LENIN'S THEORY OF REFLECTION

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INTRODUCTION

The subject of this study is Lenin's theory of cognitive "reflection." Essentially, this theory consists of two assertions: (1) a world exists "independent" of and "external" to consciousness, and (2) knowledge consists of approximately faithful "reflections" of that world in consciousness. These simple observations are fundamental to Marxist-Leninist theory of knowledge, not only as basic assumptions but also as key principles frequently employed to criticise rival epistemologies and to derive solutions for particular questions of logic, semantics, scientific methodology, and philosophy. Both the significance and to a great extent the meaning of the theory of reflection therefore depend on the functions of the theory, and we shall see that when these functions changed in contemporary Soviet philosophy, so did the content of the theory. Furthermore, the vagueness of the second assertion mentioned above makes it possible to interpret the theory of reflection in several significantly different ways. In Lenin's Materialism and Empirio-Criticism [hereafter abbreviated as MEC],[1] where the theory is first formulated, one can find "reflection" treated as a mechanical mirroring of objects in sensory "images" and also in contrast, as a complex process of cognition arising from the dialectical contradictions of naive realism. In current Soviet epistemology, on the other hand, cognitive reflection is interpreted as a development of dialectical reason, and in arguing for this interpretation, Soviet writers neglect Lenin's attempts in MEC to ground cognition in naive realism, and reject-

implicitly - his suggestions that objective reality is mirrored by sensation.

To recover the meaning of the Leninist theory of reflection, our study will therefore attempt to characterize the theory in terms of these interpretations and the functions they assign to it. We are also interested, however, in understanding the theory as an idea with a history, for one of its most significant features is its capacity to develop itself and thereby enable dialectical materialism to meet the varying scientific and philosophic challenges of the twentieth century. Because of the limits of our study, we restrict our historical account of the theory to explanations for the contrasts between the initial forms of the theory and the form it now possesses in selected writings by Soviet philosophers.

In Marxist terms, what we hope to do in combining these analytical and historical views of our subject is to characterize the theory of reflection as a Leninist "line" in epistemology, i.e., a tendency that changes and develops but that does so because of the way Lenin originally set it going.[2] We wish to understand, in other words, how a consistent Marxist-Leninist would today conceptualize the Leninist theory of reflection and evaluate its future possibilities. Such an understanding, however, could not come from mere analysis or history. What is required is an act, viz., the sharing of the humanly significant perspective or "way of seeing" the Marxist-Leninist would use in developing Lenin's theory. (We initially assume, of course, that there is such a perspective in Marxist-Leninist thought since we could not determine that it does not exist, unless we first tried to discover and use it.) Our

analysis and historical accounts, therefore, serve only to prepare the way for this act of intellectual sympathy, and our critical comments, only to stimule and direct the act. At the same time, although we are thus attempting to share the perspective used by Marxist-Leninists, we do not assume that they use this perspective consciously or well, nor do we assume that it is the "best" or most decisive of all humanly significant perspectives.

This approach to history of philosophy is an application of principles stated by Freidrich Waismann in his article, "How I See Philosophy." Waismann describes the "essential difference" between philosophy and logic as follows:

> . . . logic constrains us while philosophy leaves us free: in a philosophic discussion we are led, step by step, to change our angle of vision. e.g., to pass from one way of putting a question to another, and this with our spontaneous agreement - a thing profoundly different from deducing theorems from a given set of premises.[3]

Elsewhere he expresses the difference as that "between drawing a conclusion and seeing, or making one see, a new aspect." The success of philosophy is thus not a matter of establishing particular points of truth, but of effecting "a change in our whole mental outlook so that, as a result of that, myriads of such little points are brought into view or turned out of sight, as the case may be."[4] Philosophy, in brief, is "vision."[5]

To recover the meaning of Lenin's theory of reflection as philosophy, then, requires that we "look out" on the world as the people do for whom that is a vital doctrine. This is an act of sympathy, not of judgment. Once we perform that act, however, we may find, by means of our new way of "seeing," a subject matter in which we can discover significant information capable of confirmation by an appropriate system of judgment. This is the experience, for example, of one who finally agrees to look at colors, listen

to sounds, or consider human suffering, without regard for his practical self-interests; or of the medieval bishop who finally consents to look through a telescope. Whether the perspective is itself significant and informative rather than, for example, merely the effect of a drug is quite another question. In any event, we shall attempt to show that the perspective which makes Lenin's theory of reflection "philosophy," in Waismann's sense of the word, and which accounts for the viability of that theory in Marxist-Leninist epistemology, is the standpoint of the "naive believer." We shall also argue that to preserve its integrity Soviet philosophy needs to recognize its origins in this standpoint and to explain its present attempt to transcend naive realism as a necessity imposed by the dialectic of naive realism itself.

In the first three chapters of this study, we focus upon the theory of reflection as it is first expressed in MEC. Chapter I discusses the historical context of that work, and chapters II and III consider the grounds and characteristics of the theory of reflection that is developed there. At the end of chapter III, we consider two possible interpretations of the theory as it is found in MEC and introduce a third, namely, that of current Soviet epistemology. The remaining chapters are devoted to this third interpretation. Chapter IV describes its historical context and sets forth four main issues in terms of which Soviet epistemology develops its version of the theory of reflection. Chapters V through VIII discuss these issues in detail. Chapter VIII also presents the leading conclusions of our study.

Finally, we call attention to the fact that criticism by Lenin and his followers of "positivism" and "neopositivism" has been considered only

insofar as it illuminates the concept of cognitive reflection they seem to hold. Despite this limitation, a good deal of space has had to be assigned to discussion of this criticism since their attacks on positivits often sharply expose their theoretical assumptions. We do not wish to create the impression, however, that the length of this discussion indicates an attempt to review or evaluate such Marxist-Leninist criticism in its entirety.

I

THE HISTORICAL CONTEXT OF MATERIALISM AND EMPIRIO-CRITICISM

In this chapter, we shall try to provide an account of the historical background of MEC which would be acceptable to a Leninist, and yet objective enough to satisfy contemporary scholarly critics of Marxism such as Bochenski, Jordan, and Wetter. This is in accord with our decision to work for an understanding of Lenin's theory of reflection by viewing it sympathetically but without commitment. To produce such an account, we have synthesized descriptions of the background found in the "Notes" supplied by a recent Soviet-approved edition of MEC, Wetter's Dialectical Materialism, Bochenski's Contemporary European Philosophy, Jordan's Philosophy and Ideology, Simon's European Positivism in the Nineteenth Century, and Lenin's own descriptions found in the basic edition of MEC (International Publishers, 1927) generally used in this study.[1]

For Lenin, the history of nineteenth-century philosophy on the continent is largely a record of attempts to answer or defend Kant, especially in regard to two theses: (1) knowledge depends on conditions imposed by the very nature of thought, and (2) there are "things-in-themselves" which in principle are unknowable. The romantics, exploiting the implication of the first thesis that consciousness somehow creates knowledge, found their most articulate and radical spokesman in Hegel. Goint so far beyond Kant that he is as much Kant's antithesis as he is Kant's heir, Hegel made the creative consciousness begin at the point which

Kant said it could never legitimately reach, i.e., the Idea of God, or as translated into Hegel's system, the Absolute Idea. Hegel also rejected Kant's limiting of creative consciousness to human being as distinct from being in general; for Hegel "what is real (actual) is rational; what is rational is real (actual)." Denying that there is any insuperable barrier between consciousness and being or reality, Hegel accounts for the latter as the "otherness" which the absolute Idea must posit in order to realize itself; or in terms of the appearances constituting science, Nature and human history manifest the "becoming" of Spirit according to the pattern of dialectical development. Marx and Engels then offered their philosophy as the antithesis of Hegel's by arguing that Spirit (now redefined again as human consciousness) and human history manifest the "becoming" of Nature according to the pattern of dialectical development. Engels puts it this way:

> This ideological perversion [of Hegel's] had to be done away with. 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 the absolute concept . . . . Thereby the dialectic of concepts itself became merely the conscious reflex of the dialectical motion of the real world and thus the dialectic of Hegel was placed upon its head; or rather, turned off its head, on which it was standing, and placed upon its feet.[2]

But Marx and Engels also held their philosophy to be related to Hegel's as a synthesis since it preserves Hegel's insights into the laws of dialectics, whereas Feuerbach's failure to appreciate these insights makes his "inverted Hegelianism" merely an antithesis and prevents him from being able to defend materialism adequately, a defense which requires the standpoint of dialectical materialism.

The second Kantian thesis - that there are "things-in-themselves" which in principle are unknowable - led to another line of development.

One group agreed that there are "things-in-themselves" but insisted that they were knowable. This group included Feuerbach, Albrecht Rau, Marx, Engels, Büchner, Vogt, Moleschott and Dühring (the last four Lenin says are "pygmies and wretched bunglers compared with Feuerbach.")[3] These are the German materialists who according to Lenin were thereby developing their criticism of Kantianism "from the Left."[4] A far more influential group are those who Lenin said developed their criticism of Kantianism "from the Right" by denying that there are such entities as "things-in-themselves" existing independently of consciousness. Strictly speaking this group would include Hegel, but Lenin refers specifically only to the Humean agnostic Schulze-Aenesidemus, the subjective idealist J.G. Fichte, the immanentists such as Leclair and Johannes Rehmke, and the "comrades-in-arms" of these philosophers, the empirio-criticists Avenarius and Mach.[5] Apparently, what Lenin has in mind are those who deny "things-in-themselves" to emphasize the subjectivity of knowledge, and Hegel though an idealist is an objective one. The subjectivist line they apply to Kant is that having made consciousness his starting point, Kant was inconsistent in introducing what he says cannot possibly be known by consciousness, viz., noumena or things-in-themselves; he would have been true to the facts and to himself if he had rather said that we only know what is given in experience and that this "given" cannot include anything existing outside the mind; i.e., the "given" must be merely "impressions," "sensations," "sense-data," "phenomena," "elements," etc., according to the varying subjectivist formulations. Lenin points out that this line of criticism is essentially a reactionary reversion to Humean agnosticism, a position which he declares was fully refuted by Kant and Hegel, and that

consequently empirio-criticism and its allies both stand apart from and oppose the dialectical development of philosophy, specifically, as described in the preceding paragraph.

But why has this reaction occurred and why is it presented as a new development deserving special nomenclatures? To find the adequate cause for this phenomenon, says Lenin, we must turn to the clerical interests who dominate the philosophy departments of European universities - just as capitalist interests dominate university departments of political economy. These interests seek to take advantage of the crisis that has arisen in modern physical science by deriving from it arguments to emasculate the one philosophy which makes theism utterly impossible, viz. materialism. Such arguments will be welcomed by the church party whatever their source. Thus it encourages "non-partisan" or even frankly agnostic philosophy of science if this will only weaken the case for materialism and thereby make it possible for faith to settle what reason cannot.

According to Lenin, the crisis in physics which fideism seeks to exploit is the breakdown of mechanical or "metaphysical" materialism in the face of discoveries about energy, especially the discovery of the law of the conservation and transformation of energy, and the development of an electromagnetic concept of the atom. Because of this new knowledge, the old materialist picture of the world as a combination of little pellets of matter had to be rejected and physicists were encouraged to speculate about the "disappearance of matter."[6] More important, however, was the fact that these discoveries upset what used to be considered absolutely final physical laws and thereby made men realize that knowledge is in some

"relative." The question of exactly in what sense knowledge is relative gave rise to philosophical interpretations making knowledge relative to the interests, questions, physiology, "experience," and so on, of observers, i.e., relative to ultimately subjective factors. Furthermore, the whole question of "necessity" and "objectivity" as components of causality and natural law, raised by Hume only in the context of philosophical inquiry, now seemed to be raised again by the development of science itself. For Lenin, all these apparent consequences of scientific progress could be dissolved or explained by dialectical materialism. Directing themselves only to mechanical materialism, however, the anti-materialists used them to build a philosophy of science known broadly as "empirio-criticism," the architects of which were Richard Avenarius and Ernest Mach, and it is the epistemology of these men as adopted by a group of Russian Marxists which is the chief target of Lenin's MEC.

Lenin takes Mach rather than Avenarius as the leading representative of empirio-criticism. The distinctive feature of Mach's epistemology is that it tries to make unnecessary a distinction between phenomena and noumena, or appearance and reality, by explaining the difference between physical and mental entities to be a difference of attention paid to the contents of immediate experience. Before being separated by attention, these contents are merely "elements"; when considered as they exist in pure experience, these "elements" and their combinations are recognized as sensations and sensation-complexes; when considered as referring to the body and the external world, they are thought of as physical objects. But full analysis shows that physical bodies can be no more than complexes of sense-data; thus being is always a function of sensation. Further criticism of experience then reveals that concepts which refer to what is

beyond sensation can only be justified as useful symbols or working hypotheses. The concepts of "cause" and "matter" are thus reduced to useful fictions; "truth" becomes relative to observers; and "laws" become descriptions of experience according to the principle of economy.[7] In his major works, The Analysis of Sensations and Knowledge and Error, Mach presents these views as attempts to meet the needs for a theory of knowledge which have been created by the new developments in physical and physiological science.

Though denying he is a "Machian," A. A. Bogdanov, a leading Russian Marxist, developed Mach's views into a system he called "empirio-monism" which presumably remedied Mach's failure to eliminate completely the dualism of the physical and mental by showing more clearly how these phenomena belong to the same experience, the "mental" being simply experience as "organized" by individuals, and the "physical," experience as organized socially. Otherwise Mach's basic theses and point of view are preserved and emphasized by Bogdanov.[8] The influence and popularity of Bogdanov's major work, Empirio-Monism, may be suggested by the fact that the first edition was soon followed by a second in 1905, and in 1908, the year of Lenin's MEC, a third edition appeared.[9] In the Preface to the first edition of MEC in 1908, Lenin lists four other Marxist-Machist works published that year in Russia: the collection Studies in the Philosophy of Marxism, "first and foremost" of them; P. Yushkevich, Materialism and Critical Realism; Y. Berman, Dialectics in the Light of the Modern Theory of Knowledge; and N. Valentinov, The Philosophical Constructions of Marxism.

Some of the views of these Marxist-Machists which in his Preface

to the first edition Lenin sarcastically says are made possible by the "philosophy of modern natural science" include Berman's pronouncement that Engels' dialectics is "mysticism"; V. Bazarov's discovery that Engels is "antiquated;" and A. Lunacharsky's "downright fideism." Later he paraphrases them as arguing as follows:

> The materialists lapse into 'Kantianism' (Plekhanov, by recognizing the existence of 'things-in-themselves,' i.e., things outside of our consciousness); they 'duplicate' the world and preach 'dualism,' for the materialists hold that beyond the appearance there is the thing-in-itself; beyond the immediate sense data there is something else, some fetish, an 'idol,' an absolute, a source of 'metaphysics,' a double of religion ('holy matter,' as Bazarov says.)[10]

It is this question of the existence and knowability of the "thing-in-itself" which is the key issue. The Marxist-Machists, in taking the negative, principally direct their attacks against Plekhanov whose crude views they represented as typical of materialism.[11] They also try to make Engels appear to agree with Mach by means of what Lenin calls false interpretations of Engels' Anti-Duhring, according to which Engels unqualifiedly denied the existence of things-in-themselves and eternal truths and argued for the total relativity of knowledge.[12] Furthermore, most of these writers declare that their introduction of Machism into Marxism does not at all change the essence of Marxism. Thus, in addition to refuting Machism, Lenin has the job of showing these men that they have seriously misunderstood and misrepresented the epistemology of Marxism; as we shall see, it is this second task which is the primary one for Lenin's MEC. What he wishes to show most clearly is that despite their claims of being anti-idealist and anti-religious, Marxist-Machists are actually "ensnared in idealism, that is, in a diluted and subtle fideism," and they became so from the "moment they took 'sensation' not as the image

of the external world but as a special 'element'."[13] The central thesis of the MEC, hammered repeatedly throughout the work, is that in genuine Marxism, sensations are the images of objects existing independently of, and external to consciousness.

