved, Engels' writings on ontological questions.)

With this said, we can proceed to a discussion of dialectical materialism.

MATERIALISM

As the term implies, dialectical materialism (or the "materialist dialectic") consists of two facets: materialism and dialectics. Let's take a look at them, starting with materialism.

Marx and Engels divided the various philosophies expounded over the millennia into two major categories or schools – Idealism and materialism – based on these philosophies' stance on the nature of the fundamental substance in the universe. (In contrast to other writers, I capitalize Idealism to delineate it from the more commonly understood sense of the word.) Idealists believe that thought (or ideas – including, spirit, mind or consciousness) constitutes the fundamental substance, and that matter flows out of, is created by, or is otherwise based on, thought, mind, spirit, or consciousness. Materialists, in contrast, contend that matter is the fundamental substance in the universe and that it is matter that gives rise to thought, mind, consciousness, and what other people (though generally not materialists) call spirit.

Here is how Engels puts it, in his Ludwig Feuerbach:

"The great basic question of all philosophy, especially of modern philosophy, is that concerning the relation of thinking and being."

"The answers which the philosophers gave to this question split them into two great camps. Those who assert the primacy of spirit to nature and, therefore, in the last instance, assumed world creation in some form or other...comprised the camp of idealism. The others, who regarded nature as primary, belong to the various schools of materialism. (*Ludwig Feuerbach and the Outcome of Classical German Philosophy*, op. cit., pp. 20, 21.)

(In fact, I would argue, both schools of philosophy implicitly accept the idea that there are two fundamental substances in the universe – thought and matter. This is because, despite their claims, neither school is convincingly able to completely reduce either of the two entities – matter or mind – to the other. The question that really concerns them is which of the two substances is primary – which comes first and gives rise to, or causes, the other. Thus, Idealism accepts that there is such a thing as matter, which is qualitatively different from mind or spirit [otherwise, why have a separate term for it?]; it merely insists that matter flows out of, is [or was] created by, or is in some way dependent on, thought, mind, consciousness or spirit. In the same manner, materialism accepts that there is such a thing as thought, mind, or consciousness that is distinct from matter but insists that these things flow out of, are created by, are dependent on, or are reflections or forms of, matter. In a sense, then, both schools of philosophic thought are dualist, in that they believe that there are two substances – matter and mind/ideas – that make up the universe, not one.)

In this debate, Marxism takes its stand on the side of materialism. As we have seen, it developed and defends what it calls the "materialist conception of history" or "historical materialism" in the realm of human society, while in the realm of nature or natural phenomena, it propounds what came to be called "dialectical materialism."

Significantly, the meanings of the terms "material," "materialist," and "materialism" differ substantially in these two facets of Marxist theory. In historical materialism, "material" basically means "economic," or somewhat more broadly, "socio-economic." Thus here, "materialism" means the belief that economic production plays the determinant role in human history – specifically, determining the nature and evolution of each form of society – and probably most importantly, that "social being determines social consciousness." In dialectical materialism, "material" means "having to do with matter," that is, material particles and other material entities. As a result, "materialism" in this realm refers to the view that human consciousness/ideas/mind

are products of the human brain, as well as the claim that consciousness and ideas are ultimately caused by the impact of material particles on the human body through the five senses. These two meanings of the terms "material," "materialist," and "materialism" are never clearly differentiated in Marxist thought; nor are the differing conceptions of the role of the "material" world in determining human consciousness ever integrated. In fact, in neither facet of their theory do Marx or Engels ever try to explain precisely how these two (somewhat distinct) "material" worlds actually determine human consciousness.

Beyond this, Marx and Engels never really argue for their materialist standpoint, in the sense of presenting an elaborated case in favor of their position. They merely assert it and assume it to be true. Insofar as there is an implied argument in their discussions, it is that materialism is the only truly scientific standpoint – that materialism is the actual, proper, and only possible philosophy of science. In other words, Marx and Engels' argument in favor of materialism comes down to the assumption that science is inherently materialistic; as a result, materialism is scientific and hence true, while Idealism is "metaphysics" – religion in disguise, mere speculation – and thus false.

What enables Marx and Engels to get away with this is that, at first glance, science does appear to be materialist. In fact, this view is commonplace in much writing on science, certainly that found in popular science publications. It is also the opinion of many scientists. And a superficial look at specific natural sciences suggests that this is the case: physics, chemistry, biology, geology, and their various subdivisions all seem to be concerned with material entities and seek exclusively natural explanations for the phenomena they study, while rejecting God, disembodied minds/consciousnesses, and spirit as explanatory principles. As a result, it would seem, they should be classified as materialist. But further thought suggests that this seemingly obvious contention might not be true.

The problems with the idea that science is materialist are most clearly seen in physics. This is ironic, since physics, in some sense the foundation of the other sciences, would appear to be the most materialist of them all, dealing as it does with material bodies and processes. In fact, though, materialist descriptions of physical phenomena have become quite problematical ever since the developments that occurred in physics in the early 20th century, particularly the theories of relativity and quantum mechanics. Yet, the problems of the materialist standpoint can be seen even in earlier stages of physics.

Materialism, in one of its classic definitions, insists that the universe is made up of matter in motion. Let us assume, for the moment, that matter is what Marx, Engels, and most materialists throughout the millennia thought it was: little hard particles whirling around in space. But this leaves a crucial question: What makes matter move; what causes the material particles to whirl around? Some materialists, including Engels, insist that motion is intrinsic to matter. But this is merely a tautology that evades the question; it doesn't explain why and how matter moves, it just defines it as moving. A more substantial answer is that matter is moved by energy, a term that came into existence in the 19th century with the development of thermodynamics. This formulation results in another statement of materialism: the universe consists of matter and energy. But what, then, is energy? It is not simply matter; if it were, why don't we say simply that the universe consists of matter? Moreover, to say that energy is something that moves matter does not get us very far, because this still does not tell us what energy is. According to Einstein's theory of relativity, matter and energy are equivalent. One can change or be changed into the other according to the equation E=mc2: energy equals mass times the speed of light squared.

But this does not help us conceptually. It merely tells us that matter can be turned into energy – and vice versa – according to a specific mathematical ratio. Even if we assert, as some scientists do, that "matter is energy and energy is matter," this does not give us a clear conception of what energy is. We have a pretty clear common-sense idea of what matter is, but what, exactly, is energy (aside from the assertion that it is really matter)? A source of this difficulty is the fact that energy is not directly perceived; its existence and quantity are inferred by its effects – by the motion of matter that it causes and that we sense and measure, for example, as heat. In sum, we cannot clearly conceive – and scientific theory does not really tell us – precisely what energy is.

Since we have reached a dead-end here, let's turn to another formulation of materialism. This is that the universe consists of "matter and its laws of motion." But what, exactly, are these "laws of motion"? At the time Marx and Engels wrote, these laws included those discovered by Isaac Newton, including his famous three laws of motion and his law of universal gravitation, the three laws of planetary motion discovered by Johannes Kepler, the laws of thermodynamics, Maxwell's laws (equations) about electro-magnetism, and the various other scientific laws already discovered or in the process of being discovered in other fields of science. These "laws" describe how matter behaves under various circumstances. When they take mathematical form, as they usually do (at least in physics), they are (or are represented by) mathematical equations. When they do not, they represent different kinds of logic, descriptions of the behavior of matter under specific conditions. But once again, we have a problem. These "laws" and logics the mathematical equations and descriptions – are not themselves material; they are not matter. They describe how matter moves or behaves, which is different. We might say that these "laws" are descriptions of fundamental structures of the universe. But the laws themselves do not further describe these structures. Are these structures themselves material? This is questionable: matter is material; the structures are something else, and the laws themselves do not tell us what they are. Meanwhile, all we can really say about these structures is that they are described by laws, which, in turn, are ... mathematical equations and descriptions; in other words, they are ideas.

Physicist Mario Livio, in his book, Is God a Mathematician?, put it this way:

"Once many repeated scientific experiments or observations produce the same functional interrelationships, those may acquire the elevated status of laws of nature – mathematical descriptions of a behavior all natural phenomena are found to obey. (Livio, *Is God a Mathematician?*, Simon and Schuster, New York, London, Toronto, Sydney, 2009, p. 96.)

What I am getting at here is that when we attempt to describe the world scientifically and materialistically, we come up against something that is not material, something that cannot be defined in, or reduced to, strictly materialistic terms. In the case of scientific "laws," they can only be defined, described, and understood as ideas, in other words, as ideal.

We can see this even more clearly when we turn our attention more narrowly to matter itself. As I mentioned, when Marx and Engels were alive, matter was thought of in atomistic terms, that is, as tiny particles moving around in space. Atoms, and this is the meaning of the word, were conceived as the fundamental building blocks of the universe; they could not be broken down any further. This certainly reinforced the notion that materialism was the true philosophy of science.

But today science tells us that atoms are not fundamental, in the sense understood in the 19th century, but themselves consist of component parts – protons, neutrons, electrons, and a myriad other subatomic particles, all of which are made up of still other entities called quarks – along with a vast amount of empty space (in fact, most of matter consists of empty space). Moreover, these particles are held together by three distinct forces: the electro-magnetic force, which holds the electrons in their orbits around the nucleus; the strong or nuclear force, which holds the particles in the nucleus together; and the weak force, which governs radioactive decay, all of which are conveyed through yet other particles. And these forces themselves cannot be fully described materialistically. Like energy, forces are inferred, in other words, recognized by their effects, and they, too, are scientifically described in terms of mathematics, specifically as fields, that is, as sets of numerical values at defined points in various kinds of space.

To make things more complicated, science now tells us that what we usually think of as material particles – electrons, protons, neutrons, and photons (the particles that make up visible light and other forms of electromagnetic radiation) – are not fully particulate. In fact, they have a dual nature: sometimes they act as particles and sometimes they act as waves. Or, to put it differently, they exhibit two types of behavior, one of which can be explained by thinking of them as particles – they have defined positions in space, momenta (the products of their masses times their velocities), and kinetic energy (energy of motion) – while the other can be explained by thinking of them as waves - they have wavelengths and frequencies, refract (change direction) when going from one medium to another, diffract (change direction when passing the edges of solid objects or through small apertures), interfere constructively and destructively with each other, and behave in other wave-like ways. Intriguingly, these entities never exhibit both types of behavior simultaneously: at any given point in time, they act – and can only be understood – as either particles or waves, but not both. Nor have scientists ever been able to reduce these two forms to one underlying, more fundamental entity. According to the standard "Copenhagen" interpretation of quantum mechanics, this dual, but mutually exclusive, characteristic of the nature and behavior of matter is called "complementarity."

Moreover, while the particulate behavior of subatomic particles is at least somewhat consistent with a materialist conception of reality, their wave-like behavior is not. Most waves are not themselves material; they are characteristics - modifications, perturbations, undulations - of the material media in which the waves are propagated, primarily liquids, such as water, and gases, such as air. Given this, for many years, light, whose fundamental behavior was understood in terms of wave mechanics, was assumed to travel through a highly refined medium, called the "aether"; visible light and other forms of electromagnetic radiation were conceived to be periodic, wave-like, undulations of this aether. Eventually, however, it was demonstrated that the aether did not exist (this was one of the events that lead to the development of relativity), and that, in contrast to more common wave phenomena, such as water waves and sound waves, electromagnetic waves are not periodic undulations of a material medium, but something else. But exactly what they are cannot be fully explained in common-sense, materialistic terms. They are scientifically represented and understood in terms of the mathematical equations that describe their behavior, specifically, as intertwined electrical and magnetic fields that generate each other at right angles to each other. As a result, today, electromagnetic radiation (photons) are now understood to be somewhat, but not entirely, discrete "packets" of energy, called "quanta," also with a dual nature, sometimes acting as particles, sometimes acting as waves, but never both at once. So, whereas energy was once conceived to be infinitely divisible – like a liquid – while matter was believed to be entirely particulate, today, both energy and matter are understood to be "quanta," semi-discrete entities that exhibit, at different times, the respective behaviors of particles and waves. Some physicists call them "wavicles."

To make the question even more obscure, photons and other subatomic entities exhibit bizarre types of behavior that are not characteristic of what we think of as matter in our normal, macro world. In the super-atomic realm, at any given time, material entities, such as baseballs and planets, can be precisely located in space, while their physical characteristics, such as their momenta, can also be precisely determined. This is not so in the subatomic realm. There, the more precisely the position of a subatomic particle, say, an electron, is determined, the more indeterminate becomes its momentum, and vice versa; the more precisely its momentum is determined, the less defined is its position. As a result, the behaviors of subatomic entities are not describable in the exact, deterministic manner that we use in the macro world. Instead, they are described in terms of probabilities that represent the chances of finding a given particle in a given place at a given time. And, it turns out, one form of the mathematics that describes these probabilities is the very same as that which represents the wave-like behavior of these particles. Moreover, rather than being describable as they are, in themselves, the characteristics of these subatomic entities are determined, to some degree, by the very act of observation. Thus, when scientists look for (that is, set up an apparatus to measure) the particulate characteristics and behavior of, say, a single electron, its wave-like behavior disappears. Conversely, when they wish to observe the wave-like behavior of electrons, their particulate behavior vanishes.

The weirdness of the nature and behavior of subatomic particles has been neatly summed in a book that attempts to explain the conceptual difficulties of quantum mechanics by resorting to an explicitly Idealistic standpoint.

"Behold the following quantum properties:

- A quantum object (for example, an electron) can be at more than one place at the same time (the wave property).
- A quantum object cannot be said to manifest in ordinary space-time reality until we observe it as a particle (collapse of the wave).
- A quantum object ceases to exist here and simultaneously exists over there; we cannot say it went through the intervening space (the quantum jump).
- A manifestation of one quantum object, caused by our observation, simultaneously influences it correlated twin object — no matter how far apart they are (quantum action-at-a-distance).

(Amit Goswami, Ph.D. with Richard E. Reed and Maggie Goswami, *The Self-Aware Universe*, Jeremy P. Tarcher/Putnam, a member of Penguin/Putnam Inc., New York, 1993.)

(In fact, physicists believe that quantum mechanics does describe the behavior of super-atomic entities, although until recently, it was assumed that in this realm quantum effects were negligible and could, for all practical purposes, be ignored. However, scientists are currently discovering a variety of significant quantum effects that occur on the molecular, that is, super-atomic, level. [See "Living in a Quantum World," by Vlatko Vedral, *Scientific American*, June 2001.])

What this adds up to (among other things) is that the more science has plumbed the depths of the supposedly material world, the less material does it appear to be. This is what led some scientists and philosophers of science, from the beginning of the 20th century on, to abandon, or at least to question, materialist explanations of subatomic phenomena. (One of the more prominent of these figures was the physicist and philosopher, Ernst Mach, who was one of the main targets of Lenin's polemical defense of materialism, Materialism and Empirio-Criticism.) It is also what led other scientists, including Albert Einstein, to challenge the conclusions of quantum mechanics (even though he had been instrumental in its early development): "God does not play dice with the universe," he insisted. And to this day, there is no universally agreedupon philosophical interpretation of quantum mechanics (or of many of the other discoveries of modern physics, for that matter), a fact that has led most scientists to avoid philosophical speculation altogether (at least while they are doing their work) and to accept, and to base their work on, the mathematical apparatuses ("formalisms") that describe that world. Significantly, these mathematical apparatuses, that is, the equations and mathematical procedures that describe the nature and behavior of the subatomic world, work and have been consistently corroborated in the more than eight decades of their existence.

As a result, it can be argued that from a scientific point of view, the fundamental reality of the subatomic world (and, by implication, the entirety of the universe) is not matter at all, but mathematics, that is, ideas. In other words, according to modern science, the ultimate reality of the universe consists not of matter, but of the mathematical equations that describe the behavior of the entities that our "common sense" understanding conceives of as matter.

(We can see the same thing in the macro realm. According to the general theory of relativity, space, which Einstein called "space-time" [to incorporate the notion that, according to his theory, time is not absolute], is curved, the degree of curvature in any given vicinity being dependent upon the amount of matter found there. This curvature is not itself material; it can only be conceptualized and analyzed mathematically, through the geometry of curved surfaces [tensor analysis], in other words, ideationally.)