II

"NAIVE BELIEF" AND LENIN'S EPISTEMOLOGY

In the history of Marxist criticism of the various forms of epistemological positivism, Lenin's Materialism and Empirio-Criticism (abbreviated as MEC) is seminal in at least six respects. First, it is the fullest statement of epistemological theory to be found in the classics of Marxism-Leninism, and so provides an arsenal for all Marxist-Leninist epistemologists whatever foe they may be battling. Second, in the Marxist classics, it is the most extensive criticism of Mach and Avenarius whose basic point-of-view, according to later followers of Lenin, is a principal source of logical positivism and what they term contemporary Western "neopositivism." Third, no serious Marxist criticism of positivism seems to have been written in the Soviet Union or elsewhere following the publication of MEC which has not had to define itself in terms of that work. Fourth, whatever Lenin might have actually meant in MEC, his followers present their contributions to epistemology as "developments" of the line it lays down. Fifth, opponents of Marxist epistemology also take MEC as the basic target for their criticisms. And finally sixth, basic to MEC and at the center of all the attempts to defend, develop, or attack that work and what it historically represents is what Lenin calls a Bildertheorie or "theory of reflection," on the soundness of which Marxist-Leninist philosophy qua philosophy stands or falls.

The purpose of the first two chapters of this thesis is to present that theory of reflection in a way that will advance understanding of its potential cogency and the features of this theory that are later altered and developed in contemporary Soviet epistemology. In finding that way, we are faced with two immediate obstacles. In the first place, Lenin's statements on reflection or knowledge are scattered and heavily colored by highly specific rhetorical considerations. To make sense of them as a theory requires careful sifting, organizing, and interpreting of materials, in the process of which, of course, one faces the constant danger of distorting Lenin's intentions or missing significant connections. Secondly, we naturally approach this theory from the standpoint of non-Marxist traditions in Western philosophy, specifically those which began with Descartes' decision to use consciousness instead of nature as the ultimate starting point for philosophic inquiry. Marx, Engels, and Lenin have made precisely the opposite decision. It is therefore extremely difficult to share their epistemological view sympathetically and especially not to regard its basic simplicity as merely simple-mindedness.

Making the second obstacle our initial concern, we may take as a case in point the voluminous work, Philosophy and Ideology by Z. A. Jordan, published in 1963 under the direction of J. M. Bochenski's Institute of East-European Studies at the University of Fribourg. This seemingly authoritative though explicitly anti-Marxist account of the struggle between Marxism and non-Marxism in Poland devotes, naturally enough, considerable space to an exposition and refutation of Lenin's theory of knowledge as expressed in MEC. We shall not review here Jordan's full treatment of Lenin, but we will note the basis for Jordan's rejecting the central thesis

of Lenin's theory of reflection, namely, that sensations and ideas approximately reflect objective reality. In brief, what Jordan does is to interpret Lenin's term "reflection" as meaning "mirror-reflection" and then to argue that we could never know that our ideas and sensations are ever mirror-images of things outside us. This is a common approach of critics of Lenin. We will first establish the fact that Jordan does indeed make this interpretation of Lenin and then we shall show that though it applies to isolated passages in MEC, there are other passages and positions in MEC which present a very different view of "reflection." Following sections of this chapter will then characterize this second view and indicate the grounds for its plausibility. (Unfortunately, in reviewing Jordan's account of Lenin we will have to anticipate a few critically important features of Lenin's epistemology which can be adequately apprehended only later after we have prepared a way for them. But the reader should bear in mind that our main purpose here is not to discuss Lenin, but to present and test Jordan's interpretation of "reflection" as the key term in Lenin's theory of knowledge).

In discussing Jordan's interpretation of Lenin's intentions, we should first note that it is often difficult to tell whether Jordan is reporting what Lenin actually intended to say or what Lenin said "in effect." Examples are Jordan's declarations that "a Marxist-Leninist materialist has to reject any limitations on the likeness or similarity or coincidence of knowledge and reality,"[1] and that according to Lenin's "naive realistic view" of epistemology," the bits and pieces of matter given us in sensation comprise the sensed colours, smells, flavours, and so forth, as their qualities."[2] Probably these interpretations are

Jordan's attempts to reduce to absurdity Lenin's basic thesis that consciousness reflects objective reality, but they also might be read as stating positions actually derived by Lenin from his conceiving ideas and sensations to be "mirror-reflections." There is no doubt, however, that at least Jordan ascribes this conception of "mirror-reflections" to Lenin. He cites Lenin's own words to describe sensations and concepts, viz., " 'copies, photographs, images, mirror-reflections of things';"[3] he repeatedly refers to "sensations conceived as mirror-like reflections of objects";[4] and he treats Adam Schaff's metaphorical interpretation of "reflection" as a "revision" of Lenin's "original theory of perception."[5] But the strongest evidence that Jordan regards Lenin's use of the words "image," "photograph," and "mirror-reflection" literally rather than metaphorically, is his previously noted argument that if Lenin's "copy theory is right, we perceive only images or copies of things and never the things themselves" and are therefore in no position to determine whether the copies are faithful to their originals.[6]

What justification is there for this interpretation of Lenin? Does he indeed always mean by the "reflection" of an object in perception something closely analogous to the reflection of an object in a mirror? And if on occasion he did use "reflection" in this way, is understanding that usage the key to understanding and judging Lenin's theory of reflection as a whole? Certainly there are many passages in MEC which appear to justify Jordan's interpretation, if not the importance Jordan places upon it. As Jordan pointed out, a Soviet-approved English translation of MEC has Lenin explicitly referring to perceptions as "mirror-reflections of things" and as "photographs."[7] These references, however, do not decide the question. In the first place, Jordan is simply wrong in re-

garding the translated expression "mirror-reflections" as a term Lenin always intended to be taken literally. In the passage where it occurs, Lenin is reporting Engels' words, and early in the book, Lenin criticises Chernov for making that very translation and interpretation of Engels' term Spiegelbild:

> Mr. V. Chernov translates the word Spiegelbild literally (a mirror reflection), accusing Plekhanov of presenting the theory of Engels "in a very weakened form" by speaking in Russian simply of a "reflection" instead of a "mirror reflection." This is mere cavilling. Spiegelbild in German is also used simply in the sense of Abbild.[8]

Lenin adds this footnote as a justification for translating Spiegelbild merely as "reflection" in quoting Engels' formulation of the "basic philosophical question," namely, " 'Are we able in our ideas and notions of the real world, to produce a correct reflection of reality'?"[9] The most we can conclude, therefore, from the occurrence of "mirror-reflection" in the passage cited by Jordan is that Lenin nodded; a more likely explanation is that ambiguities obscured the translating of German through Russian into English.

The previously cited footnote clearly indicates that Lenin does not intend us to interpret "reflection" literally whenever he uses the term - and that restriction would seem also to apply to appositives for this term such as "photograph," "copy," and "image." Elsewhere he declares explicitly that "it is beyond doubt that an image cannot wholly resemble the model,"[10] and in his descriptions of how natural science explains the sensations of colours, he has a practical awareness of the difference between them and the "other vibrations" he says they "reflect."[11] He also declares his agreement with Feuerbach's argument that sensations cannot constitute the objects sensed since there are sensations caused by

objects, which sensations do not correspond to objective properties, the taste of saltiness, for example, not being an objective property of salt.[12] As applied to sensations, the words "reflection," "image," etc., are thus not performing here as they do when applied to mirrors and cameras.

But if we have difficulty thinking of sensations as light reflections, how much more difficult it is to think in this way of ideas, theories, and the mind in general! Yet Lenin says materialism holds that "sensation, perception, idea, and the mind of man generally, is regarded as an image of objective reality;"[13] he declares that "the recognition of theory as a copy, as an approximate copy of objective reality, is materialism"[14] and these propositions are repeated throughout MEC. Furthermore, in Marxist literature generally, one finds the word "reflect" used to express social, economic, and technological relations of the profoundest generality which for Marxists are so far from being explicable in terms of cameras and mirrors, that if one were to attempt such explication he would be immediately censured by the Marxists for "mechanical materialism."

Not only, however, does Lenin not in fact always intend the literal meaning of "reflection" Jordan imputes to him; he is forbidden from using the word that way by the very nature of materialism. What would follow, for example, from arguing that man's ideas of purpose, law, and order reflect closely corresponding counter-parts in nature? This would concede a crucial premise in the argument from design and thus prepare the way for fideism, the mortal enemy of materialism. To prevent that possibility, Lenin quotes Feuerbach who, in Essense of Religion, argues

that

> . . . nature may be conceived only through nature itself, that its necessity is neither human nor logical, neither metaphysical nor mathematical, that nature alone is the being to which it is impossible to apply any human measure, although we compare and give names to its phenomena, in order to make them comprehensible to us, and in general apply human expressions and conceptions to them, as for example: order, purpose, law; and are obliged to do so because of the character of our language.

In defending this passage against a critic, Feuerbach, again supported by Lenin, explains that he is not asserting "that there is actually nothing in nature corresponding to the words or ideas of order, purpose, law;" these words have "objective content," but "a distinction must be made between the original and the translation. Order, purpose, law in the human sense express something arbitrary," and applied to nature in this human sense enable the theists to make their case for a divine creator.[15]

The doctrine of historical materialism would also be threatened by a literal interpretation of "reflection." As Lenin points out, an axiom of this doctrine is Marx's teaching that "social consciousness reflects social being." But if "reflects" is interpreted to mean "strictly corresponds to" then a Marxist would obviously have grave difficulties in identifying social ideas that economic-technological conditions require to be changed (such ideas would have to be non-consciousness). The Marxist-Machian Bogdanov advanced just such an interpretation in its strongest form, viz.: " '<u>Social being and social consciousness are, in the exact meaning of these terms, identical</u>'."[16] Lenin strongly objects:

> A reflection may be an approximately true copy of the reflected, but to speak of identity is absurd. Consciousness in general <u>reflects</u> being - that is a general principle of <u>all</u> materialism. It is impossible not to see its direct and <u>inseparable</u> connection with the principle of historical materialism: social consciousness <u>reflects</u> social being.[17]

Lenin further points out that a similar thesis provides the basis for the "reactionary" immanentist Schubert-Soldern's attempts to refute Marx.[18]

Indeed, the whole basis of materialist epistemology is denied when one asserts the equivalence of perception and thing perceived. In fact, a central purpose of MEC is to make Russian Machian-Marxists who were asserting that equivalence aware of just this consequence. Lenin repeatedly declares that Bazarov's formula, " 'sense perception is the reality outside us'," leads to subjective idealism and impotency in the face of fideism and political reaction.[19]

We might record here a further set of limitations on the degree of correspondence suggested by the term "reflection" in Lenin's system. For Marx, Engels, and Lenin --- as indeed, also for Kant --- the character of objective reality is such that man's organs of sensation and thought are able to apprehend it only partially and knowledge of it advances by degree of disclosure rather than by accumulation of fixed, absolute truths.

At stake here is the question of the dialectical relations between "absolute" and "relative" knowledge, and consideration of this subtle issue is best left to a later section of our study. We should note, however, two particular comments of Lenin relevant to the problem of the limits of human understanding. Summarizing Engels' views on causality, Lenin says that "the human conception of cause and effect always somewhat simplifies the objective connection of the phenomena of nature, reflecting it only approximately, artificially isolating one or another aspect of a single world process."[20] Lenin also stresses the inadequacy of man's cognition faculties in this description of dialectical materialism:

> But dialectical materialism insists on the approximate, relative character of every scientific theory of the structure of matter and its properties;

> it insists on the absence of absolute boundaries in nature, on the transformation of moving matter from one state into another, which is to us apparently irreconcilable with it, and so forth.

However "strange," "bizzare," "extraordinary" the new discoveries of science may sound to us, "all this is but another corroboration of dialectical materialism."[21] How far we are now from the notion of consciousness as a "mirror-reflection" of being! Here he is clearly suggesting that there is not a mechanical correspondence between consciousness and being, but what Marxists would call a "contradiction." And consider the terms used to describe Marxist dialectics or the "laws of thought": "unity of opposites" and "contradiction" normally signify what the mind cannot accept as truth, but Marxist-Hegelian dialectics deliberately shocks our normal expectations by using these terms to describe what we must accept as truth. At the deeper levels of Marxist thought, the paradigm of the relation held to exist between consciousness and being is obviously much more like a paradox than a mirror-reflection; if we insist on the latter, then we must think of a mirror which somehow opposes, "contradicts," or even conflicts with its object; which gives non-visual as well as visual pictures that are effects qualitatively distinct from its causes; and which nevertheless in principle provide "approximately" faithful reproductions, though the mirror knows it can never do a perfect job. The comparison is obviously absurd. Using it, Jordan has no trouble dispensing with Lenin, but he is hardly doing justice to Lenin's intentions.

In conclusion, for one who wishes to understand the possible cogency of Lenin's theory of reflection, it would seem wiser to approach the meaning of "reflection" and related terms not by analysis of possible

analogies, but through an examination of the theory in which these terms are used. As is evident from the preceding paragraphs, the key to Lenin's theory is not a literal or even a clearly metaphorical interpretation of its leading terms. This situation, of course, could signify that the theory is nonsense. But just as syntax can create meaning out of words which individually are extremely vague and ambiguous, so a theory can create meaning out of terms and statements which in isolation are impossible to translate with fixed senses. Thus, before we give up Lenin's epistemology as a hopeless botch, we should try to see whether the latter possibility applies. This we shall proceed to do, and in the course of exhibiting the system as a whole, the various uses of Lenin's terms may be clarified.

"Naive Belief" as a "Foundation"

Positivists having pre-empted the term "realism," Lenin generally uses instead the term "materialism" to name his general philosophic position. The basis of materialism --- perhaps of any philosophy --- is epistemology, and "materialism deliberately makes the 'naive' belief of mankind the foundation of its theory of knowledge."[22] Lenin characterizes "naive belief" as "the instinctive, unconscious materialist standpoint adopted by humanity, which regards the external world as existing independently of our minds."[23]

How shall we open a way to grasp what Lenin is designating here? Immediately there is a difficulty: if the belief is "instinctive" and "unconscious," how can we experience it "consciously" as such? Yet this would seem what we have to do in considering it philosophically. The dif-

ficulty suggests an important distinction: in exhibiting "naive belief," we can talk (1) as naive believers, or (2) about them. The difference is epistemologically crucial. The sentence, "I see a table there," when spoken from standpoint (1), implies "A table is there;" and that makes it pointless to ask whether a table is there. On the other hand, the sentence "I see a table there," when examined from standpoint (2), can be questioned in many ways, including the questioning of the implication that the table exists. Thus from standpoint (1), we would say that in speaking this sentence we are asserting, not questioning the existence of a table; that our experience is not of an "experience," but is rather a revelation of something there; that we are not sensing an "image" or a "sensation," but a table, etc. When assuming standpoint (2), we cannot take these protests made from standpoint (1) seriously if we are to pursue the questions that give standpoint (2) its significance. The tendency of these two standpoints to vitiate each other's questions and claims might be characterized in Marxist-Hegelian terms as a basic "contradiction" in the cognitive process. For our present purposes, suffice it to say that this tendency creates serious difficulties for interpreters of Lenin's thought, but by being aware of it, we can overcome many of them and eventually, perhaps, gain insight into the basic perspectives of Marxism-Leninism. We might also see that these perspectives, which are for the most part only suggested by the classic formulations of Marxism-Leninism, can make genuine claims on those who can be somehow induced to assume them.

We begin then by considering Lenin's attempts to exhibit naive belief from the standpoint of the believer. This will be our topic for the rest of the chapter. Immediately we must observe that Lenin nearly

always exhibits naive belief by talking about it, even though what he has in mind is naive belief as it is experienced by the believer. This is perhaps excusable. To exhibit naive belief as a naive believer precludes critical examination of that belief as a cognitive process, but in discussing the "theory of knowledge," Lenin obviously must undertake such examination. The result, however, is that Lenin naturally tends to present statements which are sound when made from standpoint (1) in the language appropriate for statements made from standpoint (2), and so involves his presentations in the tendency described above for these standpoints to vitiate each other's claims. Another excuse for Lenin, of course, is that the careful use of language required to control this tendency would be out of place in MEC which is primarily a rhetorical work.

Recognizing then the possibly distorting effect of Lenin's reflective, theory-oriented language, we turn to his attempts to exhibit naive belief through his discussion of "experience."

"Naive Belief" and "Experience"

None of the basic controversies in philosophy can be settled, declares Lenin, through appeal to the ambiguous term, "experience." That was obvious to Engels who "was well aware that the idealist Berkeley, the agnostic Hume and the materialist Diderot all had recourse to experience."[24] Lenin tries to show how the Machians have exploited the ambiguities of the word by invoking its materialist connotations when the idealist and agnostic (sceptical) positions they derive from its subjective connotations lead to solipsism and absurdity. To be a decisive criterion, experience must be characterized, but then we find that "the various 'definitions' of this concept are only expressions of those two

fundamental lines in philosophy [idealism and materialism] which were so strikingly revealed by Engels."[25]

Lenin cites Norman Smith's analysis of a particularly significant Machian equivocation on the word "experience." Avenarius uses the term one time to mean "experiencing" and another to mean "the experience," and by concealing the difference, he is able to argue that since "experience" is the basis of knowledge, there must be an " 'indissoluble' connection between subject and object," and hence that we can have no knowledge of an objective reality which is independent of the mind.[26] Smith points out that this is "the time-worn argument of subjective idealism, that thought and reality are inseparable, because reality can only be conceived in thought, and thought involves the presence of the thinker."[27] Smith and Lenin thus recognize that there is a crucial distinction to be made when we ask what a man experiences: if we ask <u>him</u>, he will refer to "the experienced," i.e., an object; if we ask someone <u>contemplating</u> him, the answer may be that the man experiences "experiencing," e.g., having sensation, entertaining images, "thinking" that he sees something, etc. The answer to the first question made from the standpoint of the experiencer or the naive believer constitutes for Lenin the essential characteristic of experience as the source of existential knowledge. This is what he calls the "human sense of the term" as opposed to the "Machian sense." To it he attributes not only "the conviction that <u>independently</u> of us there exist other people, and not mere complexes of my sensations of high, short, yellow, hard, etc.," but also "the conviction that things, the world, the environment exist independently of us."[28] And conviction is taken here as a sign of realization, not merely a subjective state such as a feeling

of certainty.

The first sort of "conviction" referred to, Lenin probably would specifically ascribe to sensation-experience. Lenin reserves the word "given" to indicate the manner in which, through sensation objects are revealed to men as being there, at hand, ready for use, etc. Whenever he speaks of objects as "given" in sensation, he is always asserting their unquestionable external existence, trying to speak, as we have previously stated, as a naive believer, (though often in language appropriate to standpoint (2).) When he speaks of objects as "reflected" in sensation, he is also asserting their existence but the assertion is frequently an answer, i.e., a result of having entertained for a moment the questionability of that existence. The use of "given," in other words, always indicates that Lenin is trying to designate what sensation means to the naive believer; the use of "reflect" indicates that Lenin is either assuming standpoint (2) and talking about naive belief, and/or describing what a man experiences as a naive believer, especially when Lenin refers to concepts derived from sensation and therefore "reflecting" reality, as for example in the phrase "objective reality is given us in our sensation and reflected in our theories."[29]

The second sort of "conviction" mentioned by Lenin would have to refer, of course, not to sensation-experience but the experience of conceptual-thinking just alluded to, i.e., that of a naive-believer using concepts derived from sensation-"given" things and therefore known as representing (though not pointing to) external reality. Exactly how the naive believer moves from the sensation awareness of particular, external objects to the awareness of an independent "world" and "environment" is

not considered directly by Lenin. In his treatment of space and time, however, he suggest that the independent reality of space and time is part of the very meaning of existence, that we cannot say, for example, "a table is there now" without admitting these general continua.[30] In a similar fashion, Lenin might have argued that we know the existence of "world" or "environment" simply as that in which particular objects are "given" to sensation; this would avoid the difficulties of justifying as an inductive generalization the thesis that the world exists.

The few specific characterizations of experience Lenin offers mainly concern sensation. It is experience as sensation that he has in mind when he approvingly cites the French positivist Rey as follows:

> . . . experience is that over which our mind has no command, that which our desires, our volition, cannot control, that which is given and which is not of our own making. Experience is the object that faces the subject.

Lenin restates and underlines Rey's expression, "Experience is the object."[31] Lenin also tries to clarify what he means by "immediately given" or "factually given" in experience by sorting out the ambiguities of these expressions as follows:

> For the materialist the "factually given" is the outer world, the image of which is our sensations. For the idealist the "factually given" is sensation, and the outer world is declared to be "a complex of sensations." For the agnostic the "immediately given" is also sensation, but the agnostic does not go on either to the materialist recognition of the outer world, or to the idealist recognition of the world as our sensation.[32]

There also may be agreement even between the subjective idealist and the materialist that "the first premise of the theory of knowledge undoubtedly is that the sole source of our knowledge is sensation." But once again differences of interpretation create the division of philosophical "lines":

> Starting from sensations, one may follow the line of subjectivism, which leads to solipsism ("bodies are complexes or combinations of sensations"),

> or the line of objectivism, which leads to materialism (sensations are images of objects, of the external world). For the first point of view, i.e., agnosticism, or, pushed a little further, subjective idealism, there can be no objective truth. For the second point of view, i.e., materialism, the recognition of objective truth is essential.[33]

In making such characterizations, Lenin at times confuses the reader as to his actual intentions. The confusion is largely due to the difficulty we noted of maintaining the distinction between statements made from the standpoint of the naive believer and those made from the standpoint of one who discusses the naive believer. The next sentence of the passage just quoted, for example, refers to materialism as one of "the two possible deductions from the premises of empiricism and sensationalism"; this suggests that men arrive at their belief in the existence of an external world through inference, but that is precisely the thesis Lenin must deny if he is to make the "naive belief of mankind" the "foundation" of his theory of knowledge. Materialism as a "deduction" in Lenin's system can only consistently refer to doctrines which use the naive believer's basic convictions as axioms. A similar confusion occurs in Lenin's statement that "the transformation of the energy of external excitation into a state of consciousness . . . has been, and is, observed by each of us a million times on every hand."[34] No one, of course, has ever seen any such thing; but this statement may be a true <u>interpretation</u> of what we frequently see; i.e., the statement may be true from the standpoint of someone talking about experiencers rather than as an experiencer. The most serious confusion on this score, however, arises from Lenin's use of the term "image." He will frequently imply that men see "images" when he means "objects." Indeed, there are passages in MEC which are so badly confused by this implication that Jordan's criticisms can be applied

to them with full justice; whether they can also be applied to Lenin's theory of reflection as a whole, however, is quite another matter.[35]

Finally, we may note that Lenin's characterizations of sensation are nearly always presented in contrast to those typical of idealist or agnostic trends. The specific reason for this is Lenin's need to "straighten out" some of his comrades who have been attempting to incorporate Machism into Marxism. Marxist-Leninists, however, tend to develop any philosophical issue within the context of polemical dialectics and one of the strongest arguments for a position they offer is that its denial supports the historical development or tendency of idealism --- or the half-way house to idealism, "agnosticism." For someone who simply wants to understand the nature of the "correct" position, the problem, then, is often to proceed from an understanding of what is described as the opposing, idealist-oriented position. Such is the case presented in the following statement:

> The sophism of idealist philosophy consists in the fact that it regards sensation as being not the connection between consciousness and the external world, but as a fence, a wall, separating consciousness from the external world --- not as an image of the external phenomenon corresponding to the sensation, but as the 'sole entity.'[36]

Analysis of this sentence shows it would be a mistake to ask here whether the "connection" provided by sensation denotes literally or metaphorically a physical linkage, a sequence of cause and effect, a mirror medium, etc. For here, the main function of "connection" is not to <u>denote</u> anything, but to <u>deny</u> the idealist thesis that sensation separates consciousness from the external world in such a way that consciousness becomes the only being or existent that can be known --- a thesis which can lead, of course, to fideism, a threat to the whole Marxist program.

An example of how criticism of idealism indirectly affords insight into Lenin's concept of sensation as experience is a passage from Feuerbach cited with strong approval by Lenin. Considering it, we gain a sharper appreciation of the standpoint of the naive believer in which experience is experienced not as reaction to but revelation of external objects. Feuerbach's passage is directed against the idealist Fichte. Feuerbach declares that Fichte displays "the fundamental defect of idealism: it asks and answers the question of objectivity and subjectivity, of the reality or unreality of the world, only from the standpoint of theory," and the "standpoint of theory" of course would include what earlier we termed "standpoint (2)," i.e., the standpoint from which one talks about naive belief. Materialism, says Feuerbach, approaches epistemology from the standpoint of practice; it "makes the sum-total of human practice the basis of the theory of knowledge." This sum-total is the full range of what Lenin called "experience" in the "human sense," in which "objective reality is given in sensation and reflected in theories." Feuerbach's concept of the "standpoint of practice" characterizes the standpoint of the naive believer (what we termed "standpoint (1)"). "Practice" emphasizes the fact that the naive believer lives in the external world he perceives; Feuerbach declares that the idealists, in refusing to "recognize the reality of the I and Thou in practical life," maintain "speculation which contradicts life, which makes the standpoint of death, of a soul separated from the body, the standpoint of truth." Feuerbach gives a vivid illustration of the difference: for a consistent idealist, no distinction could be made between his sensation of orgasm in intercourse and orgasm in masturbation, for to identify subjec-

tive sensation with the objective world "is to identify pollution with procreation."[37]

Throughout all these characterizations of experience as it is experienced, i.e., as naive belief, we see that the emphasis is always on its existential reference. And the existence referred to is always external, independent of desires and perceptions, setting the conditions for life and action. An interesting example of how Lenin uses this interpretation of "experience" is found in his argument against Avenarius' attempt to explain the fact that the earth existed before man. Committed to the thesis that an object cannot exist independently of our consciousness, Avenarius declares, according to Lenin, that we nevertheless apprehend the prior existence of the world by "mentally projecting" ourselves as spectators looking upon an earth devoid of mankind.[38] Lenin replies as follows:

> If we "mentally project" ourselves, our presence will be imaginary - but the existence of the earth prior to man is real. Man could not in practice be an observer, for instance, of the earth in an incandescent state, and to "imagine" his being present at the time is obscurantism, exactly as though I were to endeavour to prove the existence of hell by the argument that if I "mentally projected" myself thither as an observer I could observe hell.[39]

Here the main point is that observation does not confirm statements of the form "p is real" if observation is conceived only in its subjective aspect, i.e., as free of dependence on an externally existing world. Proof of this point is that its denial makes possible the absurd assertion that hell is real. The argument as a whole also suggests that (1) the critical characteristic of "real" is reference to existence which is entirely independent of mind, (2) knowledge that the world existed before man cannot be explained if one holds that we cannot know objects as exist-

ing independently of the mind, and (3) the existential reference of knowledge about pre-human history is explicable only as an extension of the existential reference of naive belief.

In concluding our remarks on Lenin's characterizations of direct experience, we may ask whether Lenin offers any evidence for saying that in this experience is revealed an external, independently existing environment. The answer is that he does not. He insists on this fact as an absolute beginning point. He declares that "it is this sole categorical, this sole unconditional recognition of nature's existence outside the mind and perceptions of man that distinguishes dialectical materialism from relativist agnosticism and idealism."[40] Since the distinguishing mark of dialectical materialism is this "unconditional recognition," it is not surprising, then, that Leninists would not think it "bad" philosophy to argue "for" dialectical materialism simply by asserting it against rival tendencies, for it is absurd to give reasons to prove what must be accepted without reasons, i.e., unconditionally. And Lenin makes it quite clear that reasoning is not applicable to the issue of whether objects independent of the mind are given in experience. He says that "no proofs, syllogisms, or definitions are capable of refuting the solipsist if he consistently adheres to his view."[41] Referring to Diderot's treatment of this issue, he remarks that Diderot "came very close to the standpoint of contemporary materialism (that arguments and syllogisms alone do not suffice to refute idealism, and that here it is not a question for theoretical argument)."[42] And Lenin cites Engels' answer to Hume's sceptical argument:

> Now, this line of reasoning seems undoubtedly hard to beat by mere argumentation. But before there was argumentation there was action. Im Anfang

war die Tat. And human action had solved the difficulty long before human ingenuity invented it.[43]

Such a position may of course be called "dogmatic." If "dogma" connotes a proposition or propositions held to be unquestionably true, then here the term is correctly applied. But what is the source of the unquestionability Engels and Lenin ascribe to the propositions that there is an external world, that it exists independently of man's will, etc.? It is a standpoint or perspective, specifically the standpoint of the naive believer. Upon taking that view, we clearly would say that those propositions are unquestionable; or if one argues that we would not do so, he would still have to appeal ultimately to some other empirical principles held "dogmatically." The only alternative would seem to be to question whether we should take the view of the naive believer, and appeal to "dogma" is not necessary here since one may find it unnecessary or even impossible to settle that question on the basis of propositions or evidence. The possibility of this alternative suggests the real issue: what is at stake is the choice of an action, namely, the action of taking a certain perspective, and this choice, not being a proposition or a statement, cannot be derived from propositions or statements. It would therefore seem more accurate to say that Lenin's fundamental absolutism is due to what Santayana would call an act of faith (in the most general sense of "faith") rather than to simple acceptance of dogma. One significant difference between the two is that an act of faith, though not derivable from inductive or deductive reason, can be shown to be highly reasonable or practical, whereas dogma cannot. And we might note here that Lenin at one point comes very close to recognizing the key role of active faith in his epistemology, though of course he could never say "faith." Stating

the epistemological premises on which Engels bases his views on freedom as control of necessity, Lenin closes his comments by noting that Engels develops these views by using "the salto vitale method in philosophy": i.e., "he makes a leap from theory to practice." Lenin declares sarcastically that this would be "disgraceful for a devotee of 'pure science' "; for professional philosophers who think that the theory of knowledge . . . demands the cunning concoction of definitions," and that "practice" is another thing altogether.[44]

Here a further comment on Jordan is in order. Jordan reads Lenin's treatment of perception as if it were an attempt to justify a theory. He recognizes that in formulating the copy "theory" of perception, Lenin is primarily concerned with defending materialist "metaphysics" from phenomenalist criticism and with "the refutation of idealist theories of knowledge," but Jordan does not add that the audience to be persuaded consists of contemporary Russian Marxists and that consequently the sort of arguments Lenin requires are not at all like those needed to convince the general public.[45] One reason for Jordan's interpretation may be that he thought Lenin should have offered generally acceptable justifications for his position. "The chief aim of the materialist theory of knowledge," says Jordan, "is to provide a rational justification of the belief in the existence of the external world," and Jordan's analysis is designed to test whether Lenin and his followers have achieved this aim.[46] Arguing that the "existence of material objects" cannot be derived as "a logically valid conclusion" from the premises supplied by the copy theory of perception, Jordan concludes that "the basic statement of the materialist theory of knowledge that the 'human mind reflects an

objectively real external world' cannot be considered as satisfactorily proven beyond any reasonable doubt."[47] Lenin fails, says Jordan, because he "did not provide any new arguments that would either logically justify the elimination of the transcendence problem or strengthen the validity of the step that bridges the gap between sense-data and objects."[48] These criticism may or may not be sound. But the impression they convey of Lenin's intentions is that he is in fact trying to make a logical case for an epistemological theory. As we see, that impression is seriously misleading. At times, Jordan makes this interpretation explicit. For example, he says:

> From Lenin's viewpoint the evidence of our senses could not provide a convincing argument to demonstrate the existence of material objects and Lenin was determined to show that the existence of material objects is a demonstrable truth, open to no doubt whatsoever.