And what is true of physics is true of the other sciences. More fundamental than the material entities with which they deal are the descriptions, the structures or patterns, of the processes through which these entities move and interact. These, too, are conceptual, ideational, that is, ideas.

If we accept this, we have to accept the counter-intuitive conclusion that science is not really materialist at all, but a special form of Idealism: for it, the fundamental reality of the universe consists not of matter, but of ideas. True, these ideas (the mathematical equations, categories, rules of procedure, descriptions, and theories of science) are not the mind, spirit or consciousness of traditional Idealism. They are, in contrast to the latter, pure abstractions from which the personal characteristics of thought have been eliminated. But they are ideas, nonetheless.

That science is, at least in some sense, Idealist is not really as surprising as it might seem at first. After all, human beings conceive of the world in terms of our ideas – our concepts, our categories, our rules of logic (including mathematics), and our theories – and insofar as we think about it, or about anything in it, we do not, and cannot, get beyond them. Our thinking is, in a sense, trapped within the realm of our ideas. And this is true both of our thinking about the natural world and of our thinking about our thinking, that is, about philosophy. This leads to an ironic conclusion that was most concisely raised by Hegel. He said that all philosophies, including materialism, are really forms of Idealism. What differentiates materialism from other types of Idealism is that

its fundamental category is matter, which is, as Hegel saw it, a dull (uninteresting) and dead (undialectical) one. Yet, it is still a category, an idea.

If this conclusion is correct, then Marxist "dialectical materialism" is also a type of Idealism. Intriguingly, Engels seems to sense the problematic nature of matter. In his *Dialectics of Nature*, he writes:

"Matter as such is a pure creation of thought and an abstraction. [My emphasis – RT] We leave out of account the qualitative difference of things in comprehending them as corporally existing things under the concept matter. Hence matter as such, as distinct from definite existing pieces of matter, is not anything sensuously existing." (*Dialectics of Nature*, op. cit., pp. 322–323.)

He goes on to try to rescue himself from this (not entirely welcome) conclusion by drawing a distinction between the concept of matter itself and specific material entities.

"If natural science directs its efforts to seeking out uniform matter as such, to reducing qualitative differences to merely quantitative differences in combining identical smallest particles, it would be doing the same thing as demanding to see fruit instead of cherries, pears, apples, or the mammal as such instead of cats, dogs, sheep, etc., gas as such, metal, stone, chemical compound as such, motion as such." (*Dialectics of Nature*, pp. 322–323.)

But this is precisely what science does do; that is, it reduces qualitative differences to more abstract quantitative ones (hence the mathematical treatment, the scientific "laws," the equations), leaving aside the fact that categories such as "cherries, pears, apples," and "cats, dogs, sheep, etc.," are just as much abstractions (ideas, categories, products of human thought) as are "fruit" and "mammals"; they are just somewhat narrower.

If, then, underneath the appearances, science is Idealist, what distinguishes science from philosophy? As I see it, science is distinguishable from philosophy by three things: (1) The categories, equations, and "laws" of science are totally depersonalized, that is, they are mindless, spiritless; they are not, and do not represent, the minds, consciousness or spirits (God or the Ego) of the explicit forms of Idealism; (2) As depersonalized thought, the categories, equations, and "laws" do not embody or represent any sense of meaning or purpose, any teleology. In other words, the universe has no underlying purpose; it is not evolving toward some humanly meaningful historical or ethical goal; (3) The conclusions of science – the concepts, hypotheses, theories, and equations - are subjected to precise testing and hence to corroboration or falsification (loosely, proof or disproof), while those of philosophy are not. This insistence on testing is what lies behind the fact that different realms of science and different scientific theories often represent different and even contradictory philosophical principles. In physics, for example, the macro world as described by the theory of relativity is fully determined and, at least in principle, predictable, while the micro world of quantum mechanics is non-deterministic and probabilistic. Thus, most scientists (and hence, one might say, science itself) assume that there is a realm "out there" that is (more or less) independent of our theorizing that science is attempting to explain.

(The precise nature and meaning of the process of corroboration and/or falsification of scientific hypotheses and theories, and of the very nature and meaning of the hypotheses and theories themselves, have long been subjects of intense discussion and debate among scientists and philosophers of science. Beyond the general notion that scientific hypotheses and theories are, through some type of [often messy] intellectual, cultural, social, and historical process, corroborated or refuted, there is no general agreement on what this precisely means. In light of this, one might add a fourth distinction between science and philosophy. This is that science, unlike philosophy, is not reflexive; it does not generally subject itself to analysis and takes it own methods and procedures for granted. When scientists do attempt to analyze science, they enter the realm of philosophy.)

Where, then, does this leave us? It leaves us, I think, with several conclusions: (1) Science is not, in fact, materialist, despite its appearance of being so. (2) What distinguishes science from philosophy is not science's supposedly materialistic nature but the extremely abstract and depersonalized nature of its categories and concepts, its denial that natural phenomena embody purposes or goals, and the fact that it subjects its conclusions to systematic testing (along with the implication of this – that it is attempting to explain a reality that is independent of it); (3) Materialism, in the sense of a class of philosophy counterposed to Idealism, is an illusion; it, like the rest of philosophy, is a form (a subset) of Idealism. Materialism is a form of Idealism that denies that it is Idealistic. (4) Marxism's claim to be materialist, to be based on a materialist philosophy, is false; moreover, as per (1), such a claim, by itself, does not make it scientific.

DIALECTICS

With this said, let's turn to the question of dialectics.

To Marx and Engels, "dialectics," in the most basic sense of the term, refers to the fact that, in their view (and, they believed, in the view of modern science), all natural and historical/social reality is and can only be understood as a process, or more precisely, as a complex of processes.

"[T]he world is not to be comprehended as a complex of ready-made things, but as a complex of processes..." (Engels, *Ludwig Feuerbach and the Outcome of Classical German Philosophy*, op. cit., p. 44.)

In this conception, everything in the world is in motion, and everything reacts and interacts in an extremely complex way that cannot be fully grasped by static, mechanical modes of thoughts. For Engels and Marx, dialectics is a way to more effectively conceptualize and understand the process-like nature of reality.

Dialectics (or better said, dialectical ideas and methods) has a long history in Western philosophy, especially in Idealism. (It also appears very early in Asian philosophy, most notably, in the interpenetrating, mutually generating relations of "yin" and "yang." But since Marx and Engels describe their own philosophical development exclusively in terms of Western philosophy, I will limit my discussion to that tradition.)

Although Engels, in *Anti-Dühring*, cites some of the Greek pre-Socratic materialist philosophers, particularly Heraclitus, as early sources of dialectics, to get a deeper understanding of what dialectics is one must look to the Idealists, first off to Plato. As those who have read some philosophy know, Plato elaborated his outlook in the form of dialogues, specifically, dialogues involving his mentor, Socrates. Socrates, an eccentric citizen of ancient (5th century B.C.) Athens, went around the agora (the market place/public square) of the city questioning those men who claimed to be philosophers and to know something about the world. In contrast to these individuals, Socrates insisted that he himself knew nothing. But through a series of probing questions, he would get those he interrogated to contradict themselves, thus demonstrating that, despite their claims to be knowledgeable, they, too, did not know anything. (At least Socrates knew that he knew nothing.) All Socrates claimed to know (but to know not quite in the same sense as those he questioned claimed to know) was what his "daemon" – a little voice in his head – told him, particularly, by raising doubts about specific ideas. (Today, we would recognize this voice as Socrates' conscience.) Because of his annoying habits, and even more, because he set his individual conscience above the ancient, venerated laws and customs of Athens, Socrates was tried (essentially, for treason), convicted, and sentenced to death, which sentence he willingly, even cheerfully, carried out by drinking the poisonous hemlock.

Although Socrates insisted that he knew (almost) nothing, and as a result, never articulated a fully developed, logically coherent philosophy, Plato used the "Socratic dialogues" to do just that. Ironically, then, Plato utilized the modest, skeptical figure of Socrates to elaborate a philosophy of absolute knowledge, a metaphysical point of view that asserted not only that absolute knowledge was possible but also that his (Plato's) philosophy represented just that knowledge.

In a nutshell, Plato argued that the world consists of two distinct but interconnected realms. One is the world of everyday objects, events, processes, and ideas that we feel/perceive through our five bodily senses and think about with our untrained minds. The other, behind and beyond this world, is a realm of Ideal forms that are the basis for and determine the everyday world, not only the physical things - inanimate objects, plants, animals, human beings - but also the values Athenians held to, such as beauty, honor, virtue, valor, filial piety, patriotism, and truth. Although most people only recognize the sensible, physically perceivable world and the world of common-sense ideas, the realm of the Ideal forms was, in Plato's view, the more fundamental, the more real, one, and it is only a very few individuals (true philosophers, such as himself) who have the ability - indeed, the privilege - to recognize and understand it, which they do through philosophical contemplation. It was because of this that Plato believed that the only people capable of governing society in a truly rational manner are those very philosophers, and he elaborated a vision of an ideal society, governed by "philosopher-kings" (who would be reared and educated via Plato's curriculum and methods), in what is perhaps his most famous dialogue, The Republic. He actually tried to set up such a society in a couple of places, becoming an adviser to what were then known as "tyrants" (essentially, political strongmen) to do so. Fortunately, these efforts to establish what were, in effect, totalitarian states were not successful.

Although Plato does not use the term, we might say that for him, "dialectics" is a logical process involving a confrontation of ideas. Impelled by this conflict or dialogue, this process moves toward, and eventually arrives at, the Truth, which, for Plato, meant absolutely certain knowledge.

This conception of dialectics was summed up by a later Greek, Diogenes Laertius, in his book on the Greek philosophers:

"The dialectic is the art of discourse by which we either refute or establish some proposition by means of question and answer on the part of interlocutors." (Cited in Matteo Motterlini, editor's introduction, *For and Against Method*, by Imre Lakatos and Paul Feyerabend, The University of Chicago Press, Chicago and London, 1999, p. 1.)

Aside from dialectics and the notion of absolute truth, there can also be seen in Plato's thought a division of the cosmos into two distinct realms. One is that of appearances, the world of everyday and natural objects, events, and processes, of phenomena. The other, behind and/or beyond the world of phenomena, is the more fundamental realm of the noumena, or essences. To Plato and to most philosophers after him, it was the ultimate purpose of philosophy to penetrate behind the phenomena in order to discern the nature, structure, and dynamics of the noumena, which is where the truth lies.

A much later version of dialectical thinking can be seen in the philosophy of the 18th century German, Immanuel Kant, as put forward in his masterpiece, *The Critique of Pure Reason*. Kant saw the reasoning faculty of the human mind as compartmentalized into distinct spheres; one of these he termed the "understanding;" another, "pure reason." The understanding is that part of the mind that perceives and analyzes the world of phenomena, which, for Kant, includes both the world of everyday people, places, and things, and the world of science. Built into the understanding are certain fundamental "laws" and structures, such as the notion of cause and effect and the three-dimensional (Euclidean) nature of space. To Kant, these laws and structures are not characteristics of physical reality itself but serve to shape what we ultimately cognize with our minds, specifically, by our understanding. One way to understand this is to see these structures as constituting a kind of framework, or filter, through which we sense, but do not fully and precisely perceive, the ultimate reality. This ultimate reality is the world of the noumena, the world of essences, or what Kant called the "thing-in-itself." This latter realm can be conceived only through pure reason, by which he meant philosophic contemplation or speculation.

Although in this sense Kant was in agreement with Plato, in contrast to Plato, Kant felt that pure reason was not capable of arriving at philosophic (as opposed to scientific) truth. On all the great metaphysical questions of his day, in fact, of the entire history of philosophy – such as, Does God exist?, Is the universe finite or infinite?, Did the universe have a beginning in time or has it existed forever?, Are human actions determined or is there free will? – Kant felt that pure reason was capable of arguing both sides (pro and con) equally well. One result of this is an endless dialogue – idea contending with idea, philosopher arguing with philosopher, each philosopher debating with himself, in effect, reason arguing with itself – that never actually arrives at the truth. Kant's dialectic is thus infinite and eternal. For Kant, certainty and true (scientific) knowledge were possible only in the realm of phenomena, not in the realm of the noumena, which was the more fundamental reality. Here, then, we have a form of the dialectic that, unlike Plato's, goes on forever and never arrives at a conclusion, a synthesis, or (philosophical or metaphysical) truth.

Understandably, many philosophers after Kant were dissatisfied with this conclusion. Among these was Hegel. In many respects, Hegel's philosophy, and particularly his conception of the dialectic, can best be seen as a reply to Kant's. Where Kant left the dialectic inconclusive, forever debating with itself but never reaching the truth, Hegel tried to demonstrate that if left to itself, the dialectic, the dialogue of consciousness or mind with itself, does in fact lead to philosophic/metaphysical truth. In his *Phenomenology of Mind*, Hegel starts with what is apparently the most certain type of knowledge, what he called "sense certainty" (the seeming assurance that when one touches something, one knows that it is there), and shows how, at each level of thinking, one thought generates its opposite, and how the conflict between these two ideas leads to the recognition that each thought is both true and false, that each thought contains some truth but is also limited and one-sided. The result of this conflict/dialogue is a kind of synthesis of both

ideas, a new idea that preserves what is true in each thought, discards what is false, and ultimately transcends the debate between them. This synthesis – this new idea, which represents a new and higher level of thinking – then splits in two and undergoes the same dialogical process, but at a still higher level. This process is repeated at ever higher, broader, and more sophisticated planes of thought, until consciousness eventually arrives at the absolute truth.

As we have seen, for Hegel, this truth is that God does exist, that God is ultimately mind, consciousness, or spirit, and that our minds/consciousnesses/spirits partake of and are the embodiments of the cosmic mind/consciousness/spirit that is God. In this dialectical process, we start out with perceptions of phenomena but wind up with knowledge of the noumena, what Kant had called the "thing-in-itself," thus, breaking down the barrier Kant and other philosophers had erected between these two realms and between the "understanding" and "pure reason." For Hegel, this process is simultaneously the journey of the thought of each philosophical inquirer, of the consciousness (and hence, for Hegel, the philosophy and history) of all humanity, and of the spirit of God. While for us humans, as individuals and as a collective entity, this journey takes place in time, for God (as Hegel explains in the semi-mystical final section of the *Phenomenology* that has baffled some readers [see Merold Westphal, History and Truth in Hegel's Phenomenology, Humanities Press, New Jersey, 1982.]), this process occurs repeatedly and continually, in a truly dialectical fashion, in a realm beyond time.

In contrast to Kant's conception, in Hegel's view there is no unsolvable problem of knowledge or truth. Truth – real truth, Absolute Truth – is obtainable through the dialectical process of philosophical thought, what Hegel called speculation. All one has to do is to allow the process to work itself out, to go along with it, so to speak, to follow where it leads. The fundamental reason why, for Hegel, there is no insurmountable problem of knowledge of the noumena is that our minds partake of the same substance – ultimately they are the same substance – as that of the cosmos and of God. As a result, the laws of our thinking, of our consciousness (that is, our logic), are precisely the same as those laws (and the logic) that underlie and determine the evolution of the cosmos, the laws (the logic, the mind or spirit) of God. (This logic is extensively – indeed, exhaustively – laid out in Hegel's most impressive work, The Science of Logic.)

The above examples of the dialectic relate exclusively to the realm of ideas; to the thinkers I've discussed, the dialectic is an ideal process; it characterizes only thought/consciousness and processes based on it. Since the purely natural world does not entail meaning or consciousness, the dialectic, in these versions, does not apply. However, Hegel's philosophy, whose Idealism is not subjective, but objective (he believed the world exists independently of the consciousness of any given individual), provides a transition to a conceivable materialist dialectic. Although Hegel did not consider the natural world to be governed by dialectical processes or logic, he did think, as we have seen, that human history was. Thus, in contrast to Plato and Kant, where the dialectic is a purely subjective process (a dialogue of ideas in minds or consciousness), for Hegel, the dialectic has an objective reality; it exists "out there"; it actually exists in, underlies and impels, the objective reality of history. Basing oneself on this, it is possible to assert the existence of an objective dialectic in the material universe. This, in essence, is what Marx and Engels do.