Consequently, Jordan continues, Lenin supplemented the copy theory with the "causal theory of perception . . . to supply the missing link between mental images and the external world."[49] In concluding his analysis of Lenin's MEC, Jordan says that "if no logical justification is produced, the belief in the existence of physical things is no theory of knowledge but an epistemological dogma," and that "neither the causal nor the copy theory of perception provide the required justification."[50] Again Jordan makes it appear that Lenin was trying to offer "logical justification." We see now, however, that the most fundamental Leninist position is that acceptance of objective reality is not an application of logic but the <u>ground</u> of it.[51]

III

THE ORIGINAL THEORY OF REFLECTION

We turn now to Lenin's exhibition of naive belief from the standpoint of one who talks *about* naive belief and believers (standpoint (2)). This is the normal standpoint of theory and so we can here present Lenin's views in a straight-forward way as what he termed *Bildertheorie*, or "theory of reflection." In MEC, Lenin said his plan was to examine "empirio-criticism taken by itself" and then "in its connection and relation with other philosophical trends."[1] We will adopt a similar procedure in presenting Lenin's own theory. Taking the theory "by itself," we will first consider the principal concepts Lenin uses to explain *how* the world is revealed to the naive believer, specifically the concepts of "image," "matter," and "practice." Then we shall try to see more precisely *what* is supposed to be revealed, our topics being the general characteristics of matter exhibited by objects existing in time and space, and those constituting the "necessity" of natural laws or causality. Taking the theory "in its connection and relation with other philosophical trends," we shall show how it is clarified in terms of the ways Lenin opposes it to agnosticism and idealism, and qualifies it in the light of dialectical materialism in general. Finally, we shall comment upon our findings.

Before beginning, however, we should consider one general difficulty. In the last chapter, we noted Lenin's protests against those who would subject to argument the unquestionable fact that through sensation

man is given external, independently existing objects. In this chapter, however, we shall see that Lenin frequently resorts to argument himself to prove that sensations reflect objective reality and that he presents a systematic way of questioning and testing whether a specific image truly reflects reality, i.e. the way of "practice." It would thus appear that Lenin is constantly and grossly contradicting himself. But much of the difficulty vanishes when we realize that what he says cannot be argued are the reports of the naive believer when considered from the standpoint of the naive believer (standpoint (1)), whereas what he allows to be questioned are statements about these reports, i.e., statements made from standpoint (2). The verbal similarities between the reports and the statements obscure that critical difference just as in the last chapter we saw them obscure Lenin's attempt to express experience as it is experienced by the naive believer. And we should remind ourselves that this confusion proceeds both from the rhetorical purposes of MEC and the inherent difficulty of talking from either standpoint (1) or standpoint (2) without vitiating the claims which can be made from the other.

Image

Examining Lenin's statements made from standpoint (2), we may take "image" in a normal sense, namely, as something "reflected." The characteristics and functions Lenin assigns to "image," however, need to be carefully "analyzed out" of the rhetorical contexts in which they occur.

The most general characteristic of "image" is that of being an effect. Lenin specifies the effect as one produced by something existing independently of the mind. Presumably so much could be known directly by the naive believer. Inference is required to establish Lenin's further

statement that "colour is the result of a physical object on the retina, which is the same as saying that sensation is a result of the action of matter on our sense-organs."[2] And a "dialectical" understanding of nature is required to realize that the effect is not mechanical; that the "vulgar" materialists were wrong "in believing that the brain secretes thought in the same way as the liver secretes bile"; that sensation cannot be derived from or reduced to the movement of matter, but that sensation is "one of the properties of matter in motion."[3] On the other hand, no one knows yet "how matter, apparently entirely devoid of sensation, is related to matter which, though composed of the same atoms (or electrons), is yet endowed with a well-defined faculty of sensation." But "materialism clearly formulates the as yet unsolved problem and thereby stimulates the attempt to solve it, to undertake further experimental investigation."[4] It is evident then that in establishing the sensory "image" as an effect and in this sense a "reflection" of matter, Lenin admits empirical reasoning not so much to prove that sensation gives us knowledge of objects as to strengthen his readers' conviction of that truth by indicating how sensation achieves this end.

A more specific characteristic of "image" is that it is not only an effect of an object, but is experienced as the revelation of the object's being outside and independent of the mind. To the one who has it, the image - as Lenin uses "image" - is always a direct or indirect referrent to external, independent existence - direct, if the image is sense-perception; indirect, if it is idea. "Our sensation, our consciousness," says Lenin, "is only an image of the external world, and it is obvious that an image cannot exist without the thing imaged, and that

the latter exists independently of that which images it."[5] Only from standpoint (1), of course, would it be "obvious that an image cannot exist without the thing imaged," and then the statement would have to be taken to mean that when someone says he senses something, he asserts that something is there; the misleading usage of "image" here is a typically distorting result of Lenin's trying to exhibit standpoint (1) from standpoint (2). Other passages make much clearer Lenin's usage of "image" as a term denoting sensations and ideas experienced as referring to external existence. Opposing Helmholtz for calling ideas and sensations "symbols" and "signs," Lenin says:

> If sensations are not images of things, but only signs or symbols, which do "not resemble" them, then Helmholtz's initial materialist premise is undermined; the existence of external objects becomes subject to doubt; for signs or symbols may quite possibly indicate imaginary objects, and everybody is familiar with instances of <u>such</u> signs or symbols.[6]

Thus for Lenin an "image" not only stands for something, but also for something that <u>exists</u>. The usage is clearly uncommon, for normally we would not hesitate to say that we can have an "image" of a unicorn, for example. The usage is understandable, however, when we realize how it is an attempt to make discussable the revelation of objects to naive believers. An entire section of MEC is devoted to emphasizing this existential reference of "image" - the section entitled "The 'Theory of Symbols' (or Hieroglyphs) and the Criticism of Helmholtz."[7] The term "image," then, as Lenin uses it in speaking from standpoint (2), might be described as shorthand for the series, "seeing, hearing, remembering, theorizing, etc.," but with the understanding that we thereby refer mainly or exclusively to those aspects of the denotation of that series which are components of consciousness subjectively considered to constitute empirical knowledge. An image

can be said to be "true", i.e., "adequate," when that subjective consideration is confirmed. And perhaps the main reason Lenin and Engels chose "image" for this usage is that the relation of image→imaged suggests so many of the characteristics and functions they have in mind, e.g., effect → cause, pointer→pointed, nonmaterial→material, recognizer→recognized, statement→fact, "think it is"→"it is," and at times of course visual copy→copied.

Matter

The most general function of "image" is reflecting "matter." Lenin insists that we do not confuse questions about the structure of matter with those about the concept of it. The former change with the advance of science and are settled by empirical investigation; the latter can never become "antiquated", by which Lenin presumably means that whether we do or do not accept the concept of matter is a question not to be settled by empirical investigation but by some absolute, unconditional always operative decision. "Matter," syas Lenin, "is a philosophical category designating the objective reality which is given to man by his sensations, and which is copied, photographed and reflected by our sensations, while existing independently of them."[8] The two relative pronoun clauses suggest that Lenin at least implicitly recognizes here the two standpoints from which naive belief can be exhibited. In any event, it is clearly the first of these clauses - the one referring to "the objective reality which is given to man by his sensations" - that indicates the ground for the absolute decision noted above, i.e., the decision to accept the concept of matter, for unless objective reality could in some

way be "given," we would have no ultimate criterion for telling when, to what degree, or even if it is "copied, photographed and reflected," and Jordan's simplistic "refutation" of Lenin becomes valid.[9] It is also clear that the "philosophical category of matter" is short-hand for the existing of things "out there," external and independent of the mind. We have already seen how the fact of such existence has been asserted by Lenin throughout his theory of reflection as presented so far. The only further information Lenin provides in his formulation of "matter" is the suggestion that external existence is known in two ways - as "given" and as "copied." Perhaps Lenin considers that these specifications about the manner of knowing distinguish the concept of "matter" from the otherwise identical concept of "objective reality." They also reflect the fact that "matter" is used as a relational term in conjunction with "spirit" or "consciousness," the distinction between these terms being "absolute" only for the purposes of epistemology. We shall explore that qualification later.[10] It is sufficient to note here that for Lenin, "matter" and "spirit" are such fundamental and exhaustive terms, that when pressed, Lenin cannot define them in terms of anything more general. Replying to Bogdanov, he says that one must be a "blockhead to demand a 'definition of these two 'series' of concepts of ultimate comprehensiveness which would not be a 'mere repetition': one or the other must be taken as primary." Afterall, asks Lenin, how could the Machians define their ultimate terms? What more comprehensive category could they refer "sensation" or "element" to?[11] We might suggest here that the taking of either matter or spirit as "primary" is the philosophical formulation for what we earlier termed the great "act of faith" in which one accepts or rejects the standpoint of the naive be-

liever as the foundation of knowledge. For that act, no reasons can be given, just as for the concepts of matter and spirit, no generic concepts can be assigned.

Practice

But more must be said about Lenin's assertion that matter is the objective reality "which is copied, photographed and reflected by our sensations" as well as being "given to man by his sensations." We suggested that the inclusion of that seemingly unnecessary and weakened claim stems from adopting standpoint (2). Now we will see how the adoption of standpoint (2) makes this claim something more than a weakened tautological implication of the claim that objective reality is "given to man by his sensations." To begin with, there is a question that can be asked from standpoint (2) which is meaningless when asked from standpoint (1), namely, "Do we see an object truly or falsely?" The possibility of illusion or distortion is not entertained in direct, naive experience; it can only arise when naive experience is made an object of inquiry. Having taken standpoint (2), then, we must go on to ask, what is the criterion by which we can tell a true from a false seeing, hearing, remembering, theorizing, etc., i.e., "image"? The terms"true" and "false" are of course used here as synonyms for "adequate" and "inadequate"; contemporary Soviet epistemologists readily identify the materialist notion of truth as an interpretation of the traditional correspondence theory of truth going back to Aristotle.[12]

Thecriterion for such "truth" of images, says Lenin, is "practice." He cites Engels as follows:

> From the moment we turn to our own use these objects, according to the qualities we perceive in them, we put to an infallible test the correctness or otherwise of our sense-perceptions. If these perceptions have been wrong, then our estimate of the use to which an object can be turned must also be wrong, and our attempt must fail. But if we succeed in accomplishing our aim, if we find that the object does agree with our idea of it, and does answer the purpose we intended it for, then that is positive proof that our perceptions of it and of its qualities, so far, agree with reality outside ourselves . . . [13]

Engels' words present the notion of "practice" in its most common-sense form. There are passages in MEC, however, which offer more interesting developments of the concept. For one thing, Lenin observes that though it is impossible to be a materialist without affirming the existence of things outside our mind which evoke sensations, "one can still be a materialist and still differ on what constitutes the criterion of the correctness of the images presented by our senses."[14] Does this mean that the general principle of "practice" as an image-criterion is not axiomatic, or that it is an axiom but one distinct from the axiom that things exist externally, or only that its details can be disputed by materialists? At another place, Lenin says that "the standpoint of life, of practice . . . inevitably leads to materialism," a statement which again implies a distinction between the fundamental theses of standpoint (1) and the thesis of standpoint (2) that "practice" is the "image" criterion. The rest of that passage, however, makes it clear that the concept of practice <u>is</u> arguable, and we also learn why and to what extent: the criterion of practice can never "either confirm or refute any human idea <u>completely</u>"; thus it is "sufficiently 'indefinite' not to allow human knowledge to become 'absolute'," though it is still "sufficiently definite to wage a ruthless fight on all varieties of idealism and agnosticism."[15] The remaining questions, then, are "What is the basis of the criterion of prac-

tice?" and "What justifies this basis?" The answers are hinted in the passage just cited: both may be derived from the fact that the standpoint of practice is "the standpoint of life" - and we will recall that it is for the sake of life that we are to choose standpoint (1). Perhaps then the ultimate ground for all Marxist-Leninst epistemology is the decision to live. From this may proceed the "leap" into the objective world revealed from standpoint (1) and into "practice," the determinant of all the meaningful questions that can be asked from standpoint (2). We should bear this possibility in mind as we pursue our inquiry into Lenin's thought.

Now we may note some of Lenin's characterizations of "practice." We have already noted his comments on the "definiteness" of this criterion, which is enough to permit Marxists to combat idealism and agnosticism and yet not so great as to permit absolute knowledge. One wonders whether the "definiteness" enables these functions or is defined by them. A somewhat sharper distinction is drawn when Lenin treats "success":

> For the materialist the "success" of human practice proves the correspondence between our ideas and the objective nature of the things we perceive. For the solipsist "success" is everything needed by me in practice, which can be regarded separately from the theory of knowledge.[16]

The point of "success" in practice, then, is not to produce personal satisfactions considered as distinct from relation to the external world, nor to produce simply subjective convenience. It is to prove that in the successful cases, our "images" truly reflect the objects in question. Here we should also observe that "human practice" does not refer to isolated individual experiences but to the practice of the human race, especially in its most successful form - science and technology.