MARXIAN DIALECTICS

The dialectic of Marx and Engels, as they admit, takes its point of departure from Hegel's but claims to be different, and this in three ways. First, Marx and Engels insist that their dialectic is materialistic: in contrast to Hegel, they believe material reality, including natural processes and nature itself, is dialectical; this includes the notion that the material universe has a history, that it evolves. Second, they contend that their dialectic is a "method" and not, as it is in Hegelian philosophy, a "system." Third, Marx and Engels believe (although they never say this explicitly) that their conception of the dialectic has predictive value, that is, it allows its practitioners to project past trends into the future. This, too, is in contrast to Hegel, who felt that the dialectic is ex post facto: it only enables one to understand/explain/interpret events after they have occurred. As he put it, "The owl of Minerva (the Roman goddess of wisdom – RT) only flies at night." In short, as Marx and Engels see it, their dialectic is not an Idealist construct but a scientific method of analyzing material reality that enables one to make accurate predictions about the future.

Here is Engels' explication:

"It is, therefore, from the history of nature and human society that the laws of dialectics are abstracted. For they are nothing but the most general laws of these two aspects of historical development, as well as of thought itself."

"And indeed they can be reduced in the main to three:

- The law of the transformation of quantity into quality and vice versa;
- The law of the interpenetration of opposites;
- The law of the negation of the negation.

"All three are developed by Hegel in his idealist fashion as mere laws of thought: the first, in the first part of his Logic, in the Doctrine of Being; the second fills the whole of the second and by far the most important part of his Logic, the Doctrine of Essence; finally the third figures as the fundamental law for the construction of the whole system."

Engels then describes what he sees as Hegel's fundamental error:

"The mistake lies in the fact that these laws are foisted on nature and history as laws of thought, and not deduced from them. This is the source of the whole forced and often outrageous treatment; the universe, willy-nilly, is made out to be arranged in accordance with a system of thought which itself is only the product of a definite stage of evolution of human thought. If we turn the thing around, then everything becomes simple, and the dialectical laws that look so mysterious in idealist philosophy at once become simple and clear as noonday...

"We are not concerned here with writing a handbook of dialectics, but only with showing that the dialectical laws are really laws of development of nature, and therefore are valid also for theoretical natural science." (All of these citations are from Engels, *Dialectics of Nature*, International Publishers, op. cit., pp. 26–27.)

(The rest of *Dialectics of Nature* consists of Engels' attempts to demonstrate the dialectical nature of material reality as it is revealed in the discoveries of the science of his and Marx's day.)

Despite Engels' insistence that his and Marx's notion of dialectics is materialist, their conception is just as much of an Idealist construct as is Hegel's. This is because:

(1) The "laws" of dialectics that Engels claims have been abstracted from nature and history have never been corroborated and accepted by the scientific community. Specifically, they have not been established as scientific laws in the same sense as have, say, the laws of modern physics or the Darwinian theory of evolution through natural selection. At the time Marx and Engels were writing, it might have appeared reasonable to believe that these laws would eventually be accepted as scientific by the community of scientists, and Marx and Engels seemed to have shared this idea. As Engels put it,

"For the revolution which is being forced on theoretical natural science by the mere need to set in order the purely empirical discoveries, great masses of which are now being piled up, is of such a kind that it must bring the dialectical character of natural events more and more to the consciousness even of those empiricists who are most opposed to it. (Engels, *Anti-Dühring*, op. cit., p. 17.)

But despite their beliefs (and hopes), the laws of dialectics have not been accepted by the scientific community and are not likely ever to be so accepted. This is because they are too broad, too vague, and too general to be systematically tested in a scientific fashion: they can be subjected to many different interpretations; they apply to some phenomena but not to others; they apply to some phenomena some of the time but not all the time, etc. Above all, Marx and Engels' laws do not make predictions specific enough so they can be held to account; as a result, there is no way they can be judged as true or false (corroborated or falsified) in the scientifically-accepted meaning of these terms. In the absence of such corroboration, the Marxian "laws of dialectics" remain logical constructs, not scientific truths. (For whatever it's worth, if the theories of relativity and of quantum mechanics had not been empirically corroborated, they, too, would be nothing but logical – in this case, mathematical – constructs.)

(2) Although Engels contends that the laws of dialectics were abstracted from the history of nature and human society, this is not so. Where? When? How? By whom? Certainly not by any significant number of scientists. As I've said, these laws have never been accepted by mainstream science. Moreover, they were not even abstracted from the history of nature and society by Marx and Engels. Marx and Engels were introduced to dialectics through their academic backgrounds in philosophy, specifically, through their study of Hegel and Hegel's disciples, and through their involvement in the postHegelian philosophical milieu of their youth. It was this study and debate, along with their participation in radical politics in the early and mid-1840s, that led them to their mature political outlook, which was most succinctly articulated in the Communist Manifesto. And it was only after they had formulated this outlook that they began the systematic study of capitalism (as Marx himself admits), and much later, of natural phenomena. In other words, rather than abstracting the laws of dialectics from the history of nature and human society, as Engels insists, Marx and Engels, under the influence of the materialism of Ludwig Feuerbach, first recast the Hegelian schema in materialist terms (in effect, synthesizing the Hegelian and Feuerbachian philosophies), and then looked to human society/history and nature to confirm the validity of the construct. Dialectics of Nature was part of this program. It was an attempt to prove the validity of the dialectical schema by demonstrating that it manifests itself in natural, material reality.

(Insofar as anybody can be said to have "abstracted" dialectics [although not from nature but from the history of ideas], it was the Idealist philosophers who did so, particularly Hegel and his once-friend and later rival, F.W.J. Schelling, who actually claimed priority in the development of the concept.)

(3) Despite Engels' contention that his (and Marx's) dialectics constitutes a method, he does not really use it that way. To be utilized as a method, the dialectical "laws" would have to be understood as, at best, rules of thumb, general notions to be kept in mind as one investigates natural and social phenomena. I think it is true, as Engels says, that natural and human reality are best understood as a complex of processes that cannot be fully understood by our usual habits of thought. This is because our normal ideas – our concepts, categories, and rules of logic – are abstract, and as a result, simplify and hence distort reality. Specifically, they isolate phenomena from each other in space, looking at each one, or at most a few, as distinct entities abstracted from the rest of reality. They also stop time, viewing entities as static, inert, and as non-evolving. But if all of reality (including things that appear to be solid, permanent objects) is in fact a process, if everything is in motion, then these traditional modes of thought distort our understanding of that reality. From this standpoint, the purpose of dialectics would be to remind us that reality does consist of a complex of processes, that things that appear to be unitary and stable may, in fact, be constituted by antagonistic forces, and that they may be evolving into something else. If understood in this sense, dialectics would serve to remind us to look at natural and economic, social, and historical events in ever broader contexts of space and time.

But this is not how Engels presents and utilizes these laws. He does not use them as part of a general mode of procedure that serves to remind us that nature is, as he puts it, a complex of processes. Instead, when he looks at natural phenomena, he analyzes them with the intent of finding the specific "laws of dialectics" in them, in other words, with the purpose of proving the validity of the dialectical laws, that is, proving that the "laws of dialectics" determine the development of natural reality. But all he does, in fact, is to find what he is looking for: certain phenomena at certain times do exhibit behavior that is consistent with those "laws." Rather than serving as a method, Engels' laws of dialectics function in much the same way as they do in Hegel's system: they describe a structure or logic which is assumed (but never proven) to underlie, form the basis of, and determine the evolution of all natural and social reality. All that is different is how the two dialectical schemas are conceived and presented. Hegel describes his dialectical method and system explicitly as Idealistic, as laws of thought/consciousness. In contrast, Engels presents his dialectics as materialistic, specifically, as determining the development of material reality (natural and historical) and its reflection in the human mind as thought. But Marxian dialectics remains just as much of an abstract logical schema, just as much of an Idealist construct, as does the Hegelian. What Engels has in fact done is to take a very specific notion of dialectics – one borrowed directly from the Idealists, particularly, Hegel - and to surreptitiously amalgamate it with a much more general (and generally acceptable) conception, and to put these forward as if they were one and the same. But this is not the case. One can readily agree that nature (and human society) is best understood and analyzed as a "complex of processes" without accepting any of the dialectical "laws" that Engels describes.

Engels' ultimate motive behind this maneuver, and behind his elaboration of "dialectical materialism" as a whole, is to establish the ontological basis, and thus the validity, of the Marxian conception of history, and through this, to substantiate the claim that the Marxian program is scientific, specifically, that socialism, to be achieved through the dictatorship of the proletariat, is inevitable. If material reality, the world of matter of the natural sciences, is dialectical, that is, conforming to and obeying a dialectical structure, then so, too, must be the material reality of human history, the world of the forces and relations of production, which is ontologically based on the material world of nature and, at least in the view of Marx and Engels, follows the same laws; in other words, human history must also conform to and obey a dialectical structure. And, if we recognize that, for Marx and Engels, an essential aspect of this dialecticality is that the future is predictable (as the outcome of the "laws" of dialectics, particularly, the "law" of the negation of the negation), the supposed dialectical structure of history seems to prove that the laws of motion of capitalism and all prior history inevitably lead to the proletarian revolution, the establishment of the dictatorship of the proletariat, and the creation of a socialist/communist society through that institution. That this is Engels' purpose can be seen more clearly if we look at the three "laws" of dialectics that he discusses. Not surprisingly, each one serves to justify one of the key precepts of Marxism.

The first law, the "transformation of quantity into quality," is essential to the Marxian claim that social development occurs through periodic revolutions. As we saw in the discussion of historical materialism, for Marxism, the (quantitative) growth in the forces of production within specific socio-economic formations leads to periodic social revolutions (qualitative changes) that lead to new forms of economic production, specifically, when the forces of production come into conflict with the relations of production. As a result, capitalism, which develops the forces of production at a far more rapid rate than previous economic formations, is destined to bring about a (working class) revolution.

The second law, the "interpenetration of opposites," substantiates the Marxian contention that each mode of production, each form of society, must be understood as a dynamic unity of contradictory forces, first and foremost, social classes, and that, as a result, all history is the history of class struggles.

The third law, the "negation of the negation," justifies the Marxian insistence that the inevitable outcome of human history will be the establishment of a collectivist, egalitarian society, a return to the principles of primitive communism but on the far more technologically advanced basis bequeathed by history, particularly by capitalism. According to the dialectical schema, primitive communism is the starting point, the first positive standpoint. This type of society is "negated" by the establishment of class society, which is thus the first negation. At the end of history, this first negation is negated by the proletarian revolution, which eventually leads to the establishment of (classless) communism, the negation of class society, the negation of the negation.

That this is the case can be seen in Engels' own presentation. In discussing his and Marx's "rescue" of the Hegelian dialectic, he writes:

"We comprehended the concepts in our heads once more materialistically – as images of real things instead of regarding the real things as images of this or that stage of development of the absolute concept. Thus dialectics reduced itself to the science of the general laws of motion – both of the external world and of human thought – two sets of laws which are identical in substance, but differ in their expression in so far as the human mind can apply them consciously, while in nature and also up to now for the most part in human history, these laws assert themselves unconsciously in the form of external necessity in the midst of an endless series of seeming accidents. Thereby the dialectic of the concept itself became merely the conscious reflex of the dialectical motion of the real world and the dialectic of Hegel was placed on its head; or rather, turned off its head, on which it was standing before, and placed upon its feet."

"...the world is not to be comprehended as a complex of ready-made things, but as a complex of processes, in which the things apparently stable no less than their mind-images in our heads, the concepts, go through an uninterrupted change of coming into being and passing away, in which, in spite of all seeming accidents and of all temporary retrogression, a progressive development asserts itself in the end [my emphasis – RT]..." (*Ludwig Feuerbach and the Outcome of Classical German Philosophy*, op. cit., p. 44.)

In other words, according to Engels, the dialectic underlies and drives the evolution of external reality (both natural and historical). In so doing, it ensures, despite all apparent accidents and reverses, that this evolution will be progressive. But this is nothing but the Hegelian schema dressed up in materialist garb! Despite his claim, for Engels (and, I believe, for Marx), the dialectic is a logical structure that is immanent in material reality, both natural and historical, and propels the evolution of that reality toward an inevitable, progressive conclusion. This is philosophy (and Hegelian philosophy, at that), not science, because, as I've stressed, there is no scientific proof that the dialectic, in the sense of the dialectical "laws," inheres in material (or, for that matter, in social) reality.

Beyond his questionable procedure, Engels' position reveals (at least) three fundamental misconceptions. One is the belief that nature evinces a progressive development. This is a profound misinterpretation of science, in general, and of the Darwinian theory of evolution, in particular. Modern science does recognize evolution in the cosmos. In contrast to Hegel and the French materialists of the 18th century, modern cosmology believes that the universe evolves, that it has a history, that it does not merely evince a purely mechanical repetition, forever returning to the same state. But modern cosmology does not see this as in any sense "progressive"; it does not assert that nature is evolving toward a pre-existing end or goal; it is not teleological. Similarly with the Darwinian understanding of evolution in the plant and animal worlds. While Darwin and modern evolutionary biologists recognize that the organic world has undergone an evolution from very simple life-forms to more complex ones, this is not understood to be "progressive." For the contemporary neoDarwinian synthesis, currently-existing species all reveal equally successful adaptations to their environments. There are no "higher" or "lower" species - viruses, bacteria, singlecell parasites, molds, fungi, worms, and insects are just as successful as human beings (arguably more so) - and, consequently, there is no "progress" in evolution, no immanent, let alone "progressive," goal.

Engels' position rests on yet another misunderstanding. This is the belief that laws that are found to apply/operate in the realm of nature also apply/operate, and in the same manner, in the world of human social life, specifically, as Engels says, that the laws of dialectics are laws of nature and of history (and human thought). But this is not necessarily so. Each realm of existence, the inorganic, the organic, and the human/social, expresses different dynamics and is described by different "laws"; each realm has its own, unique ("emergent") characteristics which cannot mechanically be reduced to, or deduced from, the laws of the other levels. Thus, even if the Marxian "laws of dialectics" were to be corroborated as being valid (and operating) in the natural world, this, by itself, would not mean that they necessarily apply to, or operate in, human society. This would have to be independently demonstrated, which has never been done. Although Marx and Engels claim to have demonstrated it, they only appear to do so by assuming it from the outset.

Lastly, Engels seems to believe that evolutionary theory enables one to predict the future, to be able to determine at least the broad outlines of future developments. But this, too, is not true. Neither Darwin nor modern evolutionary biologists have ever contended that the theory of natural selection enables one to predict future forms of plant and animal life, beyond the general claim that they will be more or less adapted to their environments. Yet, the belief in the predictability of the future is central to Engels' (and, I believe, Marx's) project.

Although Engels insists, in Anti-Dühring, that dialectics cannot be used to prove anything, this is what he is in fact trying to do. Why else spend so much time and effort (in Dialectics of Nature, Anti-Dühring, and elsewhere) attempting to demonstrate that nature is dialectical, that the "laws" of dialectics inhere in nature? The whole point of Engels' procedure is to establish these laws as universal laws of nature and, hence, of all reality, not only natural, but economic, social, and political, as well. And if, as Engels believes, they are the laws of development of all reality, they can be used to prove something, specifically, that, as he puts it, "in spite of all temporary retrogression, a progressive development asserts itself in the end." But, given the lack of scientific demonstration of the dialectical laws, they cannot, scientifically, be used to prove anything at all. And they certainly cannot be used to predict the future of human society, which is what Marx and Engels claim to be able to do. Yet, without that ability - without the prediction that the (dialectical) logic of nature and history necessarily results in socialism through the establishment of the dictatorship of the proletariat - the Marxian claim to have established the scientific basis of socialism collapses. And with that, it is revealed that Marxian "scientific socialism" is a fraud. Like all other forms of utopian ideology, the Marxian program rests on a moral or ethical claim, not a scientific one.