But how exactly does practice provide the criterion for our images? Lenin's reply is that practice is not something merely inspiring, accompanying, or coming after the making of ideas and observations; practice is cognition itself:

> In practice each one of us has observed time without number the simple and palpable transformation of the 'thing-in'itself' into phenomenon, into the 'thing-for-us.' It is precisely this transformation that is cognition.[17]

The phrase "in practice" here might also be read to make the sentence mean that we know <u>through</u> practice that cognition is transformation of "thing-in-itself" into "thing-for-us". But Lenin clearly equates practice and cognition when he favorably cites Lafargue as follows: ". . . from the moment that man is able to produce things for his own use from these elements, he may, as Engels says, assert that he knows <u>the bodies themselves</u>."[18] Lenin's remarks on practice as cognition are generally subordinate to his attempted refutation of the agnostics who argue that we can never know the "thing-in-itself." He cites Engels' reply to Hume and Kant on this point:

> The most telling refutation of this as of all other philosophical fancies is practice, viz., experiment and industry. If we are able to prove the correctness of our conception of a natural process by making it ourselves, bringing it into being out of its conditions and using it for our own purposes into the bargain, then there is an end of the Kantian incomprehensible [or ungraspable, <u>unfassbaren</u> - this important word is omitted both in Plekhanov's translation and in Mr. V. Chernov's translation [[Lenin's insert]] thing-in-itself. The chemical substances produced in the bodies of plants and animals remained just such things-in-themselves until organic chemistry began to produce them one after another, whereupon the thing-in-itself became a thing for us, as for instance, alizarin, the colouring matter of the madder, which we no longer trouble to grow in the madder roots in the field, but produce much more cheaply and simply from coal tar.[19]

The term "thing-for-us" aptly suggests the way we experience a thing as given in naive belief. Does it also offer a way of making some statements made from standpoint (2) and some from standpoint (1) mutually dependent as far as their truth values are concerned? If so, Leninists could fill some ap-

parently serious holes in Lenin's theory of reflection. Here is another possibility we should bear in mind as we pursue our study. Now we can at least say that for Lenin, the term "practice" seems to be in part the class name for the authenticating characteristics (not the instances) of acts of naive belief as these characteristics are experienced by the believer, e.g. characteristics such as being revelations of "things-for-us." So derived, practice would appear to be warranted by the fundamental certainty found in assertions made from standpoint (1). Applied to particular instances of naive belief, practice might then be so conceived that it could determine whether a particular instance possessed those authenticating characteristics. Explained in this way the doctrine of practice as the criterion of our "images" could thus be said both to justify and be justified by naive belief without this assertion being a question-begging. The problem of making practice apply to instances of naive belief involves, of course, the subtle questions of scientific methodology. But Leninists could argue that all such questions would have to be settled in terms of assuming that naive belief is in principle valid; for one thing, as soon as we make an instance of naive belief an object of investigation, we become, in respect of that object, unquestioning believers in the existence of something external and independent of our minds. The fact is, however, that contemporary Soviet philosophers make little if any epistemological use of "naive belief," as we shall see in Chapters IV - VII.

In any event, it is clear that for Lenin, practice serves three distinct but closely related functions. First, the "verification of these images [of things which exist outside us], differentiation between true and

false images, is given by practice."[20] Second, practice gives this verification because being the transformation of thing-in-itself into thing-for-us, practice is virtually cognition: and through Lafargue, Lenin asks how "the God of the Christians, if he existed and if he created the world," could "know" things any better than by knowing how to make them for his own use?[21] Third, and most important for the special purposes of MEC, practice, as verification of "images" and the form of cognition, as activity guided by sense-perception, confirms the inherent ability of sense-perception and "images" truly to reflect ever-increasing areas of independent, externally existing objective reality. Lenin cites Engels as follows:

> Not in one single instance, so far, have we been led to the conclusion that our sense-perceptions, scientifically controlled, induce in our minds ideas respecting the outer world that are, by their very nature, at variance with reality, or that there is an inherent incompatibility between the outer world and our sense-perceptions of it.[22]

Objects

Having considered Lenin's concepts of image, matter and practice, we may now try to determine more precisely what are the characteristics of matter which practice shows are revealed in our images. Lenin declares that "from Engels' point of view, the only immutability is the reflection by the human mind (when there is a human mind) of an external world existing and developing independently of the mind."[23] That thesis, in other words, is not arguable; we have suggested that its absoluteness and its role as the starting point for all empirical inquiry proceed from standpoint (1) which in turn is chosen in conjunction with our decision to live, these choices not being derivable from premises or evidence. Strictly speaking, practice does not prove that thesis; what it does do is to show

that the thesis does not lead to contradictory implications, advances the life-purposes for which it is adopted, and enables the thesis to be applied to particular instances of sense-perception. Nevertheless as we have seen, Lenin often presents practice as proof of this "immutable" thesis. A particularly important passage in which he does this is his discussion of Engels' comments on the discovery of alizarin in coal tar. From this instance of scientific and industrial practice, Lenin draws "three important epistemological conclusions," the first two of which are really not "conclusions" of the discovery but pre-suppositions which the discovery nicely illustrates. The third "conclusion" is not a conclusion either; it is a prescription, namely, "think dialectically," but a reasonable one (as "think dialectically" is here defined) in view of the evidence represented by the discovery. We cite these conclusions below both as examples of Lenin's style of "proof" and as major statements of his theory of reflection:

> 1) Things exist independently of our consciousness, independently of our perceptions, outside of us, for it is beyond doubt that alizarin existed in coal tar yesterday and it is equally beyond doubt that yesterday we knew nothing of the existence of this alizarin and received no sensations from it.
>
> 2) There is definitely no difference in principle between the phenomenon and the thing-in-itself, and there can be no such difference. The only difference is between what is known and what is not yet known. And philosophical inventions of specific boundaries between the one and the other, inventions to the effect that the thing-in-itself is "beyond" phenomena (Kant) or that we can or must fence ourselves off by some philosophical partition from the problem of a world which in one part or another is still unknown but which exists outside us (Hume) - all this is the sheerest nonsense, Schrulle, trick, invention.
>
> 3) In the theory of knowledge, as in every other branch of science, we must think dialectically, that is, we must not regard our knowledge as readymade and unalterable, but must determine how knowledge emerges from ignorance, how incomplete, inexact knowledge becomes more complete and more exact.[24]

The characteristics of matter which we learn about in this passage are described in conclusions (2) and (3); the first conclusion merely restates Lenin's familiar basic thesis. From conclusion (2) we learn that the only difference in principle between the phenomenon or image and the thing-in-itself is "between what is known and what is not yet known." The lines following make clear that the "difference in principle" Lenin seeks to exclude is a difference such that we cannot be certain things are outside us. In denying the existence of such a "philosophical partition" Lenin often declares that sensations do reflect reality - although "approximately," thereby giving occasion to critics like Jordan to attack him for treating percepts as if they were literal photographs, mirror-reflections, etc. Others could challenge him to spell out the distinctions among the phrases "approximately but certainly," "almost but not certainly," "to some extent but not definitely," etc.[25] We would be less likely to miss the potential cogency of his theory of reflection, however, if we regarded his assertions of photographic relations between images and objects as being primarily denials of the "philosophical partition" mentioned above. Making this concession, we can then try to grasp Lenin's concept of reflection by way of the "difference in principle" he does admit, i.e., the difference "between what is known and what is not yet known." This is not an unilluminating or misleading distinction. As we have seen, cognition for Lenin is "the transformation of 'things-in-themselves' into 'things-for-us'," and he alludes again to that explanation in the present passage.[26] Thus we see that matter is such that it exists not only externally and independently of us, but also beyond our knowledge, until our arts and skills have turned matter into

things-for-us. In this process, images of reality are more like victories than photographs. Conclusion (3) suggests that these victories are always only advances, and that in discussing them epistemologically, we must do so from the standpoint of observing a developing process. the emergence of knowledge from ignorance. This is the dialectical view, but Lenin would be quick to point out that the warrant for this view is not the general authenticating characteristics of naive belief, but sophisticated natural and historical science that has revealed the dialectical character of objective reality.

But would it not be possible, we may ask, for different men to achieve the same transformation of matter into 'things-for-them' on the basis of very different images? And if so, doesn't that possibility show that there must be a criterion for correspondence between ideas and matter other than practice? Lenin, perhaps, could reply that the progress of science steadily reduces the range of equally workable theories and that in any event matter and spirit are such that no idea can ever be completely confirmed. And yet the force of the difficulty is still not reckoned with, for we can ask what are the characteristics of an image that explain its ability to let us make a "thing-in-itself" a "thing for us," There are a few passages in MEC, however, that provide some answers. Consider Lenin's citation of Karl Kautsky's argument against Kant:

> That I see green, red and white is grounded in my faculty of sight. But that green is something different from red testifies to something that lies outside of me, to real differences between the things . . . . The relations and differences between the things themselves revealed to me by the individual space and time concepts . . . are real relations and differences of the external world, not conditioned by the nature of my perceptive faculty . . . . If this were really so [if Kant's doctrine of the ideality of time and space were true], we could know nothing about the world outside us, not even that it exists.[27]

Kautsky's main point is that time and space are "real," and we shall return to it shortly. Now we should note Kautsky's seeming adoption of a Lockian distinction between primary and secondary qualities. Color is not out there on objects, an important restriction of the validity of naive belief. But unlike Locke, Kautsky does not then make the primary qualities those appropriate to geometry; for him they are any relations and differences of things that are functions of real space and time. Apparently, then, Kautsky recognizes that the analogy between a sense perception and what it purports to reveal can be at best only morphological, though he clearly regards "images" to be not only analogies of objects but also revelations of objective existence, i.e., of objects found in space and time. Later we shall see that in contemporary Soviet epistemology the analogy relations between "images" and "objects" are also interpreted morphologically. V. S. Tiukhtin, in fact, shows the possibility of objectively realizable interpretations of such relations by using cybernetic formulations of isomorphism and homomorphism. In this development of the concept of "reflection," some major weaknesses in Lenin's theory are overcome. Soviet philosophers recognize, for example, that "images" which are capable of being compared to objects morphologically cannot be simply sense perceptions, for some degree of active reasoning is required to identify and formulate images as "structures" and to reflect the "connections" in objective reality which make structures apprehensible. We shall also argue that Tiukhtin's interpretations of "reflection" provide a possibility for meeting the difficulty mentioned above of reconciling "practice" as a criterion for correspondence of images and objects with the characteristics of images that make transformations of object possible.[28]

But now we must return to the preparation for such discussions.

Kautsky's view of the image as a revelation of objects in space and time may next be considered. What he emphasizes is the fact that space and time are independent of and external to the mind and hence "real" features of the universe, not "ideal" forms of consciousness as Kant would have them be. Kautsky's proof is based on an appeal to the absolute thesis of standpoint (1), viz. there exists a world outside us: if space and time were merely ideal, we could not know the world exists outside us. But it is certain that the consequent is false and so the antecedent must be rejected. One might object that the falsity of Kant's idealist account of space and time would still not imply the truth of Kautsky's materialist account of them. The thesis of an externally existent world, however, can also be made to offer a direct proof that time and space are "real" in the materialist sense of "real." Lenin, citing Engels, finds that objective time and space are part of the very meaning of objective existence. They are "the basic forms of all being," says Engels," and existence out of time is just as gross an absurdity as existence out of space." Engels agrees that our ideas of space and time are mutable, relative, and subject to development, as his opponent Dürhing had declared, but in contradiction to Durhing, he insists that "these developing notions of time and space <u>reflect</u> an objectively real time and space."[29] A special polemical reason for stressing objectively real time and space is that the latter supplies "the objective criterion," as Lenin says, "which prevents one going beyond the bounds of time and space" to postulate God as a creator.[30]

Necessity

So far we have considered only the characteristics of objects which Lenin holds are revealed in our images. But his concept of "matter" includes not only objects, but also whatever exists externally and independently of man's will and mind. Thus it includes the laws of nature and in addition, specifies that they must hold by virtue of an external, independent "necessity." Consequently Hume's widely accepted notion that there is no "necessary" connection between cause and effect is firmly rejected by Lenin as it was by Engels, and of course they dismiss with at least equal vigor the various neo-positivist extensions of that notion which question the whole concept of causality. Here we come to one of the thorniest issues in the debate between positivists and Marxist-Leninists, and to follow its intricacies now would take as far afield. The point to be underscored here is that the reality of objective necessity and causality is necessarily implied by Lenin's very definition of matter, a definition which describes the essential experience of naive belief as it is experienced by the believer. However elaborate the arguments offered by Marxist-Leninists to support their belief in objective necessity and causality, these arguments must be considered as polemics, not as reasons which they give themselves for that belief. The world exists outside us; we cannot change it merely by wish, will, or imagining. The shorthand for those facts is "objective necessity." And the facts named this way are the unquestionable starting points of empirical knowledge. A second point to be emphasized is that Engels and Lenin do not address the question raised by Hume about causal necessity, i.e., the question of whether we can perceive a necessary

"connection" between cause and effect. Starting with their notion of "necessity," Engels and Lenin could argue that the answer to such a question would not settle the issue. For though we perceive nothing at all between a cause and an effect, we know that we must do something other than wish if we are to make things for our use. This is the "necessity" the Marxist-Leninists are talking about, and when they go on to say it is "objective," they mean that the "must," the "either do this or fail," is imposed on us not by our minds but by what we find out there, in the world antedating and determining our existence. Hence the question of causal necessity is also closely linked in Marxism-Leninism with the question of freedom. Freedom is on one side the measure of how far we recognize necessity, i.e., how far we realize what we must do in order to make things for our use, and considered this way the range of freedom is the range of practice; freedom on the other side is our practical ability to use this understanding of necessity for changing the world into what we want it to be. Lenin's presentation and analysis of Engels' views on freedom as control of necessity evidence the correctness of this interpretation.[31]

Bildertheorie and Idealism

We may now consider Lenin's theory of reflexion in terms of the ways it opposes itself to idealism. We note first that according to Lenin, the Machian-Marxist Bogdanov does not take nature as a "genuine primary" for it "is not taken as the immediately given, as the starting point of epistemology." Here Lenin's words are clear evidence for our characterization of standpoint (1). In Bogdanov's writings, Lenin continues, "nature is in fact reached as the result of a long process, through

abstraction of the 'psychical.' It is immaterial what these abstractions are called . . . . The essence of idealism is that the psychical is taken as the starting point; from it external nature is deduced, and only then is the ordinary human consciousness deduced from nature."[32] Another way perhaps of making this objection is to argue, that there is a critical difference between perceiving and talking about perceptions; the naive materialist has the advantage of being able to say, "I perceive things"; the idealist, though proceeding from "sense-data," does so only by abstracting from their existential reference, and hence is talking only about conceptions of perceptions; he therefore can describe ordinary experience only indirectly, unless he makes such absurd statements as "John perceives perceptions." Thus in contrast to idealism, Lenin's materialist way of accounting for experience seems to have a concreteness and directness that idealists can reach for only at the peril of making absurd statements.

Another important feature of Lenin's theory of reflection that emerges in contrast to idealism is the foundation it assigns for the basic principles of knowledge. Unlike idealism, and indeed unlike any of the leading non-Marxist Western philosophies with the possible exception of Heidegger's, that foundation is not in thought at all, whether thought be taken as formal logic, Cartesian doubt, language, or any other function of consciousness. Lenin cites Engels' Anti-Dühring as follows:

"But whence does thought obtain these principles i.e. the fundamental principles of all knowledge? From itself? No . . . these forms can never be created and derived by thought out of itself, but only from the external world . . . the principles are not the starting point of the investigation . . . but its final result; they are not applied to nature and human history, but abstracted from them; It is not nature and the realm of humanity which conform to these principles, but the principles are only valid in so far as they are in conformity with nature and history."[33]

Whatever our sensory equipment, logical apparatus, and epistemological categories, and to whatever extent our notions of criteria and truth are shared by other men, nature, then, is the final determinant. Moreover, nature determines not merely as a scale which men may or may not use to check their epistemological theories; Engels suggests here that nature actively corrects these theories in a way perhaps analogous to the way it favors certain biological developments over others and thereby gives rise to evolution. Indeed, for Marxists there is more than an analogy here. The rise and fall of theories of knowledge is a part of the historical evolution which in turn is part of natural evolution, and the eventual triumph of the Marxist epistemology will signify that it is the fittest to survive, the one which best supports the decision to live and enables the human species to produce "things-for-us." To speak in the figurative terms of "photographs" which Lenin is so fond of, we could say that for the Marxist-Leninist, individual minds are like cameras whose sensitivities vary according to the materials of their construction (the biological components) and the way they are made (the social components). Which are the most accurate cameras? This question obviously cannot be settled by the cameras themselves (as, for example, by appealing to intersubjective tests). Nor could it be settled by what the cameras are taking pictures of, unless the subject photographed had some way of compelling the cameras to do it justice. But nature as the subject does have such a way. Assuming now that our cameras are living beings, we can say that nature gives the means of life most abundantly to the most accurate cameras, denies these means altogether to the least accurate cameras (the minds of idiots and certain psychotics), and in general, encourages by

its gifts and withholdings the evolution of progressively more efficient cameras in the same way it encourages the development of ever-more intelligent forms of life. The correcting function of nature, of course, can only be identified as a tendency, and Lenin and Engels have recognized that fact in their insistence that knowledge is an emerging process and that no particular idea or image can ever be completely confirmed as absolutely accurate. These interpretations, then, may suggest the range of what Engels is generalizing about in the above passage when he describes nature as the source and creator of the fundamental principles of all knowledge.

A criticism of idealism which re-inforces the above interpretations is given in Lenin's following comment on Hume's and Kant's theories of causality:

> . . . the subjectivist line on the question of causality, the deduction of the order and necessity of nature not from the external objective world, but from consciousness, reason, logic, and so forth, not only cuts human reason off from nature, not only opposes the former to the latter, but makes nature a <u>part</u> of reason, instead of regarding reason as part of nature.[34]

There is another frequently repeated criticism, however, which sharply restricts our freedom in speaking of Lenin's theory of reflection, especially his concepts of "practice" and of cognition as transformation of the thing-in-itself into the thing-for-us. The latter concepts could tempt us to regard Marxism-Leninism as a species of pragmatism, to think that when Lenin declares that the standpoint of naive belief is the standpoint of life, he is thereby saying that we must assume the existence of an external world as a matter of practical convenience. But Lenin firmly rejects any suggestion that the assertion of the world's external existence is a "working hypothesis." In fact, he is more concerned to refute such

formulations than he is straight-forward idealism since they are typical of Machism, the principal target of MEC. The danger they represent for Marxism Lenin illustrates by citing the "spiritualist" James Ward's statement that "modern cultured fideism . . . does not think of demanding anything more than the declaration that the concepts of natural science are 'working hypotheses'."[35] Later Lenin argues, in opposition to the idealist interpretations of modern physics, as follows:

> We cannot regard only atoms, electrons and ether as mere symbols, as a mere "working hypothesis": time, space, the laws of nature and the whole external world must also be proclaimed a "working hypothesis." Either materialism or the universal substitution of the psychical for the whole of physical nature . . . [36]

These passages make it clear that Lenin not only rejects the notion of "working hypothesis" as applied to the thesis of the world existing externally, but also as applied to all well-established laws and concepts of natural science, for regarding the latter as "working hypotheses" will make it possible to regard the first thesis in the same light. To understand Lenin's concern, we must indicate what "working hypothesis" means in this connection. In brief, a "working hypothesis," as Lenin uses the term, is a hypothesis which either avoids asserting the existence of the external world or regards such existence as not established but useful to assume. Lenin cites Rücker's formulation of the problem:

> The question at issue is whether the hypotheses which are at the base of the scientific theories now most generally accepted, are to be regarded as accurate descriptions of the constitution of the universe around us, or merely as convenient fictions.[37]

We have seen how important utility is for Lenin's theory of reflection, and we have also seen how Lenin insists that we should take a dialectical view of knowledge, realizing that each new scientific advance is subject

to correction in the future and in this sense is only "relatively" true. Thus it is not the relativistic, pragmatic features of "working hypotheses" or "convenient fictions" that disturb him so much as the doubt conveyed by these terms about external existence. If the latter can be doubted, it becomes possible to give a theistic explanation for the order we experience; or if the latter is assumed in the interests of convenience, we could also assume a belief in God in the interests of convenience.

Bildertheorie and Dialectical Materialism

Having considered Lenin's theory of reflection in terms of the way he contrasts it to idealism, we may see what further clarification of it we can receive by examining the way Lenin qualifies it in relating it to dialectical materialism in general. His remarks in this connection attempt to give a materialist account of the ontological status of consciousness. Is consciousness in any way less "real" than matter? Lenin denies this, as indeed he must if he is to avoid philosophical dualism.[38] On the other hand, Lenin also denies that the philosophical category "matter" should be construed as including consciousness. Criticising Dietzgen, Lenin says that if the conception of "matter" also includes "thoughts," then "the epistemological contrast between mind and matter, idealism and materialism . . . loses all meaning."[39] The distinction between mind and matter must be regarded as absolute within epistemology, for epistemology requires this distinction in order to perform its main function, viz., to show "what is to be regarded as primary and what as secondary" in the process of cognition, and what is to be so regarded is either consciousness (spirit) or matter (nature).[40] Thus, though for

Lenin the field of epistemology is not merely Marxist epistemology, it is set up as a game which can be played consistently only by idealists and materialists. Or in Marxist terms, it is the battleground for the struggle of the two main lines of thought, the dialectical development of the struggle constituting the trend and history of philosophy. On reflection, indeed, we can see that all the key terms of Lenin's theory of reflection have been defined in connection with projecting that struggle. Every word of the central absolute thesis, "sensations and ideas are approximate copies or images of objective reality," has been revealed on analysis as a way of asserting the "primacy" of a world of externally existing objects and necessities. In saying this, of course, we do not thereby mean to say that Lenin's approach to epistemology has only a rhetorical justification, for though Lenin clearly does conceive of epistemology more as a debate than a discipline, the standpoint of the naive believer, the "standpoint of life," provides reasonable grounds for his having developed that way of regarding epistemology. In brief, then, "consciousness" must be considered as distinct from "matter" in order to carry on the great philosophical struggle resulting from the decision to live and hence to take the standpoint of the naive believer.

And yet that distinction of thought from matter which must be absolutely maintained in order to enable epistemological struggle, must not be considered as "absolutely" absolute. From a higher level, i.e., the point of view from which we talk about this struggle rather than wage it, consciousness is revealed as a part of nature. Lenin favourably cites the materialist Albrecht Rau as follows:

For a materialist a distinction between <u>a priori</u> knowledge and the 'thing-

> in-itself' is absolutely superfluous, for since he nowhere breaks the continuity of nature, since he does not regard matter and mind as two fundamentally different things, but as two aspects of one and the same thing, he need not resort to artifice in order to bring the mind and the thing into conjunction.[41]

Elsewhere Lenin says that the contrast between mind and matter must not be made "excessive, exagerated, metaphysical."

> The limits of the absolute necessity and absolute truth of this relative contrast are precisely those limits which define the <u>trend</u> of epistemological investigations. To operate beyond these limits with the distinction between matter and mind, physical and psychical, as though they were absolute opposites, would be a great mistake.[42]

The "absolute" distinction between matter and mind in epistemology is seen, then, as a "relative" absolute in materialist ontology.

Finally, we should notice that the inclusion of epistemology in ontology, the accounting for knowledge as an opposition between two entities, the interpretation of these entities as consciousness and matter, the implicit characterization of knowing as an act in which objectivity is revealed as objectivity in consciousness, the use of the dichotomy "thing-in-itself" and "thing-for-us," the concept of necessity, the doctrine of the inter-relations between the "relative" and "absolute," --- all these features that are found in the expression of Lenin's theory of reflection are borrowings from Hegel.[43] But though Hegelian dialectics provide the terminology and the approach, the function of the theory of reflection is related to Hegel's philosophy as the antithesis of the function of that philosophy; i.e., as opposed to Hegel, Lenin asserts the primacy of nature over spirit. At the same time, as dialecticians tell us, no positions are more intimately related than those which are antithetical to each other. We therefore must bear in mind the possibility that the meaning of "reflection" for Lenin would be similar to the meaning

given by Hegel to terms indicating the process by which nature receives the imprint of spirit.

Conclusions

Considering the findings of the last two chapters, we can say that the most obvious and important fact about MEC is that it presents not so much an epistemology, as a program for epistemology. Furthermore, this program has to be separated out of a highly rhetorical context. The result is that the theses constituting Lenin's theory of reflection are undeveloped, elementary and highly general statements which can be interpreted in at least three significantly different ways.

First, if we wish to present the potential cogency of the theory, we can consider it as implying a system in which dialectical contradictions within the standpoint of naive belief give rise to a self-correcting and therefore self-developing concept of epistemological reflection. This is the interpretation we have favored. It can be supported, however, only by overlooking passages in MEC which are absurd both in themselves and when compared to what Lenin's theory would have to imply in order to be consistent.

Second, if we wish merely to refute the theory, we can consider the meaning of the theses to be limited by the context of the individual paragraphs in which the theses are expressed. Interpreting the theses that way, Jordan has no difficulty finding easily exposed statements in MEC asserting cognition to be a mechanical mirroring of "objects" in "images." We should emphasize now that we do not deny the existence of such statements. Perhaps the most extreme - not referred to by Jordan - occur in

the "Supplement" to the fourth chapter. There Lenin roundly declares that "the forms of our sense-perception do resemble the forms of the actual - i.e., objectively-real - existence of objects," that "objects . . . . really exist and are fully knowable to us, knowable in their existence, their qualities and the real relations between them," and that "the laws of thought reflect the forms of actual existence of objects, fully resemble, and do not differ from, these forms!"[44] Jordan's objections fully apply to such isolated assertions, and Lenin cannot be defended by arguing that he didn't really mean what he was saying. We have tried to demonstrate, however, that there are also passages in MEC which are not consistent with the notion of cognition as a mechanical mirroring, and that when considered together, they are consistent with a system of significant epistemological perspectives. In brief, Lenin exhibits contradictory intentions. We have chosen to characterize his most reasonable ones, so that the potential cogency of his theory of reflection can be understood as a causative factor in the development of contemporary Soviet epistemology.

What we actually find in contemporary Soviet theory of knowledge, however, are only elements of the interpretation of Lenin we have offered. In their interpretations, Soviet philosophers emphasize the programmatic features of his theory and almost totally neglect Lenin's theses on naive belief. Their programmatic interpretation regards Lenin's characterizations of reflection as constituting highly general notions which must be given content through development of theory and especially through application of them in solving philosophical problems. For Soviet philosophers, the content of these notions as developed in MEC more or less amounts to a

single directive: "Always show that objective reality determines consciousness." This dictum is for Soviet epistemology what Bacon's imperative "Follow experience," was for British empiricism. Grounded in the concept of "determination," the concept of "reflection" in Soviet epistemology refers not only to the specific features of the cognitive process but also to the relations of those features to objective processes in general. The Soviets do not, however, limit the characterization of these specific features to the mechanical mirroring of objects. The one relatively concrete characterization they take seriously is Lenin's observation that " 'in the foundation of the structure of matter' one can only surmise the existence of a faculty akin to sensation";[45] but as we shall see in our discussion of V. S. Tiukhtin's articles, Lenin's remark is regarded simply as a hint inspiring a quest for a cybernetic interpretation of "reflection" as a relation and a process.[46]

Our discussion of Soviet epistemology in the following section will make it evident that the Soviets were wise to have disregarded those descriptions of reflection in MEC which Jordan exposed. We shall also see that their neglect of Lenin's assertions of naive realism is historically understandable. But we shall see that at critical points in their development of Lenin's program for epistemology, they still have need of Lenin's principle that the "foundation" of materialist theory of knowledge is "the 'naive' belief of mankind." We submit, therefore, that the potential cogency of Lenin's theory of reflection serves to determine Soviet epistemology in three ways: (1) Soviet epistemology logically tends toward acceptance of the dialectic of naive realism, despite the attempts of Soviet philosophers to do without it; (2) the attempts to avoid naive realism

reflect the pressures of developments in science, logic, and Western philosophy of science since the publication of MEC; and (3) the programmatic features of the theory of reflection which are accepted by Soviet epistemology have in fact turned out to be fruitful guides for finding possible solutions to problems unsolvable by contemporary "neopositivism" and expecially for integrating epistemology with the sciences and techniques of the new technological revolution, notably, cybernetics, control and communications systems engineering, and resemblance theory.

IV

THE SOVIET INTERPRETATION OF THE THEORY OF REFLECTION

Turning to the interpretation of Lenin's theory of reflection now current in Soviet epistemology, one is immediately struck by the difference in tone between MEC and the writings of present-day Soviet philosophers. Invective and citation of authority have been greatly reduced, and in place of ringing generalities, serious attempts are made to wrestle with the difficulties of philosophic problems. One reason for the change is that Russian Marxists no longer need to be shown what is the orthodox Marxist position on epistemology. Eventually Soviet philosophers agreed that Lenin's MEC settled that question.[1] Today the main pressure on Soviet philosophers is to find ways of helping scientific workers conceptualize their problems within the framework of dialectical materialism, and for this purpose, not rhetoric but careful and respectful examination of contributions in all fields of science is required.

In contrast to the role played by scientific discoveries in MEC, therefore, their main function in recent Soviet epistemology is to provide not further proof of basic Marxist principles, but areas requiring the application and development of those principles. In the following chapters, we shall observe one case in which some of those principles were not only developed, but also significantly altered to meet the challenges of scientific advancement, namely, the alteration of the theory of

reflection expressed in MEC. At the close of the last chapter we noted some features of this alteration: the neglect of appeals to naive belief, the dropping of crude equations between sensory "images" and objects as they really are, and the emphasizing of the programmatic aspects of Lenin's epistemology. Now we submit that what underlies these changes is a profound shift from sense-oriented empiricism toward Hegelian rationalism induced in part by the need to adjust dialectical materialism to scientific progress.

Developments in both the physical and the logical sciences demanded a greater regard for theoretic reason. The world revealed by nuclear physics could never be apprehended by ordinary empirical understanding; and in view of the "uncertainty" principle and Einstein's theory of relativity, philosophers of science who relied on the "naive belief of mankind" as a "foundation of knowledge" looked ridiculous (though we argue that they need not in fact have been so). Even more influential in raising the epistemological status of the creative intellect were the discoveries of formalization techniques in logic, mathematics, and semantics. Based on new and rigorous definitions of key philosophic concepts such as "truth," "meaning," and "existence," these techniques had direct consequences for epistemology. Furthermore, since formalization methods are essential in cybernetics and the new technology, Soviet Marxists could not neglect these methods and their epistemological implications without violating their obligation to serve socialism.

These pressures from developments in science were reinforced by "neopositivism," a term loosely applied by Soviet writers to those tendencies in Western epistemology which make formal logic the model for in-

terpreting all genuine knowledge. Utilizing the definitions and techniques which made formalization so successful in extending the interrelationships of mathematics, logic, and semantics, many neopositivists, according to the Soviets, tried to demonstrate thereby that the only function of philosophy is to clarify the "given" in science or language, and that constructive philosophies such as dialectical materialism were varieties of useless "metaphysics." To answer their arguments, Soviet philosophers not only had to reckon with the power of formal reasoning, but also to show in a scientifically acceptable way the efficacy of dialectical reasoning.

But how were Soviet philosophers to meet these challenges from science and Western philosophy without seeming to be guilty of "revising" Lenin? The naive, sensation-oriented realism of MEC, however, was not the only kind of epistemological approach to be found in Lenin's thought. About six years after writing MEC, Lenin began writing a series of notes dealing largely with classical German philosophy, especially the work of Hegel. This material, written between 1914-16, was first published in 1929-30 and thereafter frequently re-published under the title Philosophical Notebooks.[2] In this work, Lenin continues to assert naive realism; he defends "ordinary human understanding," for example, against Hegel's criticisms.[3] But there are also many passages which endorse aspects of Hegel's dialectical rationalism, and adjusting Hegelian logic to the needs of materialism, Lenin insists that cognition be viewed as a process in which things become known in their relations to one another, relations which are objective and reflected by reason. Dialectical reason is also identified as that which develops concepts that are "flexible" enough to

record both our increasing understanding of a thing or relation and the dynamic character of objective reality. In the Philosophical Notebooks, therefore, Soviet philosophers could find grounds for developing a rationalistic epistemology which would still be Leninist, despite the way it parts company from the simple empiricist principles of MEC.