In light of this, we can now see that the Marxist conception of dialectics encompasses several versions that are, in fact, qualitatively distinct but not clearly differentiated from each other. One is the broad insistence that the world is to be comprehended as a "complex of processes." This is something that can be accepted by every scientist (and in fact by every intelligent observer) and is thoroughly compatible with a scientific outlook. If this is what dialectics consists of, then dialectics is (almost obviously) true. An additional, but closely related, meaning of dialectics is the traditional philosophical/Idealist one; that is, it describes processes that are best understood as involving opposing forces or ideas that mutually influence and generate each other. Under this variant we can include the Marxist conception of historical praxis, as well as the notion that philosophical ideas and scientific theories often develop via an ongoing discussion or debate between opposing viewpoints, without this implying that the outcome is progressive, predictable or ordained. This conception of dialectics I also believe is relatively unobjectionable.

But, in addition to these unexceptionable notions of dialectics, Engels puts forward an additional one. This is the dialectics of the three "laws" – the unity of opposites, the transformation of quantity into quality, and the negation of the negation. These laws, which, as I've stressed, have not been established as scientific, in fact represent a philosophic construct, specifically, an Idealist system of logic borrowed from Hegel and presented as materialistic. This construct is then utilized to justify a particular ideological claim, specifically, that human history entails a progressive development whose inevitable outcome is communism, or, to put it in philosophic terms, that history is the phenomenological expression of a noumenological telos whose goal is human freedom, as Marx and Engels conceive it. In Marxist literature, including and in particular the writings of Engels, this last, philosophic, version of dialectics has not been delineated from the others. As a result, the unobjectionable variants serve to justify, and to legitimate, the philosophical construct and so to enable Marxists to present it as scientific.

MARXISM AND SCIENCE

Given all this, it should not be surprising that Marxism has had an ambiguous relationship with, and an ambivalent attitude toward, science. On the surface, of course, Marxism admits of no such ambiguity or ambivalence. It touts science as among the highest achievements of humanity and strongly insists on its own scientific character. Thus, in his oration at Marx's funeral, Engels contended that Marx had done for human history what Darwin had done for natural history. In addition, Marxism claims that the discoveries of modern science confirm both the details of its outlook and the truth of its philosophical standpoint, dialectical materialism. Yet, as I've said, science does not have or embody a specific, unified philosophy, aside from some very general axioms, such as that the phenomena of nature reveal regular patterns, that these can be discovered and expressed as "natural laws," that consistent empirical corroboration (or lack of falsification) of these laws suggests that these laws are "true" (whatever that precisely means), and that such laws apply, or can be said to be valid, throughout the extent of space and time. Beyond this, a variety of philosophic standpoints are consistent with science, and over the centuries, individual scientists have held to a broad range of philosophical outlooks - materialist and Idealist, rationalist and empiricist, realist and instrumentalist, atheist and religious, logical and even mystical. Within the accepted realms of science, scientists accept the basic axioms of science, including the (very broadly defined) scientific method, but beyond that, and in interpreting the methods and conclusions of science, they embrace a variety philosophic positions.

As a result of this, despite its claims to be scientific (even to be science itself), Marxism is in at least potential conflict with science insofar as it insists that its philosophic standpoint, dialectical materialism, is the true and only proper philosophy of science. As it sees it, science is inherently dialectical and materialist, whatever individual scientists may think, and only those scientists who hold to dialectical materialism are truly and consistently scientific. Conversely, it insists that those scientists who do not accept dialectical materialism are inconsistent; their outlooks are in conflict with the true philosophy and methods of science. In addition, Marxism, by insisting that dialectical materialism is the proper philosophy of science, implicitly claims the right to judge the discoveries, hypotheses, and theories of science, a priori, on philosophical grounds. That is, it claims the right to judge whether a given scientific explanation or theory is right or wrong, correct or incorrect, true or false, based on the theory's supposed agreement or disagreement with the tenets of dialectical materialism, regardless of the actual scientific status of that theory, regardless, in other words, of whether or not the theory has been empirically corroborated. Thus, even if, according to the consensus of scientists working in a given field, a scientific theory has been consistently corroborated, it may still be deemed "incorrect" and "false" by Marxists if it is seen to violate the tenets of dialectical materialism.

While Marx and Engels were alive, the conflict between Marxism and science was largely dormant. But with the developments in physics in the early years of the 20th century, particularly the theories of relativity and of quantum mechanics, it burst into the open. Although the theory

of relativity, by establishing the variability of time, led to physical descriptions of the universe based on four dimensions (mathematical representations of space-time involving four variables, three for space, one for time), while modern cosmological theories, such as string theory, entail ten or more, Lenin, in his Materialism and Empirio-Criticism, mocked as absurd the idea that reality could have more than three dimensions. Somewhat later, quantum mechanics came under attack by Marxists as anti-materialist, because the standard, Copenhagen, interpretation of the theory posits the inseparability of observer and observed in the subatomic realm, and thus denies the existence of a reality independent of observation. (See *The Crisis in Physics*, by the British Marxist, Christopher Caudwell [pen name of Christopher St. John Sprigg].) Still later, the science of genetics was denounced by the Stalin-backed agronomist, Trofim D. Lysenko, in the Soviet Union, because it emphasized the inherited nature of biological traits rather than stressing the paramount role of the environment, which Lysenko deemed the truly Marxist standpoint. Under Stalin's protection, Lysenko drove hundreds of scientists out of their jobs (many were jailed and exiled; some died), and helped set back Soviet genetics and agriculture many years. And in the 1970s, the now generally-accepted theories of ethno-biologist Edward O. Wilson and others, who argued that much of animal (and human) behavior is innate and genetically determined, came under attack by Marxists and other leftists, including Stephen Jay Gould (who would later criticize his role in this), for pretty much the same reason.

Thus, despite its claims to be scientific and to stand on a scientific ontology, Marxism has shown that it is often in conflict with science and, in fact, quite hostile to it. Some Marxists try to explain this away by criticizing modern science as "bourgeois." After all, since, according to Marxism, social being determines consciousness, modern science, developing as it has under capitalism and generally serving its interests, must also be bourgeois, a variety of "false consciousness," in fact a form of, or at the very least, influenced by, bourgeois ideology. This implies the future existence of a "proletarian," or "socialist" science radically distinct from its current "bourgeois" form. Although I think it likely that science under a truly liberated – democratic, cooperative, and libertarian – society will differ in many respects from its current incarnation, to posit the future existence of a radically distinct version of science at this point in time and to use this to oppose the discoveries of science is little more than a cover for dismissing current science because some of its conclusions do not conform to one's personal philosophy.

Of course, Marxists have the right to their own opinions. But their attacks on science reveal the purely philosophical nature of "dialectical materialism." Rather than being the only true and proper philosophy of science, as it claims to be, dialectical materialism is a philosophical construct whose scientific pretensions have not been established, but which insists, nonetheless, on its right to judge science on the basis of its own (dialectical materialism's) precepts.

MARXISM AND PHILOSOPHY

In spite of the obviously philosophic nature of dialectical materialism, Engels denies that it is a philosophy in the same sense as other philosophies. Just as Hegel claimed that all past philosophy culminated in his, so Engels insists that all prior philosophy (including Hegel's) culminates in the Marxist standpoint.

He writes (and it is worth quoting the entire passage):

"The realization of the entire incorrectness of previous German idealism led necessarily to materialism, but, it must be noted, not to the simple metaphysical and exclusively mechanical materialism of the eighteenth century. Instead of the simple and naively revolutionary rejection of all previous history, modern materialism sees history as the process of the evolution of humanity, and its own problem as the discovery of laws of motion of this process. The conception was prevalent among the French of the eighteenth century, as well as with Hegel, of Nature as a whole, moving in narrow circles and remaining immutable, with its eternal celestial bodies, as Newton taught, and unalterable species of organic beings, as Linnaeus taught. In opposition to this conception, modern materialism embraces the more recent advances of natural science, according to which Nature also has its history in time, the celestial bodies, like the organic species which under favorable circumstances people them, coming into being and passing away, and the recurrent circles, in so far as they are in any way admissible, assuming infinitely vaster dimensions. In both cases modern materialism is essentially dialectical, and no longer needs any philosophy standing above the other sciences. As soon as each separate science is required to get clarity as to its position in the great totality of things and of our knowledge of things, a special science dealing with this totality is superfluous. What still independently survives of all former philosophy is the science of thought and its laws - formal logic and dialectics. Everything else is merged in the positive science of Nature and history." (Engels, Anti-Dühring, op. cit., p. 31.)

Thus, according to Engels, after the emergence of the Marxist standpoint ("modern materialism"), philosophy (that is, all other philosophies) becomes obsolete. What remains of philosophy is the "science of thought and its laws," that is, formal logic and (the Marxist conception, the three "laws," of) dialectics. In other words, dialectical materialism survives; all other philosophies are superfluous and therefore wrong.

Marxism is not alone in its philosophical arrogance, its insistence that it is right and that all other philosophies are wrong; most other philosophies contend the same. But Marxism differs from these other philosophical standpoints in two crucial ways. First, it denies that its philosophy, dialectical materialism, is philosophy at all; it is, it contends, coterminous with the methods and conclusions of science. Second, consistent with its materialist self-conception, Marxism calls on those who believe in it (that is, its practitioners) to seize political power and establish a dictatorial state as the inevitable outcome of the (dialectical) laws of nature and history. From this vantage point, Marxists are then in a (very material) position from which to establish Marxism's correctness – its truth – in practice, that is, to impose the Marxist standpoint by force, while suppressing all other philosophic outlooks as unscientific, counterrevolutionary, and false. And, in those countries where Marxists have come to power through revolutions or military occupation, this is exactly what they've done.

PART II. MARXISM, KNOWLEDGE, AND TRUTH

Integrally involved with the issues discussed in the last chapter is the question of Marxism's attitude toward the nature of truth and the veracity of human knowledge. What is truth? What is knowledge? How much can we know? Is our knowledge certain or probable, precise or approximate? Does our knowledge give us an accurate picture of reality, does it somehow just enable us to manipulate it, or is it merely an illusion? Is reality independent of all observers or is it connected to the act of observation? Is reality even real? These are some of the questions philosophers, scientists, and other thinkers have asked and debated over the centuries. And the answers they have offered range from the supremely confident (Lenin believed that our knowledge represents an accurate reflection, or copy, of reality) to the extremely skeptical (the ancient Sceptics questioned the validity of all knowledge claims, even their own). Despite this, Marxism, like most other philosophies, insists that it is true, that it knows what the truth is and of what our knowledge consists.

The Marxist position starts with the assertion that knowledge flows out of practice, or praxis. In contrast to some philosophies (such as those of Descartes, Hume, Locke, Kant, and Berkeley) that describe human knowledge in terms of the mind of a single and passive (generic) individual at a given moment of time, Marxism insists that knowledge is social, that it is active, and that it occurs over time. Specifically, Marxism contends that the acquisition of knowledge is part of a process in and through which the human species actively interacts with nature, changing it and itself by means of labor. As human beings engage with and act on nature, this activity generates ideas in our brains about it. The adequacy of these notions is continually tested through our ongoing interaction with an increasingly human-altered natural world. Those ideas that are shown, through practice, to be wrong are discarded or modified, while those that are demonstrated to be valid are adopted. This is a dialectical process involving a complex reflexive relation between humanity and nature, and between theory (our ideas about nature) and practice (our practical engagement with nature), a process Marxists refer to as the "unity of theory and practice." Not only does practice – that is, humans' dialectical engagement with the world through labor generate ideas in our brains, it also serves as the proof of the validity of these ideas. Ultimately, it is the on-going social result of this practice, the ever-increasing ability of the human species to change the world – specifically, to subordinate it to our purposes – that proves the validity, the truth value, of our thought. In the Marxist view, it is through this interactive engagement with nature that humanity, over the millennia, builds up an increasingly large, increasingly sophisticated, and increasingly true, body of thought: a conception of nature, what it is, how it is structured, how it functions. For Marxism, it is this ever larger, ever more ramified, and ever more accurate, corpus of thought – categories, ideas, concepts, logic, hypotheses, theories, and facts - that constitutes our knowledge.

This praxis is not limited to humanity's interaction with the natural world; it also occurs on the societal level, so that, over time, we develop an increasingly elaborate conception of the social world. As human society evolves, and as it develops an ever-more ramified division of labor, new realms of endeavor appear — agriculture, crafts, manufacture, industry, art, music, dance, literature, drama, politics, science, medicine, mathematics, philosophy, religion. Each of these fields develops its own praxis — its own realm of practical activity and knowledge — that is both dialectical in its own structure and dialectically interrelated with the other realms of praxis. As a result, human society can be understood as an increasingly elaborate complex of interwoven dialectical practices, or, taken together, one gigantic, tremendously ramified praxis.

For Marxism, what is true of our species as a whole, of groups of people in specific areas of endeavor, and of individuals, is true of social classes. On the one hand, the ruling classes throughout the ages have had their own specific praxis, as they have engaged in the task of managing their societies and protecting them and themselves from threats from outside and from below. And, in and through such praxis, these classes have developed their own conceptions of the world, of their societies, and of their roles in those societies, in other words, their myths, religions, philosophies — in short, their own ideologies — that explain and justify their social roles and which they seek to foist on the classes subject to them through various means. Yet, because of their class position — as ruling, non-producing, and exploiting classes — and because of their interest in maintaining that position, the social knowledge of the ruling classes throughout history has been biased, limited, and ultimately false. In other words, such classes have not truly understood the natures of the socio-economic systems over which they have ruled. This, for example, can be seen quite clearly in the fantastic and ultimately apologetic theories of mainstream economics.

On the other hand, and most important from the Marxist standpoint, the oppressed classes – slaves, serfs, crafts-persons, small farmers, workers – also engage in praxis. This praxis includes that involved in their own work, but at least as important, it includes the class struggle. In and through such struggle, each class (with the exception of the peasants, who, because they are isolated from each other and because the division of labor among them is not well developed, do not develop an independent outlook and therefore tend to follow the leadership of other classes) develops its own conception of society, its own understanding of its social position, and its own ideas of its interests. This is particularly true of the working class, which by dint of its location and role at the center of capitalist production, is in a position to develop accurate knowledge of the world, and specifically, of the capitalist society in which it lives and works. It is this growing body of knowledge, embodied and theoretically elaborated in Marxism, that will enable the working class to overthrow capitalism and liberate itself and all humanity.

Consonant with this analysis, Engels, in *Anti-Duhring*, insists that at any moment, human knowledge is relative or approximate; at any given time, our knowledge does not give us absolute truth, an absolutely certain picture of the world, but only limited and partial truths. This is consistent with the (at least implied) view of science, which, given its evolution, particularly the "scientific revolutions," the radical changes in our scientific theories and conceptions, that have occurred periodically throughout the millennia, cannot claim that at any specific point its theories are (or were) absolutely true.

Engels writes:

"Each mental image of the world system is and remains in actual fact limited, objectively through the historical stage and subjectively through the physical and mental constitution of its maker." (Engels, *Anti-Duhring*, p. 44.)

"The perception that all the phenomena of Nature are systematically connected drives science on to prove this systematic connection throughout, both in general and in detail. But an adequate, exhaustive scientific statement of this interconnection, the formulation in thought of an exact picture of the world system in which we live, is impossible for us, and will always remain impossible." (Engels, Anti-Duhring, op. cit., p. 44.)

And:

"But as for the sovereign validity of the knowledge in each individual's mind, we all know that there can be no talk of such a thing, and that all previous experience shows that without exception such knowledge always contains much more that is capable of being improved upon than that which cannot be improved upon or is correct."

"It is just the same with eternal truths. If mankind ever reached the stage at which it could only work with eternal truths, with conclusions of thought which possess sovereign validity and an unconditional claim to truth, it would then have reached the point where the infinity of the intellectual world, both in its actuality and in its potentiality had been exhausted, and this would mean that the famous miracle of the infinite series which has been counted would have been performed. (Engels, Anti-Duhring, op. cit. pp. 96–97.)

Despite this, Engels also makes another, more far-reaching claim:

"(N)ow we come to the question whether any, and if so which, products of human knowledge ever can have sovereign validity, and an unconditional claim to truth...

"Is human thought sovereign? Before we can answer yes or no we must first enquire: what is human thought? Is it the thought of the individual human being? No. But it exists only as the individual thought of many billions of past, present and future men. If then, I say that the total thought of all these human beings, including future ones, which is embraced in my idea, is sovereign, able to know the world as it exists, if only mankind lasts long enough and in so far as no limits are imposed on its knowledge by its perceptive organs or the objects to be known, then I am saying something which is pretty banal and, in addition, pretty barren." [But true - RT]

And:

"In other words, the sovereignty of thought is realised in a number of extremely unsovereignly-thinking human beings; the knowledge which has an unconditional claim to truth is realised in a number of relative errors; neither the one nor the other can be fully realised except through an endless eternity of human existence. "Here once again we find the same contradiction as we found above, between the character of human thought, necessarily conceived as absolute, and its reality in individual human beings with their extremely limited thought. This is a contradiction which can only be solved in the infinite progression, or what is for us, at least from a practical standpoint, the endless succession, of generations of mankind. In this sense human thought is just as much sovereign as not sovereign, and its capacity for knowledge just as much unlimited as limited. It is sovereign and unlimited in its disposition, its vocation, its possibilities and its historical goal; it is not sovereign and it is limited in its individual expression and its realisation at each particular moment." (Engels, *Anti-Duhring*, op. cit., pp. 96–97.)

These two sets of quotations reveal a contradiction (which Engels himself admits). In the first set, Engels calls into question the absolute validity ("sovereignty") of human thought and hence of human knowledge in general. But in the second set, he hedges his bets, asserting that, in some sense, human thought/knowledge is, or at least one day will be, "sovereign." Engels seems to be contending that, while at any given moment, human knowledge is not absolutely – but only relatively or approximately – true, eventually, if humanity lives long enough, our knowledge, the combined knowledge of many, many humans over eons of time, will approach absolute truth. To express this in a mathematical analogy, Engels here appears to be contending that our knowledge, if given enough time, will approach absolute truth asymptotically, getting ever closer to it without ever quite reaching it.

Pursuing this question further, Engels goes on to divide human knowledge into three areas, each of which has its own level of truth claim:

"Are there then nevertheless eternal truths, final and ultimate truths?

"Certainly there are. We can divide the whole realm of knowledge into three great departments. The first includes all sciences which are concerned with inanimate Nature and are to a greater or less degree susceptible of mathematical treatment: mathematics, astronomy, mechanics, physics, chemistry. If it gives anyone any pleasure to use mighty words for very simple things, it can be asserted that certain results obtained by these sciences are eternal truths, final and ultimate truths; for which reason these sciences are also known as the exact sciences. But very far from all their results have this validity." (Engels, *AntiDuhring*, op. cit., pp. 97–98.)

"The second department of science is the one which covers the investigation of living organisms. In this field there is such a multitude of reciprocal relations and causalities that not only does the solution of each question give rise to a host of other questions, but each separate problem can usually only be resolved piecemeal, through a series of investigations which often requires centuries to complete; and even then the need for a systematic presentation of the interrelations makes it necessary again and again to surround the final and ultimate truths with a luxuriant growth of hypotheses... Anyone who wants to establish really pure and immutable truths in this science will therefore have to be content with such platitudes as: all men are mortal, all female mammals have lacteal glands, and the like..." (Engels, *Anti-Duhring*, op. cit., pp. 98–99.)

"But eternal truths are in an even worse plight in the third, the historical group of sciences... (K)nowledge is here essentially relative, inasmuch as it is limited to the perception of relationships and consequences of certain social and state forms which exist only at a particular epoch and among particular people and are of their very nature transitory. Anyone therefore who sets out on this field to hunt down final and ultimate truths, truths that are pure and immutable, will bring home but little, apart from platitudes and commonplaces of the sorriest kind... (Engels, Anti-Duhring, pp. 99–100.)

To understand what is at stake in Engels' treatment of these questions, it is worth noting several things about his discussion. First, Engels' comments suggest that he sees human knowledge, including and in particular, scientific knowledge, as additive: that is, he seems to believe that while at any given moment our scientific theories may be only approximately true, each new scientific discovery adds incrementally and quantitatively to our knowledge, bringing us ever closer to the absolute truth. While this may have been an understandable belief in the 19th century, during which science appeared to be making great strides, building logically and consistently on the foundations of the scientific revolution of the 16th and 17th centuries, today this view can no longer be sustained. As the discoveries of 20th century physics have shown, major scientific breakthroughs often involve significant qualitative changes (what the historian and philosopher of science Thomas Kuhn called "paradigm shifts,") in scientists' conceptions. As a result, it cannot be claimed that the theories of modern science are simply incremental improvements upon, merely quantitative additions to, the science of earlier epochs.

Thus, for example, modern physics is not a linear extension of the "classical" physics developed by Copernicus, Galileo, Kepler, and Newton (while theirs is not a linear extension of the cosmology of the ancient Greeks). Although the mathematical results of Newtonian mechanics can be seen as a subset of the mathematical conclusions of the theory of relativity (specifically, when the relative speeds of material bodies are slow compared to the speed of light), and while relativity continues to use some of the same categories and definitions as the earlier theory, the two theories are conceptually very different. In Newtonian physics, time and space are conceived as absolute, while gravity is understood to be a force of attraction that (somehow) acts instantaneously between two or more bodies at whatever distance they may be from each other. In contrast, for relativity, there is no absolute space and time, and gravity is no longer seen as a force acting at a distance. Instead, gravity is seen as the expression of the very shape of space itself, which is said to be more or less curved in proportion to the massiveness of the bodies present in any given vicinity. As a result, bodies under the influence of gravity are said to be following their "natural paths in space-time." More broadly, Newton's physics considers the universe to be mechanical, analogous to a machine. In contrast, relativity understands the universe geometrically, as a kind of varyingly curved "space-time continuum." How, then, can we say that the later theory represents simply a quantitative addition to the earlier one? In a very real sense, the two theories are, as some philosophers of science have put it, incommensurable. (For an excellent discussion of these and related issues, see *Perception, Theory and Commitment*, by Harold I. Brown, The University of Chicago Press, Chicago and London, 1979.)

The same situation can be seen in other areas of science. Prior to Darwin, mainstream biology thought that the different species of plants and animals were static; each species was immutable, and there was no evolution. Since Darwin, the vast majority of scientists no longer believe in the

unchanging nature of species. Instead, species are seen as mutable, changing over time, some of them evolving into new species. In what sense, then, can modern evolutionary theory be seen as just a quantitative addition to the earlier conception? In geology, to extend this discussion, the surface of the Earth was also once thought to be static; now we understand that the continents sit atop "tectonic plates" that are continually in motion: moving apart from each other, sliding past each other, colliding with each other, and "subducting," one plate being forced under another. As most people know, this is what causes earthquakes and volcanoes. Can the modern theory accurately be understood as a quantitative addition to earlier one? We can extend these examples to virtually every other area of science. As a result, Engels' idea — that our scientific knowledge, which at any given moment is relative, will, over time, ever more closely approach absolute truth — cannot be reasonably sustained.

Second, Engels appears to vacillate between two distinct, and ultimately incompatible, theories of knowledge (epistemologies), in one of which our knowledge is limited, partial, or approximate (what he calls "relative"), while in the other our knowledge is, or at least at some point will be, absolute (what he calls "sovereign"). This is perhaps the clearest reflection of the fact that, as I've insisted throughout this book, Marxism is a form of Idealist philosophy that believes itself, and claims to be, materialistic and scientific. But the two epistemologies Engels embraces cannot be combined, even via the gymnastics of Marxian (or Hegelian) dialectics. The two notions of truth come from two distinct sources and mean qualitatively different things.

But with materialist and empiricist philosophies, this is not the case. According to these philosophies, our knowledge is formed not simply through abstract contemplation or reasoning, but primarily through the impact of material particles and processes upon our bodies, specifically, on those parts of our bodies that are responsible for sensation and, through them, on our brains. And since the connection between the outside world and our brains is so mediated and because our sense organs, neurons, and brains, as material entities, are limited in crucial ways, there is no way to be certain that the ideas which our brains create out of our sensations (and from combining these with each other and with whatever innate ideas our brains might contain) fully and accurately reflect or represent the reality outside.

Marxism attempts to evade the conundrum by insisting that the proof of the truth of our ideas is practice, specifically, our actual ability to manipulate nature, to mold it to suit our purposes, and by its claim that this practice, over an infinite amount of time, dialectically resolves the contradiction between relative and absolute truth. But this does not solve the problem. The fact that human beings can manipulate nature suggests that our ideas about it have some validity (although precisely what this means is not clear and is still controversial), but it does not mean that our knowledge is or will ever be absolutely true. Among other things, this is one of the things revealed by the history of science. And there is no way, within a materialist or empiricist framework, that we can get to absolute truth, even over an infinite amount of time.

As this reveals, Marxism simultaneously holds to two contradictory notions of truth. One is the claim that since our knowledge results from praxis, human grasp of the truth can be only approximate. (This facet of Marxian epistemology is very close to some versions of pragmatism, such as John Dewey's, [although Marxists usually deny this]: what is true is what works, that is, what enables us to manipulate and transform nature.) The other is the opposite claim that eventually, if humanity lives long enough, our praxis will ultimately arrive at the absolute truth. This facet of the Marxist theory of knowledge is a reflection of the Idealist, specifically, Hegelian, origins of Marxism. In much the same way as Hegel believed he had overcome Kant's "antinomies," (reason's unresolved debate over the fundamental questions of philosophy), Marxism assumes that it has overcome the contradiction between these two incompatible conceptions of the truth through a dialectical synthesis. But like the other contradictions in the Marxian world view, this is merely assumed and asserted but never proved. And, as with those other aspects of Marxist theory, the ambiguity of Marxian epistemology serves Marxism's purposes. The explicit admission that our knowledge is only approximate or relative gives the underlying Idealist claim of Marxism, that it has discovered The Truth, a scientific cover. But the fundamental claim of Marxism is that it has discovered, and in fact embodies, the truth.

That the Idealist facet of Marxist epistemology is the fundamental theory is suggested by the number of times Engels and Marx use the terms "inevitable," inexorable," "necessary," and "historical necessity" throughout their writings. Although Engels explicitly states that historical knowledge is relative (of all the fields of knowledge, history is least able to claim that it has discovered absolute, eternal truths), he never even tries to square this with his and Marx's repeated assertions that socialism is "inevitable" and that it will "necessarily" occur through the dictatorship of the proletariat. In fact, throughout *Anti-Duhring* itself, Engels uses the terms "inevitable," "inevitability," or their equivalents repeatedly. For example (all emphases mine – RT):

On page 33: "But what had to be done was to show this capitalist mode of production on the one hand in its historical sequence and in its inevitability for a definite period, and therefore also the inevitability of its downfall..." On page 147, (nota bene that here Engels is quoting Marx): "The capitalist mode of production and appropriation, and hence capitalist private property, is the first negation of individual private property founded on the labours of the proprietor. But capitalist production begets, with the inexorability of a law of Nature, its own negation. It is the negation of the negation."

On page 165: "Modern capitalist production, on the contrary, which is hardly three hundred years old and has only become predominant since the introduction of large-scale industry, has in this short time brought about contradictions in distribution — concentration of capital in a few hands on the one side and concentration of the propertyless masses in the big towns on the other — which must of necessity bring about its downfall."

On page 311: "To Herr Duhring, socialism in fact is not in any sense a necessary product of historical development..." (In other words, Engels thinks socialism is a "necessary product of historical development.")

For those who believe that this is just the "positivist" Engels writing this, it is worth remembering that this type of language occurs throughout the works of both Marx and Engels, as well as in the material they wrote in collaboration.

For example, in the *Communist Manifesto*, perhaps the fundamental programmatic text of Marxism:

"What the bourgeoisie, therefore, produces, above all, is its own gravediggers. Its fall and the victory of the proletariat are equally inevitable." [Manifesto of the Communist Party, in Lewis S. Feuer, ed., Marx and Engels: Basic Writings on Politics and *Philosophy*, Anchor Books, Doubleday & Company, Inc., Garden City, New York, 1959, p. 20.]

And from Marx himself (in a passage I cited in Chapter V):

"And now as to myself, no credit is due me for discovering the existence of classes in modern society or the struggle between them. Long before me bourgeois historians had described the historical development of this class struggle and bourgeois economists the economic anatomy of the classes. What I did that was new to prove: 1) that the existence of classes is only bound up with particular historical phases in the development of production, 2) that the class struggle necessarily (my emphasis; all other emphases in the original — RT) leads to the dictatorship of the proletariat, that this dictatorship itself only constitutes the transition to the abolition of all classes and to a classless society. (Letter from Marx to J. Weydemeyer, March 5, 1852, in Karl Marx, *The Eighteenth Brumaire of Louis Bonaparte*, International Publishers, New York, 1963, p. 139.)

In fact, I know of only one place where Marx and Engels issue an explicit caveat concerning their theory of historical inevitability. This is also in the Manifesto:

"Free man and slave, patrician and plebian, lord and serf, guild master and journeyman, in a word, oppressor and oppressed, stood in constant opposition to one another, carried on an uninterrupted, now hidden, now open fight, a fight that each time ended either in a revolutionary reconstitution of society at large or in the common ruin of the contending classes." [*Manifesto of the Communist Party*, ibid., p. 7.]

And note that this just refers to the past, not to the future.

Much later, during the First World War, Rosa Luxemburg, in her Junius Pamphlet, introduced the expression "Socialism or Barbarism" into the phrasebook of revolutionary Marxism, expressing her belief that either the working class will overthrow capitalism and establish international socialism or the world will be plunged into barbarism. This, too, is often cited as proof that Marxists do not believe in historical determinism. Yet, how can one weigh these two caveats [perhaps there a few others] against the myriad references from the pens of the founders of "scientific socialism" that say the exact opposite? (And if one were to admit that socialism is not inevitable, what becomes of the Marxian claim that its socialism, in contrast to others', is "scientific?")

That communism is inevitable is, and has always been, the fundamental claim of Marxian "scientific socialism." But if historical knowledge (including the Marxian "materialist conception of history") is, as Engels insists, relative and not absolute, on what grounds can he (or Marx) assert the inevitability of anything historical? To say that something is inevitable is to say that it must or has to happen, that history cannot happen differently than it has, or is going to. Yet, this is to base oneself on the grounds of absolute knowledge, for only if our knowledge is absolute can we say that something is "inevitable." If, on the other hand, our knowledge is not absolute, if it is merely relative or approximate, we have no grounds on which to assert the inevitability, inexorability, or necessity of anything. We can, at best, assert that something is probable, even highly probable, but we cannot assert that it is inevitable or historically necessary. (Present-day science, even physics, which Engels believed had discovered some "eternal truths", does not

insist upon the inevitability of anything; at most, it asserts that something is highly probable, even extremely probable. Yet, Marxism has never actually demonstrated, let alone proved, that socialism is even probable.)

Intriguingly, Engels seems not to be aware of the contradiction between his (scientific) admission that knowledge, and particularly historical knowledge, is relative, and his repeated (and Idealist) insistence that socialism, to be achieved through a proletarian revolution and the dictatorship of the proletariat, is inevitable. But recognition of this contradiction is essential to understanding the historical, practical results of Marxism.

MARXISM AND MORALITY

When looked at from the standpoint of morality, the history of the Marxist/Communist movement presents a paradox. On the one hand, individual Marxists, from its founders on, have often, even usually, been motivated by the loftiest of ethical ideals. They have dedicated their lives, sacrificed familial and material comforts, traditional careers, and possible renown, and have often suffered exile, imprisonment, and death, in their struggle to promote the interests of the working class, to win the rights of women and oppressed minorities and nationalities, and ultimately to win the liberation of all humanity. On the other hand, when they have seized state power, Marxist organizations, and the individual Marxists who have comprised them, have established regimes that have been among the most brutal and oppressive ever seen in history, governments that have trampled on the rights and persons of the very people whom they previously championed. It has been the purpose of this book to try to explain this.