The evidence for the above characterization of contemporary Soviet epistemology will become apparent in later chapters where we review Soviet articles involving the theory of reflection which have been published since 1960. Here we can establish the general rationalist character of Soviet epistemology by considering V. S. Shvyrev's article, "The Neopositivist Conception of Empirical Significance, and Logical Analysis of Scientific Knowledge," which appeared originally in Filosofskie voprosy sovremennoi formal 'noi logiki, Moscow, 1962.[4]

Shvyrev's main argument is that the neopositivists were guilty not only of subjectivism - and thus open to the objections raised by Lenin against the empirio-criticists - but also of "absolutizing" formal logic as the tool for a general analysis of knowledge and epistemology. Shvyrev tries to reveal the errors in such absolutization by showing how the neopositivists themselves discovered them during the course of the history of their movement. His neutral description of this "absolutizing" is the neopositivist "program of logical analysis," the positive function of which is to disclose in the logical structure of scientific knowledge the "empirical significance" of the concepts and statements of science, and the negative function of which is to purge philosophy of " 'metaphysics'," i.e., any attempt to provide a knowledge of reality not reducible to the "given."[5] When not made to serve these functions, logical analysis, ac-

cording to Shvyrev, is of the highest value, and he declares that Marxists should cease "denigration . . . of the considerable contributions of the neopositivist logicians," especially Carnap and Reichenbach.[6] Serving those ends, however, logical analysis breaks down, as demonstrated by the failures of the neopositivists Russell, Wittgenstein, Schlick, Neurath, Carnap, and Popper to meet the difficulties they discovered in their program.

The first set of these difficulties reviewed by Shvyrev consists of those resulting from the neopositivist attempt to give a purely empirical interpretation to the primary statements whose truth supposedly determines the truth of all scientific knowledge. Such an attempt failed, says Shvyrev, first because no sensible similarity could be shown between a sensory fact and its linguistic formulation.[7] Nor could the empiricist program be saved by substituting a relation of "expression" between sense-data and elementary propositions for the untenable relation of "correspondence," for as A. J. Ayer himself explained, "expression" of an entity in language always involves classification and hence going " 'beyond the immediate'."[8] Popper, Neurath, and Carnap therefore tried to support empiricist interpretation of primary knowledge by referring the acceptability of ultimate statements to subjective decision and conventionality as well as to sense perception.[9]

Shvyrev argues that the basic error of the neopositivists' view of primary knowledge is the assumption that sense perception is the only means man has for ultimate validation of knowledge. "The obtaining of a statement," he says, "even about the given, constitutes a definite cognitive activity not reducible to an act of perception." To achieve even

the limited neopositivist objective of clarifying the structure of scientific knowledge through analysis of truth-conditions, it is therefore necessary to account for this cognitive activity. We must explain how the linguistic expression of sense perception is "in terms of general concepts, which, even though they have sensory correlates, introduce a general, more-than-subjective, and specifically mental concept." But such explanation requires us to reconstruct "connections lying outside the individual consciousness," i.e., to develop a theory of reflection accounting for cognition as a process taking place between the brain and its environment.[10] The neopositivists, however, cannot undertake such an explanation of basic knowledge, Shvyrev argues, since they are committed to beginning from an analysis of knowledge as given, rather than developing, and to working with a formal, logical apparatus that is not capable of explaining knowledge as an interaction of the world and consciousness (nor, we might add, of explaining the limits of its own applicability).[11]

Shvyrev next considers whether the neopositivist program has been able to provide a consistent account of the logical relations between the basic and derived statements of science. However, the neopositivists' insistence that all factual knowledge is reducible to sense knowledge again frustrates their program of logical analysis. Resolving to do justice to the logical structure of scientific knowledge, logical positivists found that they could not reduce statements of natural law into observation statements since many of the former range over an infinite number of cases without regard to space-time localizations, while the latter can be specified for only a finite set of entities occupying definite time-

spots. Schlick and Ramsey tried to save the situation by arguing that "laws" really express only rules for research conduct, Ramsey indicating the form of such rules to be " 'variable hypotheticals' "; e.g., " 'If I meet an A, I shall regard it as a B'." Shvyrev points out, however, that interpreting laws as "rules" makes it impossible to determine how we know the truth-value of a law, or to explain why we choose one "rule" rather than another, or to account for "the most important function of scientific knowledge, the function of prediction."[12] Nor, says Shvyrev, was Popper able to treat the meaning of scientific law more adequately by substituting for the Wittgenstein-Schlick "principle of verifiability," the principle of "falsifiability." Popper argued that the universalizing character of laws would be logically preserved if we merely required that for any significant general statement about reality, a particular observation situation be specified which could possibly refute that statement. (The logical consideration here, presumably, is that by asserting a particular negative, we can at least refute a universal affirmative, whereas from asserting particular affirmatives we can deduce nothing at all about a universal affirmative.) But Popper's critics pointed out that falsifiability is also too narrow a criterion of testability since we could never specify all the observations necessary to falsify assertions that objects of a certain type exist (i.e., particular negatives cannot contradict particular affirmatives). In Testability and Meaning, Carnap finally admitted, says Shvyrev,

> . . . that the cognitive significance of an assertion about reality is not reducible solely to identification of the "given," as was held by Wittgenstein and early neopositivists. For an infinite series of states, even given states, is not itself given, but contains a factor of extrapolation of knowledge arrived at as a result of a finite number of observations applied to an infinite number of cases.[13]

At present, says Shvyrev, neopositivists in general agree "that the contents of scientific discussion cannot be reduced entirely to empirical content, and that empirical testing of these assertions is possible only within a system." But the neopositivists do not appreciate how devastating are the effects of these situations on their concept of an empirical criterion of cognitive meaning. In the first place, since we must use not one but a set of theoretical assertions in order to derive an observation statement capable of being tested empirically, we cannot determine exactly which of these theoretical assertions are confirmed or denied by the tested observation statement. Can we say, then, that empirical testing can establish the truth-value of a theoretical system as a "whole" though not the truth-value of individual theoretical assertions? But even granting the meaningfulness of such testing, we face this further logical difficulty: to any such combination of theoretical assertions in a "whole" hypothesis, "it is always possible to add conjunctively an assertion which in reality is not employed to derive . . . . [an empirically testable] corollary and is in principle untestable." Shvyrev supports these arguments by reference to recent work by Quine, Rynin, and Carnap.[14]

Concluding his study, Shvyrev focuses upon the internal contradictions whose historical development has ended in the generally conceded failure of the extreme form of neopositivism, i.e., "logical positivism." The basic contradiction is the opposition between the dynamic character of the system of knowledge considered in its entirety and the static terms into which the neopositivists attempt to reduce that system. This contradiction appears in the neopositivist efforts to reduce knowledge into

the "given," an objective which naturally follows from the neopositivist adoption of formal logic as the only model for interpreting knowledge adequately since the approach of formal logic "presupposes the existence of certain given elements of knowledge." That such a program is contradictory is revealed by the discovery of the fact "that the content of scientific concepts and, correspondingly, the content of assertions incorporating these concepts cannot be disclosed through concepts and statements about immediately observable content." Another aspect of this contradictory character of neopositivism is seen in the contrast between the "conditions of truth" encountered in investigation of objective reality and those required by formal logic. When we conduct actual investigations, what we encounter immediately - i.e., what the neopositivists would have to consider the empirically given - is reflected in qualitatively unique concepts constituting conditions of truth which are "non-comparable"; formal logic can work, however, only when we presuppose that the conditions of truth possess "comparability and homogenity," since without such a presupposition we could not establish the logical relations of equivalence, consequence and confirmability. The only way to bridge the gap between the non-comparability of immediate empirical truth conditions and the realm of scientific knowledge is to account for the process of abstraction and formation of new thought. But here again formal logic is not applicable, nor does classical induction fare any better since it can only generalize what is already available and so cannot explain the formation of "abstractions lacking immediate sensory content."[15] Thus the neopositivists dismiss the possibility of a logic of discovery, relegating to psychology the problem of explaining the formation of new

thought. Shvyrev finally concludes:

> The failure of the neopositivist "logical analysis of science," founded solely on the approach of formal logic, compels us to seek an alternative logical approach assuming investigation of the processes of elaboration of new thought content actually occurring in the history of thought and revealed, specifically, in the history of science.[16]

The "alternative logical approach," of course, is dialectical logic, and the ground for such an approach is the theory of reflection.

Our review of Shvyrev's article reveals the crucial thesis of the new Soviet rationalism, namely, that theoretic reason is not merely an interpreter of sense experience but also a reflector of objective connections and relations. Proof for this thesis is found in the failure of attempts to reduce the theoretic component of scientific knowledge into reports of sense experience. These failures, however, testify against the sense-oriented empiricism of MEC as well as against the reductionist program of neopositivism, though Shvyrev does not make his rejection of Lenin's early empiricism explicit. Our review also shows how for Soviet philosophy, the special claims of theoretic reason emerge out of the development of formalization techniques. Far from being hostile to this development, Shvyrev argues in effect that one main reason we must not "absolutize" formalization as the method of epistemology is to enable us to extend formalization techniques. He contends that by making the approach of formal logic the general method of accounting for knowledge, neopositivists leave us trapped in the "given" and unable to account for cognition as a process in development, as a result of which formalization becomes blocked by paradoxes and antinomies discovered by formalization itself. Formal reason, in brief, needs dialectical reason in order to grow.

In the following chapters, we shall see further examples of Soviet philosophers who try to defeat neopositivism with its own weapons and to solve epistemological problems by means of dialectical rationalism. We shall treat these writers specifically in terms of the ways their views involve the theory of reflection. Consequently, the next chapters will examine in detail the current Soviet theory of reflection as it relates to four main issues in Marxist-Leninist epistemology: (1) the standpoint from which we can account for all knowledge; (2) the vehicle of knowledge, or the "image" as "flexible concept"; (3) the interpretation of the "given" in neopositivism and contemporary Soviet Bildertheorie; and (4) the nature of "reflection."

V

COGNITION AS PROCESS

The fundamental issue raised in Shvyrev's article is the question of the standpoint from which we can account for knowledge in its entirety - what we shall now refer to as "cognition." The answer of Marxist-Leninism today and yesterday is that this standpoint must be an historical one, i.e., one from which cognition can be viewed as a "process" taking place between mankind and objective reality or "matter." The prime consideration is that it be seen as a "process." As such, cognition is explainable only by reference to inter-acting entities and hence demands causal rather than purely logical explanation. The identification of these entities as man and matter and the causal characterization of their interactions constitute, as we have seen, the Leninist theory of reflection. The logic of that characterization and hence of cognition in general is "dialectics."

The assumption of the standpoint from which cognition can be viewed as a process is therefore of critical importance to dialectical materialist epistemology. The decision to make that assumption would appropriately follow the decision to take what we termed earlier "standpoint (2)," that from which we consider as an object the standpoint of the naive believer, or "standpoint (1)." Our early discussion of these basic distinctions which can be made in analyzing the epistemology of Lenin's MEC attempted to show how Lenin's theory of reflection could be

accounted for as a dialectical derivation of standpoint (2) from standpoint (1). Here we might add that viewing cognition as a process results from the need to cope with the contradictory interactions of consciousness and objective reality that constitute the dialectic of this derivation. As we have pointed out, however, contemporary Soviet philosophers offer little ground for dialectically relating reflection theory to naive belief.

We now attempt to characterize their view of cognition as "process" and to indicate the arguments they use to justify viewing it in this way, arguments which presumably would make an ultimate appeal to naive belief unnecessary. One argument has already been examined in our review of Shvyrev's article, namely, the argument that attempts of formal logicians to interpret scientific knowledge without reference to the processes forming it have failed both in accounting for all such knowledge and even "the structure of 'finished' knowledge and analysis of the meaning of assertions and statements."[1] The problem remains, however, as to whether what is required is possible within the bounds of legitimate philosophy. The neopositivists argue that the problem of the processes of cognition should be referred not to philosophy, but psychology. But they also point out that a psychological interpretation of these processes cannot help us solve problems of validation and verification of knowledge. Thus it would seem that there is no way of explaining cognition as a process which would enable us to do justice to the leading concerns of epistemology proper. In another article co-authored by P. V. Tavanets, "Some Problems in the Logic of Scientific Knowledge," Shvyrev makes the following reply:

> Let it be noted that when the anti-psychological school [those who opposed psychologically oriented philosophers such as Hartley, Mill, etc.] refused to see the cognitive process as subject matter of logic, they actually committed the same error as their opponents in the treatment of this process, because they confused the question of those truly individual psychological states that accompany the cognitive process leading to "discovery" (in the sense of elaboration of some new conceptual content) with the question of the objectively conditioned factors, which are independent of personal psycho-physiological characteristics, and which constitute the acts of thought necessarily leading to a definite result.[2]

Whether or not this reply is convincing, it makes clear an extremely important specification of the Marxist-Leninist concept of cognition as a "process": the process designates not how an individual thinks, makes judgments, feels certain, reasons, etc.; but rather how objective reality is increasingly understood. Thus, whatever psychology or "sociology of knowledge" may tell us about how an individual or group actually do form beliefs, this material is relevant to the "science of cognition" only insofar as it illuminates how men should form concepts and theories if they are to advance their understanding of objective reality. Consequently, the scheme of the cognitive process offered by the Marxist-Leninists is bound to be extremely abstract, for it must be not merely a generalization of actual intellectual behavior but an idealization of what intellectual behavior should be. And yet Marxist-Leninists are committed to materialism and the doctrine of "practice" as the criterion for theory, including, presumably, the theory of knowledge. How are we to relate, then, such an idealized scheme to objective reality as we are required to do by Marxism? And how can we verify or confirm such a scheme? These questions raise fundamental difficulties for Marxist dialectics, a thorough examination of which is beyond the scope of this study. But they also create problems for the ground of dialectics, i.e.,

the theory of reflection, especially the problem of limiting the study of reflection in such a way that cognition and not just belief may be given an explanation that is both adequate and confirmable.

One way Marxist-Leninists obtain such limits is, in the words of Shvyrev and Tavanets, to regard "the process whereby knowledge advances" as the "subject matter of logic only when this process is regarded as that of the historical development of human cognition, the 'subject' of which is not any single individual but mankind as a whole."[3] But where would we find the record of the development of cognition on the part of "mankind as a whole"? We would find it "revealed," says Shvyrev, "specifically, in the history of science."[4] That history would provide the concepts and assertions which at one time or another were held to be adequate or true by scientists - the intellectual spokesmen for "mankind as a whole"; the reasons why these concepts and assertions were dropped or changed; the pattern (if any) of interaction between objective reality and man's efforts to use it for his purposes; and, in short, all that is needed for both the subject matter of a "science of cognition" as a process and the means for confirming and disconfirming assertions within that science. This "science of cognition," of course, turns out to be "dialectics," the three fields of "dialectics," "logic," and "theory of knowledge" being held by some Soviet philosophers to be ultimately one and the same.[5]

Two questions arise here: (1) does the history of science really provide the materials and criteria needed for a "science" that studies cognition in "process" and at the same time does justice to questions of verification and validation? and (2) does the "history of science" replace

naive realism as the foundation of Marxist epistemology?