In light of this paradox, Marxism, and Marxists, have often been accused of being immoral, or at least amoral, since they reject traditional morality and, supposedly, substitute for it the belief that the "ends justify the means." This charge rests on two foundations.

One is the fact that Marxism is openly (indeed, militantly) atheistic, and as such, explicitly denies the validity of all traditional, that is, religiously based, moral or ethical codes. To Marx, Engels, and the vast majority of Marxists, ethics and morality flow out of and reflect material conditions, specifically, the distinct socio-economic formations, the modes of production, that humanity has created throughout its history: ancient slave society, feudalism, the Asiatic mode of production, capitalism. Each of these social formations generates its own ethical or moral code, which is an essential part of the "superstructure" and which hypostatises each socio-economic system as eternal and God-ordained. These codes simultaneously justify and defend the ruling classes' right to rule by exalting as holy modes of behavior that support, while condemning as evil modes of behavior that threaten, the specific forms of society that generate them. Thus, for Marxism, there is no absolutely true, eternal, God-given morality or code of ethics. As evidence of this, Marxists point out that ruling classes throughout history have flagrantly violated the very codes of morality they have held up as God-given, in order to defend themselves and the oppressive, exploitive societies over which they have ruled.

The other foundation of the charge that Marxism is immoral or amoral is the palpable reality that Marxists have, during and after the revolutions they have carried out, committed horrendous crimes — mass incarcerations, in prisons and labor camps, mass executions, and mass famines purposely or inadvertently caused by Marxist-inspired social engineering (e.g., forced collectivization in the Soviet Union, the "Great Leap Forward" in China), along with the crass lies, slanders, and distortions characteristic of Communist propaganda.

Despite the fact that these two claims have some validity, the standard accusation against Marxism is a considerable simplification and, therefore, a distortion.

In the first place, as I suggested in an earlier chapter, Marxism, despite its claims and its selfimage, is in fact deeply grounded in the fundamental tenets of the JudeoChristian tradition. The Marxist conception of history - that history has a meaning, that it is progressing toward a final goal, that this goal will be a state of ultimate goodness (an Earthly paradise), that this will come about through a cataclysmic transformation - is just a modern, secular version of the messianic/ apocalyptic visions of ancient Judaism and early Christianity. Moreover, Marx and Engel were both obviously motivated by the conviction that capitalism is a brutal and unjust social system, one that condemns the majority of people to short lives of hard work and suffering, while a tiny majority lives in extravagant luxury off the fruits of others' labor. Although Marx and Engels insisted that their opposition to capitalism was based solely on their "scientific" understanding that the capitalist system was historically obsolete and destined to disappear, this does not explain their sense of outrage at the injustices of the system. Their passion, which leaps out of almost every page of their writings, speaks of their own grounding in traditional notions of the moral worth and equality of all human beings and the conceptions of right and wrong, justice and injustice, that flow from this. Why else devote one's whole life so fanatically to the cause of socialism? Marx spent hours in the British Museum carrying out the most exhaustive research on the nature of capitalism and the theories of the economic thinkers who preceded him, while he and his family, whom he loved, lived in poverty. One might criticize his choices (and his conclusions), but his devotion to the cause was clearly based on a fierce sense of justice, rather than a cool, detached interest in investigating a neutral scientific fact. For his part, Engels passed a significant period of his life managing his family's textile business (in other words, being a capitalist, which must have been distasteful to him), while giving considerable amounts of money to the Marx family over many years so that his friend and comrade could continue his research and writing. Thus, although Marx and Engels would have vehemently denied it, both their personalities and their politics were deeply grounded in traditional, in this case, Judeo-Christian, ethics and morality.

In the second place, while it is certainly true that Marx and Engels, and most Marxists after them, believed that, at least to some extent, the "end justifies to means," this is not the unambiguous moral indictment that it is often assumed to be. The reality is that most people (except perhaps saints) believe, on some level and at some times and in some places, that the ends do in fact justify the means. We could not live in the world as it is if we didn't. Most of us believe that it is wrong to lie, yet most of us do it, quite probably, rather often. If a good friend (or perhaps a spouse or companion) approaches us with a new set of clothes or a new haircut and asks us, "How do I look?", most of us will tell him/her that he/she looks fine, even if we believe the outfit or haircut is not particularly flattering. How many of us have worked under bosses or supervisors we have not cared for (or even positively detested), yet have refrained from articulating how we felt about them (let alone cussing them out)? And at a meeting at which a boss or supervisor argues for a proposal that we think is poor, even stupid, do we always express our opinion clearly and forthrightly? No, not if we want to keep our jobs. In each of these cases, and in many more like them, when we act this way, we are acting under the dictum that the "end justifies the means." It is worth telling a "white lie" rather than unnecessarily hurting the feelings of, and complicating our relationship with, someone we care about. Likewise, it is not worth losing one's job to be absolutely forthright with a boss. And this is not to mention circumstances in which we have good reasons to believe that much more is at stake. For example, most of us, except absolute pacifists, accept the notion that when we are assaulted and threatened with physical injury and possible death, we are justified in responding with counter-violence, even to the extent of killing the attacker, in order to defend ourselves. In other words, in some circumstances, killing is justified. The end – saving your life – justifies the means – killing another human being.

For individuals who have authority or power - economic, political, legal, bureaucratic - in our society, the stakes become higher than for those at the bottom of the hierarchy. Capitalist politicians, even those that are relatively honest, uncorrupt, and concerned about the interests of their constituents and their country, will lie, evade, cheat, and steal, if they deem it necessary, whether to get elected or re-elected, to get a law passed, or to carry out some policy they feel is important. Looking at the top of the US political hierarchy, we can note many examples. Abraham Lincoln, by most accounts a decent human being, plunged the United States into, and presided over, the largest mass slaughter in the country's history, because he thought it was in the interests of the nation and of humanity as a whole to do so. During World War II, Franklin D. Roosevelt approved the fire bombings of Dresden, Hamburg, and other German cities, actions that resulted in the cruel deaths and burning of thousands of civilians, because he thought it was necessary to win the war against the Nazis. In his opinion, the end - winning the war and saving perhaps a greater number of lives down the road – justified the means, which were, in fact, violations of the Geneva Conventions, attacks on unarmed non-combatants, in other words, war crimes. Likewise, when Harry Truman decided to drop atomic bombs on Hiroshima and Nagasaki, he was operating under the same dictum. Similar choices, not usually so dire, confront virtually every individual in a position of authority or power over other people. The CEOs of powerful corporations allow or encourage their outfits to pollute the environment, resulting in illness and/or death for many people, in the interests of profitability. They also lay off people and close entire plants with the same end in mind or merely to raise the price of their companies' stocks. Heads of national intelligence agencies direct their underlings to torture and murder in order to defend "national security." As these examples suggest, such individuals, and, in fact, most of us, make decisions based, whether we like it or not, on the notion that the "end justifies the means." The nature of the end - how important it is, what is at stake, e.g., how many lives may be saved - helps to determine what means we are willing to consider under the concrete circumstances in which we find ourselves. In the case of Lincoln, Roosevelt, and Truman, in each situation, the stakes were deemed to be so high, the ends were seen as so important, that extraordinary means, in these situations, actions involving the deaths of tens of thousands of people, were justified, even required. So, in this sense, Marxists are no different from anybody else.

But Marxists do differ from most non-Marxists in how they approach their moral/ethical decisions, and this in several ways. Probably most important, for Marxists, the stakes, the "ends," are almost always set at the highest level. From their point of view, what is at issue in many, if not most, of their actions is the fate of humanity. After all, they believe their goal, socialism/ communism, the end for which they are fighting, ultimately entails the liberation of the entire human species, human freedom. When the stakes are believed to be as high as this, means that would otherwise be considered immoral, for example, measures that might result in the deaths of thousands, even millions, of innocent people, become acceptable. What are the deaths of a few (tens, hundreds, thousands, hundreds of thousands, millions?) individuals when the fate of all humanity is at stake?

Secondly, because Marxists believe that the road to human freedom involves violent social transformations, when they have come to power, they have usually done so in circumstances under which society, as it normally is, has broken down, including and in particular, its norms of ordinary, moral human behavior, what might be called "common decency." When the Bolsheviks seized state power in October 1917, they did so after more than three years of the most frightful slaughter, when millions of workers, peasants, and middle class people, on both sides of the conflict, soldiers and civilians alike, were killed or maimed or died of starvation or illness. So, when the Bolsheviks resorted to brutal, repressive measures to consolidate their rule, they were not inventing extreme violence. They were merely acting in the context of the general breakdown of social norms that had been caused, as they saw it, by the very social system they were attempting to overthrow. It is also worth remembering that for Marxists (and not only for Marxists), normal, supposedly peaceful society is itself founded on cruelty and violence, such as that perpetrated daily by the state and its agencies on the exploited and oppressed classes, particularly on those individuals and groups who dare to resist, along with the poverty and oppression, hunger and outright starvation that the millions of people at the bottom of international capitalist society experience. In this context, Marxists' commitment to cruel and violent means does not appear, at least to them, to be very extreme at all.

Beyond this, revolutionary Marxists are more prone to resorting to violent and coercive means because of the very content of their theory, the fundamental tenets of Marxism.

(1) Most obvious of these is Marxists' commitment to the use of the state as the main social instrument by which to implement their program. As we have seen, they call this state the "dictatorship of the proletariat" and claim that it is truly democratic, that it is the "proletariat organized as the ruling class," a "state that is in the process of becoming a non-state," a state that it is "withering away." But, it is crucial to remember, it is still a state, the most powerful instrument of social coercion ever created by human beings. By the state's very nature, almost everything involving it is going to entail mass coercion. And since, from the Marxist standpoint, the essence of the state, as an institution, is violence and its fundamental role repressive, the essence of the dictatorship of the proletariat, too, is violence, while its social role and ultimate purpose likewise is repressive. In addition, Marxists describe this state as a revolutionary dictatorship, a state that is established in the course of a revolution and one that is not bound by ordinary, peacetime norms and procedures of legality and justice; in other words, such a state (for example, the French state under the Jacobins during the French Revolution) takes whatever steps it deems necessary to secure victory. To make matters worse, this supposedly proletarian state is one that has taken over, or aims to take over, all of the means of production, all of the economic apparatus of society, or as much of it as is feasible at any given time. This renders this particular state extraordinarily powerful, since it is faced with no, or at least very few, countervailing institutions that might serve to limit its power. Finally, as I argued in the chapter on the question, the very notion of a dictatorship of the proletariat, in the sense of a centralized state run directly and democratically by the entire or even by the majority of the proletariat, is a contradiction in terms and impossible to achieve. When, during the course of a revolution, Marxist revolutionaries establish what they believe to be the dictatorship of the proletariat, what they actually create is a dictatorship of revolutionaries (and other individuals) over the proletariat that claims to act in the proletariat's name and interests. So, here we have an extraordinarily powerful state, unfettered by countervailing institutions and not bound by ordinary norms of law and justice, whose fundamental role is repression. Is it any wonder that, based on such a theory, Marxists have created, not "dictatorships of the proletariat," but monstrous Jacobin-style dictatorships, armed with the advanced technology of their day.

(2) An additional facet of Marxian theory that renders Marxists prone to extremely violent means is their version of dialectics, particularly their understanding of the nature of contradiction. Since, according to Marxism, all reality, including history, develops through contradiction, freedom is to be brought about through un-freedom, through coercion; in fact, it can be brought about only through coercion. In contrast to Idealist conceptions of dialectics (such as Hegel's), for Marxists, when it comes to the class struggle, there is no synthesis; the end result, logically speaking, of the struggle between social classes is not a synthesis of the opposing classes, some sort of creative amalgamation of the two contending classes that preserves what is positive in both. On the contrary, the logical conclusion of the class struggle, the point toward which the class struggle in any given historical epoch tends, is the complete annihilation of one of the contending classes. In the context of the proletarian revolution, therefore, one of the proletariat's main goals must be the complete and total destruction of the old, reactionary ruling classes, and the more thoroughly those classes and their agents and followers are eliminated, the more certain and more secure will be the victory of socialism/communism, the realm of freedom. When this is combined with the Marxian commitment to the use of a dictatorial state, the logic of Marxism is to impel Marxists, when they do gain control of a state, toward an ever-intensifying escalation of state-sponsored violence against all social forces that are perceived to be the enemies of the proletariat, aiming toward their complete social, and even physical, annihilation. According to the Marxist version of dialectics, then, the new world of socialism - a realm of peace, freedom, equality, cooperation, comradely affection (dare I say "love"?) - is to be established through methods that entail the very opposite of these values: violence, coercion, hierarchy, and (class) hatred.

(3) Marxists' conscious rejection of traditional, religiouslybased, moral/ethical codes also contributes to their willingness to utilize and justify brutal and dishonest methods. It does so because it means they are less likely to have, or at least to articulate and act upon, second thoughts or scruples about engaging in what most people would consider to be morally questionable acts. In fact, the case is rather to the contrary. To put it differently, a commitment to Marxist theory usually entails attempts on the part of Marxists, certainly those who have seized state power, to suppress their moral consciences, to repress their feelings of distaste, disgust, or even horror over the consequences of their actions, since these consciences and feelings are perceived to be products of their "bourgeois" upbringings, legacies of a corrupt and decadent capitalist society, which are bound to be eliminated and supplanted by the superior morality of communism. As a result, particularly in a hierarchical setting, such as a Leninist-style party, there will likely - indeed, almost inevitably - be extreme social pressure directed against those who question the wisdom or morality of using brutal, violent, and dishonest tactics. Such individuals will be accused of being insufficiently liberated from traditional religious beliefs and bourgeois social conventions ("soft", "weak-kneed", suffering from "bourgeois sentimentalism"), if not downright counterrevolutionary, and will tend to be marginalized within the party, if not actually victimized by state repression. Since, according to Marxism, the victory of the proletarian revolution requires coercion – violence and repression – the logic of the theory is for Marxists to strive to inure themselves against - that is, to try to suppress, their moral computcions about, even

revulsion over — the violent, often gruesome, acts they commit. The other side of this process is that it tends to bring to the fore, within the Marxist party and the state, those individuals who are most adept at doing this. Even more, once they have gained power, Marxist organizations tend to attract to their side and promote, particularly in the ranks of the police apparatuses, individuals who have very poorly developed moral consciences or even no moral consciences at all, in other words, extremely brutalized individuals and outright sociopaths (such as Stalin and Beria).

(4) Marxists' belief in historical necessity and in the progressive, immanent logic of history leads them to believe, as did Hegel, that everything that has happened in history, no matter how horrible, has been necessary and therefore justified. Engels, for example, justified the establishment of ancient slavery as progressive, in part because he believed it to be a necessary and inevitable step in a history that will eventually lead to human freedom. Hegel said it: What is real is rational, and what is rational is real. With this belief, anything that happens — no matter how brutal or barbaric it may be — that can be convincingly explained by Marxist theory as promoting or representing the historic process can be rationalized and justified as "progressive." Thus, Stalin's policy of forced collectivization and the mass starvation it caused and the vast purges he carried out in the Soviet Union in the late 1920s and 1930s that resulted in the imprisonment and deaths of millions of people, can be, and were, justified as "historically necessary" steps leading to the full victory of socialism. Mao's "Great Leap Forward", a policy that also led to widespread famine and the deaths of many millions, was justified on the same basis, as was the very violent "Cultural Revolution" of the 1960s.

(5) Marxists' conviction that morality is a purely historic product and that it can never be higher than the specific historical stage in which humanity finds itself at any given time encourages them to denigrate morality and ethical norms in general, seeing them primarily as aspects of the political and ideological superstructures of exploitive societies and, more narrowly, as religious myths designed to maintain subjugated classes in their subordinate positions. In Anti-Duhring, for example, Engels argues that the notion of human equality, and hence ideas of justice and injustice, arose only during the epoch of feudalism, nurtured among and eventually championed by the nascent bourgeoisie. In contrast to this view, however, recent scientific discoveries suggest that crucial aspects of our moral and ethical ideals, including our ideas of justice and injustice, are, in fact, deeply grounded in human biology, essential parts of our evolved human nature: human beings, and it appears, other mammals, have a hard-wired moral sense, an intuitive conception of justice and fair play, and therefore, some notion of moral equality. If this is so, then many of the ideals and norms embodied in ancient religious traditions, such as the Ten Commandments and the Golden Rule, are not just tricks on the part of ruling elites to inculcate thoughts and behavior that serve to sustain their rule, but represent, however crudely and mechanically, something very basic to our (biologically-evolved) human nature. It is certainly true that moral and ethical codes are historically conditioned, that they adapt themselves and make themselves appropriate to specific forms of society. It is also true that they have been utilized by ruling elites to justify and sustain their own rule. But these moral/ethical codes and norms have been something more than merely passive reflections of the class structures of particularly societies and ideological weapons in the hands of specific ruling classes; they represent more than simple apologia for those societies. These codes and norms have also contained norms for criticizing these societies on moral and ethical grounds, which is why they have periodically lent themselves to radical and even revolutionary purposes. In fact, human morality appears to have

a history, an underlying tendency to evolve, that is independent of the specific modes of production through which human society has evolved. This history entails the gradual enlargement of the realm of the mandated application of the moral norms (the ideas of justice and fair play) to ever wider circles of the human species, from family to clan, to tribe, to region, to race, to gender, to nation, and (hopefully) to all of humanity. But Marxism does not see this. Failing to recognize the deep-seated foundation of our moral sense, and hence of our traditional moral and ethical codes, the Marxian conception of morality and ethics leads Marxists to denigrate those traditional moral strictures and both facilitates and justifies their willingness to use methods that violate them.

(6) Marxism's underlying but unconscious Idealism, its belief that categories and other abstractions, such as social classes, are what is ultimately real, often leads them to devalue concrete individual human beings and to subordinate them to the "higher" needs of the class struggle. For example, the working class, the proletariat, is more important than individual workers, who can and should be sacrificed — exiled, jailed, or executed — if the necessities of the class struggle and the revolution, as the Marxists judge them, demand it. Even more, members of non-proletarian social classes, such as peasants, small business people, artisans, artists, professionals, and intellectuals, tend to be defined and judged by Marxists primarily by their (non-proletarian) class position and only secondarily by their concrete attitudes and behavior. Thus, unless they are members of the Marxist revolutionary party, they are usually conceived to be intrinsically less important — less valuable as human beings — than members of the working class and therefore much more readily "expendable," that is, subject to repressive measures, including physical elimination.

(7) Finally, Marxists' belief in the truth of their theory, their (nearly absolute) conviction that Marxism is right, underlies and reinforces their willingness to resort to extremely violent and brutal methods. Individuals who fervently believe that their theory is absolutely (or nearly absolutely) correct, that this theory obliges them to utilize state-sponsored violence against entire social classes, and that the outcome of their theory-inspired actions is the liberation of the human species are likely to be far more willing to be brutal than those who have strong doubts about their world view. Although Marx wrote that his personal credo was "Doubt Everything," this doubt is not an intrinsic part of his system; much like Descartes' "methodological doubt," it is not logically integrated into the theory. On the contrary, it is a methodological stricture that is necessarily external to the resultant theoretical conception. Specifically, it is a crucial tool in the philosopher's search for absolute truth, for certainty, the very opposite of doubt. And it is the certainty, not the doubt, that becomes an essential aspect of the theory/ideology and that gets conveyed to the disciples. Whatever doubts Marx and Engels may have entertained about their worldview, they certainly did not discuss them publicly. As a result, what got communicated, and what continues to get communicated, is the sense of absolute conviction, the "scientific" certainty, that their theory is true, that socialism is inevitable and that it must be, and can only be, achieved through the dictatorship of the proletariat. And this is what is picked up, embraced, and aggressively propagated by the vast majority of Marxists. To Marxists, they, and only they, understand the nature and direction of history. They, and only they, represent - in fact, embody - the historic consciousness of the working class, whatever the workers may think at any given time. When they act, in other words, they represent history. It is likely, however, that for many, if not most, Marxists, their doubts about the validity of their theory are not totally suppressed; such doubts probably still exist in the form of a kernel, a gnawing worm, somewhere deep in

their minds. But as long as they remain Marxists, this sentiment, if anything, serves to reinforce their fervor, as they struggle privately to suppress their doubt. In this sense of (near)certainty (along with the dialectic of certainty versus doubt) about the correctness and righteousness of their cause, Marxists are merely continuing in the tradition of religious fanatics throughout the millennia, whether they have been Jewish, Christian, Hindu, Moslem or the followers of any other religion. The main difference between explicitly religious fanatics and Marxists is, obviously, that Marxists claim to be atheists; but they embrace their atheism and their dogma with the same fervor, and via the same dynamic, as religious fanatics hold to their beliefs. And like so many religious fanatics, in the past and in the present, and for the same reasons, they have been willing to utilize, justify, and excuse, the most brutal and barbaric means to reach their (holy) goals.

DETERMINISM AND FREEDOM

The explicit goal of Marxism, what Marxists claim to be fighting for, is human freedom. Marx and Engels believed that communism, to be achieved through a proletarian revolution and the establishment of the dictatorship of the proletariat, would be a truly free society. This is in contrast to capitalism, under which individual human beings are free in only a formal, legal sense (that is, they are neither slaves nor serfs), while they remain subject to exploitation by the capitalists, to the destructive effects of the dynamics of capitalist production and particularly of capitalist crises, and to the overall domination of the forces of production which they themselves have produced. Under communism, the former proletarians will be free substantially. They will be the "associated producers," who, because of their classless and collective organization and their control over the means of production and society as a whole, will no longer be exploited and will no longer be the victims of the blind, inexorable workings of the laws of capitalism (and of nature). Instead, they will subject these laws and the forces of production to their conscious control, manage society collectively and democratically through a conscious plan, and via these means, overcome relative scarcity, shorten the workday, end the subjection of the individual to the division of labor, and usher in the realm of true freedom.

"In making itself the master of all the means of production, in order to use them in accordance with a social plan, society puts an end to the former subjection of men to their own means of production. It goes without saying that society cannot itself be free unless every individual is free. The old mode of production must therefore be revolutionised from top to bottom, and in particular the former division of labor must disappear. Its place must be taken by an organization of production in which, on the one hand, no individual can put on to other persons his share in productive labor, this natural condition of human existence; and in which on the other hand, productive labor, instead of being a means to the subjection of men, will become a means to their emancipation, by giving each individual the opportunity to develop and exercise all his faculties, physical and mental, in all directions; in which, therefore, productive labor will become a pleasure instead of a burden." (Engels, *Anti-Duhring*, op. cit., p. 320.)

"The seizure of the means of production by society puts an end to commodity production, and therewith to the domination of the product over the producer. Anarchy in social production is replaced by conscious organisation on a planned basis. The struggle for individual existence comes to an end. And at this point, in a certain sense, man finally cuts himself off from the animal world, leaves the conditions of animal existence behind him and enters conditions which are truly human. The conditions of existence forming man's environment, which up to now have dominated man, at this point pass under the dominion and control of man, who now for the first time becomes the real conscious control of Nature, because and insofar as he has become master of his own social organisation. The laws of his own social activity, which have hitherto confronted him as external, dominating laws of Nature, will then be applied by man with complete understanding, and hence will be dominated by man. Men's own social organisation which has hitherto stood in opposition to them as if arbitrarily decreed by Nature and history, will then become the voluntary act of men themselves. The objective, external forces which have hitherto dominated history, will then pass under the control of men themselves. It is only from this point that men, with full consciousness, will fashion their own history; it is only from this point that the social causes set in motion by men will have, predominantly and in constantly increasing measure, the effects willed by men. It is humanity's leap from the realm of necessity into the realm of freedom." (Engels, Anti-Duhring, ibid., pp. 309 - 310.)

Despite this apparently libertarian vision, Marxists, where they have had the opportunity to implement their program, have not created free societies or even societies moving toward freedom. Instead, they have created social systems that have been among the most brutal and tyrannical of any seen in history. This, I believe, is not an accident. Although a variety of factors contributed to these outcomes, a crucial responsibility for these results lies with Marxists themselves, specifically, with the actions they have taken and the policies they have pursued upon their victories in social revolutions. And central to the motivation behind these actions has been Marxist theory, the consciously-held views of Marxists, along with the logical implications of these views, of which Marxists have not always been aware. Throughout this book, I have attempted to trace some of the totalitarian implications of Marxist theory. Here I would like to focus on the Marxian theory of freedom.

In Anti-Duhring, Engels explains his conception:

"Hegel was the first to state correctly the relation between freedom and necessity. To him, freedom is the appreciation of necessity. "Necessity is blind only in so far as it is not understood." Freedom does not consist in the dream of independence of natural laws, but in the knowledge of these laws, and in the possibility this gives of systematically making them work toward definite ends. This holds good in relation both to the laws of external nature and to those which govern the bodily and mental existence of men themselves — two classes of laws which we can separate from each other at most only in thought but not in reality. Freedom of the will therefore means nothing but the capacity to make decisions with real knowledge of the subject. Therefore the freer a man's judgment is in relation to a definite question, with so much greater necessity is the content of this judgment determined; while the uncertainty, founded on ignorance, which seems to make an arbitrary choice among

many different and conflicting possible decisions, shows by this precisely that it is not free, that it is controlled by the very object it should itself control. Freedom therefore consists in control over ourselves and over external nature which is founded on knowledge of natural necessity; it is therefore a product of historical development." (Engels, *Anti-Duhring*, ibid., p. 125.)

It is in passages such as these that the Hegelian nature of Marxism is perhaps most clearly revealed. Hegel did not believe in freedom in the commonly-accepted meaning of the term. To him, history is the working out of an immanent logic that has existed eternally in the mind (actually, as the mind) of God. All that happens, everything that everybody does, every thought that every individual human and humanity as a whole has had or will have, reflects the working out of that logic. In the Hegelian view, in other words, history is determined and "necessary," everything that happens is ordained. Conversely, there is no contingency, no chance; that some things appear to be contingent or the result of chance merely reflects our inability to recognize the (dialectical) chain of causation that has led (in fact, inexorably) to the apparently chance event. As a result, freedom, as Hegel defines it, is the conscious recognition, the conscious understanding, appreciation, of that necessity or logic; it is having one's mind in conscious conformity with God's. To Hegel, an apparent "refusal" to align one's consciousness with that of God is not freedom; it is, in fact, ordained, determined, a reflection of the dialectical "cunning of reason." As a result, for Hegel, there is no freedom, in the sense that most people understand the word.

As Engels' remarks suggest, he — and Marx — shared this conception of freedom. In the Marxist view, all of reality, natural and social, develops according to natural and social laws. These laws are not just representations — analogies or models — in the human mind of the way the world might work, but are structures that actually inhere in the natural and social/historical worlds and determine what happens. This is why Marx and Engels' writings abound with references to "inevitability," "inexorability," and "necessity." And this is why they called their conception of socialism "scientific"; they believed they had discovered the historical logic that will make the overthrow of capitalism and its replacement by socialism/communism (through the dictatorship of the proletariat) inevitable. As in the Hegelian world view, in Marxism, there is no freedom to resist the historic process. Both support for and resistance to the cause of the proletariat are determined, along with the illusion that this is a matter of choice (remember, "social being determines social consciousness"). Both "choices" represent the concrete working out of the (Marxian) dialectic of the class struggle. In sum, rather than believing in freedom, as most people conceive of it, Marx and Engels, like Hegel, were determinists.

There are many versions of determinism. One, held by the ancient Greeks, sees the world and human beings as being ruled by an overarching, external Destiny or Fate. To be subject to this Fate can be likened to being in an invisible cage that determines the outcome of events, including the lives of individuals, regardless of people's subjective intentions. This conception of determinism can be clearly seen in Sophocles' drama, Oedipus Rex. At the beginning of the play, we will remember, an oracle foresees that Oedipus will kill his father and marry his mother. And this is what happens at the end of the story, although this was never Oedipus's conscious intent; circumstances, abetted by ignorance, virtually impel Oedipus to carry out these heinous crimes. In this variant of determinism, Fate is external, working apart from, and even against, individuals' conscious wills. The great Russian writer, Leo Tolstoy, had a similar conception, which is elaborated at some length toward the end of his epic novel, War and Peace. To Tolstoy, history is like a massive river that sweeps up everybody and everything in its mighty flow, regardless of individual wills. Based on this conception, Tolstoy saw the "great men" of history, such as Napoleon and the Russian general Kutuzov, as being less, not more, free than the rank and file soldiers in the French and Russian armies.

In partial contrast to this view are those that see the determinist logic working through the wills of individuals, not against them. Thus, for Hegel, the dialectical logic of history determines the consciousness and the individual wills, the conscious intentions, of all the participants, even though, consistent with the dialectic, these wills often and even usually appear to be at cross purposes to each other and even counterposed to the direction of history. In this way, the logic of history, what Hegel called the "cunning of reason," does its work, operating through the wills of the historical participants, including and in particular (at least for Hegel) those of history's "great men." The Dutch-Jewish philosopher, Baruch/Benedict Spinoza, whom Hegel consistently praises, held to a similar, though non-dialectical, standpoint. He argued that if a stone that has been thrown through the air were conscious, it would believe that it was being propelled by its own free will. For these determinists, the laws of history do not eliminate freedom but are, in some sense, responsible for it. Freedom is being aware of, and consciously willing, the course of history; freedom is having one's conscious will in line with the laws of nature and of history. Hence, for these thinkers, freedom is the recognition (or appreciation) of necessity.

(There is yet another variant of determinism that is worth noting at this point, something that might be called "structural determinism." This is the belief that the large-scale structures of any process [I am thinking here primarily of social, economic, and historical processes] are determined, but that within the bounds of these structures, specific events and the consciousness of individuals are not fully determined. Engels seems to approach this standpoint when he writes that "in the long run" or "in the last analysis" the material structures of social life determine human consciousness.)

Now, the question of determinism is, like many of the other questions addressed in this and the previous chapter, one of those that have been discussed by philosophers for over twentyfive hundred years, and it has never been resolved. Is everything in nature and human life determined? Has everything that has happened been inevitable — did it have to happen just when, where, and how it did — or might it have happened differently? Are all facets of reality determined, some of them, or none of them? Nobody knows the answers to these questions, and there has never been agreement, among philosophers and others who have concerned themselves with the issue, about the answers.

At the time Marx and Engels wrote, however, it appeared as if science had, in fact, answered the questions. In the 19th century, scientists were making (and had been making since the mid 16th century) discoveries that seemed to confirm the view that everything that happens in the apparently material world happens of necessity, occurs inevitably; that all physical events are connected in one vast chain of causation that cannot be broken and that leaves no room for chance. (The fact that during this period, scientific knowledge did appear to be additive; that scientists were increasingly discovering what appeared to be absolute, empirically verified truths about nature, seemed to confirm this belief.) Marx and Engels (along with many other 19th and early 20th century champions of science, including leading figures in the anarchist tradition), accepted this view and believed they had extended it, via their materialist conception of history, to the social realm, the realm of human society and its history.

But, as we've seen, more recent developments in science have rendered this conclusion doubtful. While in much of the macro world of physics (especially those phenomena addressed by the theory of relativity), events seem to be determined, in the subatomic dimension, this appears not to be the case. In that world, according to most interpretations of quantum physics, events are not understood to be determined but are deemed to be more or less probable. (In other words, there is no inevitability, no inexorability, no necessity.) Moreover, this is not a result of the insufficiency of our knowledge but reflects the very nature of reality itself. In addition to these two realms, there are areas that lie, in a sense, between them in which the question of determinism/ inevitability vs. probability is undecided. For example, recent discoveries have suggested that the uncertainties of the quantum world express themselves on the molecular level, including in the behavior of relatively large molecules, such as DNA and RNA, and even on the level of entire organisms. If these findings are confirmed, it will mean that some of the realms of chemistry and molecular biology are also, like the world of sub-atomic particles, probabilistic, rather than determined, in character. If the seemingly random mutations of genetic material that are responsible for evolution are truly random, then biological evolution, too, is indeterminate. Then there are the areas of scientific investigation in which the phenomena involved are now conceived to be determined but in which the theories and conceptions we use to understand and explain them are statistical and only give results in terms of probabilities. Thus, while in theory, the processes involved in creating our weather, as phenomena of the macro world, are thought to be determined, in practice, our ability to predict the weather is limited; meteorologists cannot give us certainties but only probabilities, and these get ever lower as the time frame is lengthened. Is this merely the result of our limited knowledge, or are the phenomena of the weather actually indeterminate? Similarly with certain processes studied by geologists, such as earthquakes and volcanic eruptions; while they may be fully determined, we are currently unable to make precise predictions about when and where these events will occur. In like manner, the laws of thermodynamics and the scientific laws that describe the behavior of gases are not absolute but statistical and therefore probabilistic in their conclusions. Are these realms determined or is contingency at work? We really don't know. So, what we see when we peruse the different realms of science is a patch-work of theories, some of whose implicit philosophical implications are inconsistent with others.

There are various possibilities here. One is that all of natural reality (including the subatomic realm) is determined; it is only limitations of our knowledge and/or of our brains that prevent us from seeing this and from making accurate predictions. (This was Albert Einstein's position.) Another is that some aspects of reality (e.g., the realm of relativity) are determined, while others (e.g., the subatomic realm) are not. (This is the practical standpoint of perhaps most working physicists today.) Still another is the conception that all of natural reality is probabilistic (like the subatomic world), but this is not (yet) accurately grasped in scientific theory. This is why some scientists do not believe the theory of relativity, which is deterministic, is truly correct and are searching for a theory of "quantum gravity." Finally, it might be the case that the different realms of reality lie on a kind of spectrum; in some realms, everything is determined, while in others, there may be more or less space for contingency.

The problem is even more complicated when we look at the social world, in which what are commonly called the "social sciences" have made very little progress in developing theories that can accurately predict human behavior and/or historical development. Aside from the problem of multiple causation there are so many factors at work in any given social or historical situation that it is virtually impossible to predict outcomes - the question is made much more difficult by the fact that humans have a definite subjective sense of freedom or nondeterminism. We believe we are free. While it is possible that all of our actions and all of our thoughts (including this sense of free will) are, in fact, fully determined - that is, that they are the inevitable and inexorable result of who we are genetically, along with how we've been shaped by our environment and by our own actions – we certainly do not feel that this is the case. We believe that at any given moment, we are capable of deciding to do one thing rather than another, to turn left instead of right, to eat the sweet, fatty ice cream we know we shouldn't or to forego it, to do the chore that's on our "to do" list or to be lazy and leave it for another day. Perhaps all of our conscious decisions are strictly determined but we just don't realize this. Obviously, our choices are not totally undetermined. We are, for example, limited by the nature of our bodies and, more broadly, by the physical "laws of nature": we cannot fly, run faster than a certain speed, breathe under water, go without water and food for more than a few days or weeks, live forever, etc. We are also hemmed in by the social world in which we live - we need to go to work (or have an alternate source of income), we cannot do certain things with impunity, and are otherwise limited by decisions we have made and the other circumstances in our lives, e.g., how much education we have received and the kinds of skills we possess, where we live, our immediate social arrangements, whether we are married, have children. But within these strictures, we do feel that we have real freedom to make choices. Among other things, this belief stands behind our conceptions of ethics and morality; we believe people have a choice about whether to do right or wrong, good or evil, and that they therefore both can and should be held responsible for their acts. Does this subjective sense of freedom reflect reality or is it just an illusion? Do we really have free will, and if so, how much, or are our wills completely determined?

There are some modern theorists who argue that our sense of freedom, our belief in "freedom of the will," is an illusion. This is the thesis of The Illusion of Conscious Will, by Daniel M. Wegner (The MIT Press, Cambridge, Massachusetts, London, England, 2002). Basing himself on research that shows that when we make a conscious decision to, say, lift a finger, the neurological processes that result in raising that finger begin measurably before¬ we are conscious of making the decision to raise the finger, Wegner denies that we have freedom of the will. Instead, he argues that our conscious will does not determine our decision but is itself a result of other processes that have, in fact, made us lift the finger. As Wegner interprets these experiments, then, consciousness is an epiphenomenon, a surface reflection of some other processes and not in itself determinant. As a result, to him, our sense of conscious will is an illusion; we believe we have consciously decided to lift our finger and that this is what caused our finger to go up, but, in fact, some other, e.g., neurological, process really made us do so and then created the subjective sense that we have made the decision.

It is worth noting, however, that Wegner's interpretation of the research upon which he bases his conclusion is not universally accepted within the field. (Significantly, the man who carried out the experiments did not agree with it. [See Benjamin Libet, "Do We Have Free Will?," *Journal* of Consciousness Studies, 6, No. 8–9, 1999, pp. 47–57.]) Moreover, there is plenty of research that suggests that consciousness is, in fact, essential to much of our decision-making and behavior. Lastly, if conscious will is an illusion, as Wegner contends, why did it arise? Why do we have the sense that our conscious decisions determine (at least some of) our actions? Evolutionary theory would imply that consciousness, and therefore our ability to make decisions, is adaptive, enabling species that are conscious, or more conscious than others, to survive better in environments that are changing, challenging, and ultimately hostile. But if conscious decision-making is an illusion, it seems like a tremendously costly and wasteful (caloricallyspeaking) one that the process of evolution would have quickly eliminated as a dead end.

I do not propose to try to answer the question of determinism/contingency here. In fact, I don't think it can be answered, at least not given the present state of our knowledge. And it may well be one of those questions that never will get answered, one of the great mysteries of our existence that will be pondered for as long as human beings survive. Although some people may find this worrisome or even frightening, it need not be so, because it would then mean that freedom, in the sense that most people understand it, is at least possible. And if it is, it will mean that we, both as individuals and as a species, may have the power to control our fates and are not condemned to be merely passive and ultimately deluded products and objects of fully determinate scientific "laws."

But leaving this question aside, I wish to return to a point I made in an earlier chapter. This is that what one believes will have an impact on what one does, that is, how one behaves, how one acts in the world. Specifically, people who do not believe that freedom (in the commonly accepted meaning of the term) truly exists, will not, should they be in a position to establish new societies, create ones that are truly free. (If true autonomy does not exist, why allow for?) It is not an accident that Hegel, with his fully deterministic world-view, admired and glorified the state, in general, and supported the reactionary Prussian monarchy of his day, in particular; or that Plato attempted to set up real versions of his ideal society by making alliances with dictators.

Marx and Engels are followers of this determinist tradition. They believed that all processes, natural and social, are governed by inexorable laws. Consequently, they did not believe that freedom, in the sense that most people understand it, really exists. To them, freedom is the "appreciation of necessity"; it is merely a question of recognizing what will inevitably happen and being on the side of, consciously supporting the emergence of, that inevitability, an apparent "decision" that is, in fact, determined. And it is this inevitability that is recognized by - indeed, is embodied - in Marxist theory. Although Marxism does not claim to be able to predict all the details of future historical development, it does claim to know, as we have seen, that socialism is inevitable and that it can only be created through the establishment of the dictatorship of the proletariat.

In light of this, it should be no surprise that the social systems Marxists have set up have not been free in any meaningful sense of the term. To Marxists, freedom is understanding history as they understand it and acting on this understanding in the manner Marxists decide is correct: it is the "appreciation of necessity." As a result, the Marxists who have managed to seize state power have never intended the workers, peasants, and other oppressed people to actually decide on the types of societies they wished to build, to determine what their goals might be and what measures and methods they might use to reach those goals. On the contrary, Marxist revolutionaries have believed that these questions have already been answered; they (the Marxists) know, at least in general, what needs to be done, because this is described in and prescribed by Marxist theory, which they understand to be true. To them, the inevitable outcome of history is a (Marxist-led) revolution that establishes a dictatorial state, based on nationalized means of production, that suppresses the old ruling classes and their agents. This "dictatorship of the proletariat" paves the way for the first stage of socialism (whose motto is "from each according to his abilities to each according to his work"), which will eventually lead to the second stage of socialism, or communism (whose motto is "from each according to his ability to each according to his needs"). From the Marxist point of view, all this has been delineated by Marxist theory, and it is totally superfluous for the workers (let alone the peasants or middle class people) to have any determining role in the matter. Insofar as specific decisions need to be made that are not explicitly outlined in Marxist theory, Marxists believe that they can decide what needs to be done, not democratically, but theoretically, by deducing it from the general tenets of Marxism, as they might be applied in the concrete circumstances in which Marxists find themselves.

This is why Marxist-led revolutions, wherever they have taken place, have never entailed allowing the actual makers of those revolutions, the workers and/or peasants, to make the substantive decisions about what their revolutionary societies are going to look like, but have quickly devolved into attempts to impose Marxism-derived models by persuasion, if possible, and by force, if necessary. At best, the mass democratic institutions that have been created in revolutionary upheavals have been viewed by Marxists as levers or transmission belts through which to carry out, and ultimately to impose, their decisions. As a corollary, this is why the central economic planning that Marxists have established in the societies over which they have ruled has never entailed the members of those societies, the supposed "associated producers," actually doing the planning themselves (based on a democratic discussion of their needs and of their differing perspectives about the direction of society). On the contrary, Marxist planning has always meant planning by economic "experts," operating under the political direction of a Marxist elite. (This, in turn, helps to explain why such planning was ultimately a failure. While achieving considerable successes in the early stages of industrialization - although at the cost of tremendous waste, of both material resources and human lives - it proved totally incapable of managing a technologically advanced society - incapable, specifically, of generating new technology and of providing a broad variety of high quality consumer goods. It did prove quite capable, however, of despoiling the environment to an unbelievable degree.) Finally, this is why Marxists see all other leftists, both non-Marxists and those Marxists with whom they disagree (and who are therefore not true Marxists), as opponents who must ultimately come to agree with them or be suppressed. Although from the Marxist (and Hegelian) standpoint, such Marxist dictatorships might be conceived to be free, they are not free from the standpoint of anybody else.

THE TYRANNY OF THEORY

At bottom, the totalitarian thrust of Marxism resides in its belief that the universe in all its facets inorganic, organic, and human/social — can be encompassed within, and accurately represented by, one logically coherent worldview or philosophy. This view is based on the conception that the universe, at bottom, is logical, that it conforms to and embodies a unified logical structure, and that this logic is discernible to and understandable by human beings. The philosophies of Hegel, on one hand, and of Marx and Engels, on the other, are attempts by these thinkers to describe this logical structure. Hegel's philosophy is explicit; to him, the underlying reality of the cosmos is logical, Ideal, although the logic it embodies is not the mechanical, syllogistic logic of ordinary human understanding, but a dialectical one. Marx and Engels were not satisfied with the explicitly Idealist nature of Hegel's theory and recast it in superficially materialist and scientific terms. But beneath the materialist facade, the Hegelian Idealist structure remains. It is this combination of Hegelian structure and materialist cover that explains why Marx and Engels saw socialism/communism as arising inevitably out of the internal (dialectical) contradictions of capitalism, and why they described their socialism as "scientific."

Hegel, Marx, and Engels were certainly not alone in attempting to achieve this philosophical, and ultimately rationalist, project; many philosophers, certainly those in the Western tradition, have shared the same assumption and have attempted to solve the same puzzle. And, consistent with this view, most of them consider their philosophies to be true and all other philosophies to be false. In this sense, these philosophies are totalitarian. But the question of whether this assumption — that the universe is ultimately logical and can be accurately represented by a unified, logically coherent philosophy - is correct and whether any of these philosophies are true or not, cannot be answered. It is certainly not answerable by science, contrary to what Marx and Engels may have thought, since science operates on and within its own philosophical assumptions, which themselves are not subject to proof. I personally believe the assumption is incorrect and that these philosophies are false. (There is also good reason to think that no system of logic is itself fully logical or consistent. According to the theorem of mathematician Kurt Godel, all systems of logic, those of mathematics or any other, will always be inconsistent, incomplete, or both.) I also believe that philosophies that purport to encompass all of reality within a logically consistent system can result only in attempts to conceptually cram all aspects of reality into their logically coherent structures even if some aspects do not comfortably fit. And when holders of such philosophies attempt to carry them out in practice, to apply them in the real world on a society-wide scale through the use of the state, such attempts lead to totalitarian results. When, given the opportunity and the means, e.g., control of dictatorial states, to try to carry out their program, these totalitarian rationalists attempt to force reality, including human beings, with their competing interests and their infinitely varied consciousnesses and personalities, to conform to the logic of their theories and to suppress, exterminate or otherwise eliminate all aspects of reality that do not so conform. This, to my mind, explains the actual, practical, results of Marxist-led revolutions.

In contrast to such a view, I believe the universe is too complicated, too vast in its dimensions (from the very small to the immense, from the inorganic to the human) and too complex in its workings to ever be fully understandable by human beings, let alone reduced to one logically-consistent picture. Moreover, I think it is the height of arrogance to believe it can. Despite this, I expect many, even most, scientists, philosophers, and religious thinkers will continue to search for, or believe they have found, the supposedly final, ultimately true, world view (some physicists are currently looking for the "theory of everything"). Perhaps this is inevitable. Perhaps it is the (dialectical) nature of human thought to continue to search for certainty, and to believe, at any given moment, that it has found it, only to be doomed eventually to discover that this is not the case. This certainly seems to describe the history of science. But it is a philosophical position that, under certain circumstances, can become extremely dangerous.

Marxism's totalitarian monism is obscured and motivated by a glorified, and ultimately inaccurate, view of science. It simultaneously elevates the natural sciences, particularly physics, to the status of model for all the sciences and conceives of the "laws of nature" as iron-clad structures that inhere in reality and strictly determine the behavior of everything in the universe. When applied to the social realm — economic, politics, history — such a faulty conception implies that social reality is subject to similar laws, and that, as a result, social reality — the behavior and consciousness of all human beings — is, at bottom, totally determined and hence predictable. It is because of this that Marxism insists that it has discovered, scientifically, the ultimate structure, meaning, and goal of history. It contends that this goal is the establishment of a certain kind of society, communism, which can only be established through a form of the state it calls the "dictatorship of the proletariat." It insists that this communist society, based on the nationalized means of production and economic planning, will be a truly free society, a society in which humanity, both as a species and as individuals, will be free to determine their destinies. Finally, it insists that this is the inevitable – logical and necessary – outcome of what it calls the "laws of history," in other words, that communism – and therefore, freedom itself – is determined.

But if communism is, in fact, determined, if it is the inevitable necessary and logical — outcome of history, then, as I see it, it will not and cannot be a truly free society. Freedom, to me, must include the freedom to choose, both on the part of human individuals and on the part of the human species as a whole. Consequently, a truly free society can be only one that human beings truly choose and truly create. In other words, human beings must be able to decide not only the precise structure and forms of such a society, but also whether even to establish such a society. In other words, if such a society is to be free, humanity must have the freedom not to create it, if it so decides. To put this negatively, a truly free a society cannot be determined; it cannot be inevitable; it cannot be the necessary and logical end result of history. A society that is the inevitable — logical and necessary — outcome of history (if history is, in fact, determined) may have the forms, the outer shell, the accoutrements, of a free society, but it will not be a free society.

Contrary to Marxism's claim, we do not know what will happen in history. We do not know if humanity will create a free - a truly egalitarian, cooperative, and democratic - society. We do not even know whether humanity is capable of creating such a society. And we do not know whether history is determined (and if it is determined, what it is precisely that is determined) or open. Nobody knows the answers to these questions; they have never been answered scientifically, and they never will be answered scientifically. What we can say is that if there is to be even the possibility of humanity creating a truly free society, then freedom must exist, as a potential - that is, ontologically - in history and in the cosmos. But we do not, and cannot, know that this is the case. For those of us who advocate a free society, we have to hope that it is, to act on this assumption, and to take responsibility for our actions.

A truly free society, then, cannot be inevitable, the result of inexorable laws; it cannot be "scientifically" ordained. If it is to happen, a free society must be a choice, a choice facing all of humanity, the entire human species. In other words, it must be a consciously willed decision, a moral or ethical goal. Or, as another great Russian writer, Fyodor Dostoyevsky, put it in his *Winter Notes on Summer Impressions*, "There must be a change of heart."

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