I. V. Kuznetsov, in his article, "But Philosophy is a Science," (Voprosy Filosofii, 1962, No. 1) answers the first question affirmatively. Kuzentsov is replying to A. J. Ayer, who had denied that dialectics could be a science in his articles "Philosophy and Science," appearing in the same issue of Voprosy Filosofii. Against Ayer's contention that philosophical assertions cannot be proved or disproved by empirical means, Kuznetsov declares:

> The data of natural science which express, in concentrated form, all the riches of the experience accumulated by man in the study of nature, are always employed as proofs of the correctness of certain philosophical theories and of the incorrectness of others.[6]

Kuznetsov recognizes that the "proofs" provided by science are of propositions relating to a specific scientific field. His point is that general philosophical theory can entail such propositions and hence receive some degree of confirmation or disconfirmation when those implications are scientifically tested. But the universality of a philosophical "law," though indirectly evidenced by testable implications, is not itself subject to an experimentum crucis - no more so, argues Kuznetsov, then is the universality of "the most general theories of natural science."[7] Presumably Kuznetosov considers that the experimentum crucis is limited by the impossibility of reducing all theoretic knowledge to empirical knowledge.[8] What is important for a philosophy to be called a "science," says Kuznetsov, is that like any science (1) it should be concerned with laws - e.g., the concern of dialectical materialism with "the most general laws of the development of nature, society, and thought"[9] and (2) that these laws should be in fact as universal as they

claim to be. To determine (2), however, we must be careful to note, says Kuznetsov, exactly what class of entities a law is generalizing. Otherwise we can mistakenly reject as illegitimate such correctly formulated laws as those of Marxist dialectics. The law of conservation and transformation of energy, for example, applies to all forms of energy-transfer; the principle of causality applies to all kinds of causes; and the universal concept of "dialectical contradiction" applies to all relationships of "mutually opposing and excluding, but interpenetrating tendencies or aspects of phenomena."[10] Ayer, therefore, is absurd, says Kuznetsov, when he declares the principle of causality to be unverifiable and meaningless because it cannot be universally specified for observable phenomena in the precise sort of way that mechanical causes can sometimes be specified for them. Similarly, Kuznetsov adds, Ayer is absurd in demanding that the general concept of dialectical contradiction be applied to instances of a particular class of causes when the concept refers to the class of classes of causes. Kuznetsov in effect is thus charging Ayer with the fallacy of mixing logical types, specifically, those designating natural classes.[11]

What should be noted here is that in justifying dialectical materialism as a science, Kuznetsov at every point seeks to establish an analogy between it and the structure of any science. We recall how Shvyrev tried to show that in highly general sciences theoretical concepts cannot be reduced to empirical content and yet are essential to make that content manageable and intelligible. This argument cleared the ground for dialectical materialism whose concepts obviously cannot be directly tested but which purportedly have the same function as a theore-

tical concept such as "energy," namely, to give empirical phenomena cognitive value by way of mediated confirmations. Kuznetsov's answers to Ayer apply that argument and indicate one reason for the irreducibility of theoretical to empirical knowledge: the logical hierarchy of natural classes. Another way used by Kuznetsov to argue the affinity of dialectical materialism to the general structure of science is to show that like any science it is confirmed in "practice," though on the highly general level of dialectical materialism, "practice" would immediately pertain to the development of only the most general classes of science - the sciences of "nature, society, and thought."[12]

The second question, which asked whether in Soviet epistemology the history of science replaces naive realism as the foundation of knowledge theory, would also seem to be answered affirmatively by Kuznetsov:

> That "realistic image of the world" is oversimplified which sees the picture of nature which is furnished by a totality of empirical statements as completely free of the influence of "conceptual systems."[13]

But though Kuznetsov therefore agrees with Ayer's criticism of "this kind of realistic depiction of the world," he says that Soviet philosophers

> would like to see in this connection . . . a sharper and clearer stressing of the circumstances that, in any empirical determination, with its complex dependence upon theory, objective reality <u>is</u> given, the world outside <u>is</u> given, nature <u>is</u> given.[14]

And yet how do we know that "objective reality," etc., is "given"? Lenin invoked naive belief, certified - perhaps circularly - by scientific "practice." Kuznetsov simply asserts it to be so, and then goes on to show how irreducible theoretic concepts and statements can relate to the external, independently existing world, viz., as "an objective and relatively true reflection of nature."[15] "Practice" thus functions for

Kuznetsov as the means of determining which systems of science - including, pace Ayer, systems of scientific language - most adequately reflect nature.[16]

The problem arises, then, as to how a thesis of naive belief - namely, that the world is the observable - is refuted by an interpretation of science that depends ultimately on an unsupported assertion; viz., "the world is given." The difficulties increase when one tries to find support for this assertion which would not also be a thesis of naive belief. If we cannot find such support, then we are left in the absurd position of using the same ground for justifying the denial of a thesis, that justifies the affirmation of this thesis. In other words, if the statement, (A) "Whatever naive belief certifies is true," is the only one that justifies the statement, (B) "The world is given," and if (A) also justifies the statement (C), "The real is the observable," then an argument denying (C) cannot depend upon (B) without entailing the consequence that (A) implies both (C) and not (C).

There is, however, a way out: we could argue that naive belief should be interpreted not as a fixed set of propositions but as a self-correcting and self-developing "ground" of empirical knowledge, i.e., as the beginning of what Marxists call the "subjective dialectic,"[17] the most embracing development of which is dialectical materialism. That is the solution we offered in the interpretation of Lenin's theory of reflection presented earlier in this study. When we turn to the issue of the "given" in current Soviet epistemology, we shall see further reasons why Soviet philosophers need such a solution to reconcile Lenin's naive realism with their reliance on positive science as the basis of knowledge theory. This

is not to suggest, however, that Marxist-Leninists can do without science as such a basis. As Kopnin explains in his article, "Dialectics," in the Philosophical Encyclopedia,

> Materialist dialectics poses as its goal a scientific understanding of objective reality, reflection of the world as it is in reality. This concept of reality is possible only as a generalization of the entire sum of human knowledge.[18]

According to our proposed solution, the findings and history of science would constitute the ultimate criterion of judgments about naive belief, i.e., those made from "standpoint (2)." No criterion for such judgments could exist within "standpoint (1)," of course, for the distinctive characteristic of that standpoint is that in taking it, we do not talk about naive belief at all - we simply assert its findings. The problem, though, is to determine on what grounds one decides to take "standpoint (2)," especially as it is qualified within dialectical materialism, and this question seems yet to be faced by Soviet epistemologists.

Having seen some of the major problems faced by Soviet epistemologists in basing knowledge theory on a view of cognition as a process, we should note here the basic arguments in favor of viewing cognition in this way. The fundamental one, mentioned earlier in this study, is that adequate cognition must reflect objective reality, and hence the dynamic character of the latter. In his Philosophical Notebooks, Lenin makes this further observation:

> . . . if everything develops, does not that apply also to the most general concepts and categories of thought? If not, it means that thinking is not concerned with being. If it does, it means that there is a dialectics of concepts and a dialectics of cognition which has objective significance.[19]

Considered out of context, Lenin's remarks seem to suggest that thought

cannot help being dialectical since thought is itself part of the processes constituting the universe. But shortly after he makes it clear that adequate thought is not provided by an automatic reflection of processes. Quite the contrary, the nature of thought is such that

> We cannot imagine, express, measure, depict movement, without interrupting continuity, without simplifying, coarsening, dismembering, strangling that which is living. The representation of movement by means of thought always makes coarse, kills - and not only by means of thought, but also by sense-perception, and not only of movement, but every concept.[20]

In fact, it is precisely because of this antagonism between the static terms required by the understanding and the dynamic character of the reality to which they are applied that adequate thought must be described in expressions that shock the understanding. In that antagonism, says Lenin, "lies the essence of dialectics. And precisely this essence is expressed by the formula: the unity, identity of opposites."[21] There is, of course, a serious difficulty here. If conceiving phenomena as processes in some way violates the natural understanding, then what in man's nature makes such conceptions not merely possible, but historical? What supplies the connection between naturally static "thinking" and dynamic "being" insuring "a dialectics of cognition which has objective significance"?[22] Once again what seems to be required is the solution offered in our outline of a Leninist theory of reflection, namely, the derivation of dialectical understanding as a self-development of contradictions within naive belief. Passages in the Philosophical Notebooks indicate that Lenin would accept such a solution in principle. He observes, for example, that "not only is the transition from matter to consciousness dialectical, but also that from sensation to thought, etc."[23]

Elsewhere he ventures this psychogenetic-Hegelian description of cognition in process:

> First of all impressions flash by, then something emerges - afterwards the concepts of quality (the determination of the thing or the phenomenon) and quantity are developed. After that study and reflection direct thought to cognition of identity - of difference - of Ground - of the Essence versus the Phenomenon - of causality, etc. All these moments (steps, stages, processes) of cognition move in the direction from the subject to the object, being tested in practice and arriving through this test at truth . . . .[24]

The current Philosophical Encyclopedia of the Soviet Union restates in essence the fundamental argument mentioned above for viewing cognition as a process, viz., the thesis of the coincidence between the subjective and objective dialectic that must take place for cognition to be adequate. Another basic argument for viewing cognition as a process is stated by I. Narskii and T. Oizerman in the article on "Truth" appearing in the Encyclopedia. The point of these writers is that unless cognition is viewed as a developing approximation of absolute truth, then the continual changes in the formulations of science may be sceptically interpreted as proof that truths are only relative, or the apparent endurance of other formulations may be idealistically interpreted as proof that the only real truths are absolute and eternal. Understanding truth as "a historically conditioned process of reflection of reality" avoids both these errors; as Lenin put it, dialectical materialism

> recognizes the relativity of all our knowledge not in the sense of denial of objective truth but in the sense of the historical conditioning of the limits of approximation of our knowledge to this truth.[25]

Summary

Summarizing our observations on the Soviet view of cognition as "process," we note first that this view means that we should conceive the

theory of reflection as a causal characterization of the developing interaction of mind and matter, a process involving, however, not what always takes place in this interaction, but rather what should take place in order for the mind to know truth. Characterized in terms of this purpose, the process of cognition is not the interaction of individual men and matter but the interaction of all mankind and matter, the results of which comprise the history of science. Specific characterizations of the laws of the process of cognition therefore become testable by reference to the findings of science. Soviet philosophers, however, warn us against the error of neopositivists who mix what we might call "natural" types when testing these characterizations. The most general laws of cognition refer not to the special subject matter of a given science, but to the laws of the sciences directly subsumed under cognition in general, i.e., the sciences of nature, society, and thought. When tested by their reference to the laws of these general categories of science, the characterizations of cognition constituting dialectical materialism are established as "laws" which themselves constitute a science - the science of cognition. One of these fundamental "laws" is that since objective reality is in process, adequate cognition of objective reality must also be interpreted as in process. Our study has also shown that a basic technique employed by Soviet philosophers to prove their thesis that cognition must be accounted for as a process, is to show how semantics and logical analysis cannot consistently explain the structure of even "finished" knowledge when the dynamic character of cognition is not recognized.

We note, finally, our own comment that though the history and prac-

tice of science may contain the ultimate criteria for testing characterizations of cognition, yet we still need to resort to the "naive belief of mankind" to explain the adoption of those criteria and the evolution of scientific knowledge out of the primitive acceptance of the world required for human survival.

VI

"FLEXIBLE CONCEPTS" AND THE "GIVEN"

The issue of cognition as a process leads naturally to another central issue in Soviet epistemology: the question of the "flexibility" of concepts. If cognition should be interpreted as something in development, then the knowledge of any particular thing should be explicable as an increasing understanding of that thing. But how exactly are we to identify that which increases? If we say that a set of propositions (A) is replaced by a set including more general propositions (B), we may satisfy the logical analyst but not the Marxist dialectician, for such an answer leaves unexplained the phenomenon in which the dialectician is most interested, namely, the cause of the replacement of (A) by (B), and also consequently the entity on which that cause operates. The Marxist answer adopted from Hegel is what we may term for simplicity's sake the "flexible concept." It is this whose development constitutes the increasing knowledge of a thing and the compounding product of causes identifiable by dialectical materialist inquiry.

Before we can appreciate modern Soviet criticism of epistemological reliance on the "given," or the Soviet theory of reflection that incorporates this criticism, we must consider this notion of the "flexible concept" in some detail. We shall proceed first by explicating its meaning and then by showing how it is used in Soviet epistemology.

The importance of the flexible concept is stated forcefully by

Lenin in a comment on Hegel in the Philosophical Notebooks:

> All-sided, universal flexibility of concepts, a flexibility reaching to the identity of opposites, - that is the essence of the matter. This flexibility, applied subjectively = eclecticism and sophistry. Flexibility, applied objectively, i.e., reflecting the all-sidedness of the material process and its unity, is dialectics, is the correct reflection of the eternal development of the world.[1]

The contemporary Soviet philosopher Rozental puts Lenin's observation more simply:

> Concepts reflect the objective world in its contradictory, dialectical development and reveal the contradictions in the very essence of things and processes . . . Since concepts reflect things in their dialectical development and change, they themselves cannot be fixed and rigid. Concepts - like the things whose reflection they are - dialectically change, are in constant movement and pass one into the other.[2]

How can this notion of a moving, developing concept be made intelligible in ordinary terms? What significance does it have for interpreters who wish to do justice to Marxist-Leninist epistemology? We shall try to achieve some clarity by considering, quite simply, how one might speak of a "flexible concept" of one actual table. First, of course, in conformity with the fundamental Marxist approach to knowledge, we must assume that what we seek is a history of cognition - in this case, of the cognition of a table. The range of this particular history extends back through the history of language, technology, anthropoid development, the evolution of life, even the development of matter and energy interactions. But for our purposes it is sufficient to interrupt the history at the point where an indiviual learns to use the word "table" for what ordinary experience reveals the given table to be.

How is it possible that he uses this word correctly? To say that he does presupposes there are entities which he could apply it to incorrectly, that the criterion of correctness of usage is therefore independent

of what he wishes, and, in short, that there are tables. To say that he does also presupposes that he can use the word correctly. This ability is inexplicable unless we assume he has associated with the word "table" not merely other words constituting definitions, but something making comparison of tables with non-tables possible. That "something" we shall term a "concept," no other specification being needed for our present purposes.

Now it is a fact that an individual can discover a great deal about the table before him that his table-concept enables him to identify. Moving to the limits of modern physics, he can find that the four-legged, solid, colored and stable object revealed to his senses is a virtual universe of energy-particles whirling at speeds near the speed of light. What sort of relationship, then, can we find between (1) the table-concept associated with the ordinary sense-oriented definition of table, and (2) the table-as-atomic-universe concept derived from the application of modern physical analysis? Here we encounter the fundamental Soviet criticism of Western logical analysis - the criticism we reviewed earlier in our discussion of Shvyrev's articles: if considered as given, at-hand, finished, or, in other words, as entities capable of fixed definitions so that they can be assigned terms or values enabling a mathematical or formally logical analysis to be made of them, concepts (1) and (2) are not significantly comparable. The definition of (1) tells us nothing about the definition of (2); and the descriptions of (1) and (2) virtually contradict each other. Nor is there useful analogy between (1) and (2), for if, in accordance with the method of analogical inquiry we are looking for similarity rather than causal inter-connec-

tions, we will find more similarities between the ordinary descriptions of a stone and a table than between (1) and (2). The ways in which (1) and (2) are used are also incomparable, nor can inspection of (1) and (2) as fixed entities reveal any class relationships between them. A strict semantic or logical analyst would probably have to conclude that one who says (1) and (2) are both a "table" concept is speaking as meaninglessly as a Thomist who says "good Harry" and "good God" are both applications of a "goodness" concept. Refusing to subordinate semantic and logical analysis to causal explanation, such an interpreter has no apparatus for establishing the meaning of a theological concept of goodness as a dialectical development of a concept of human goodness, especially when these two concepts appear in isolation to be fundamentally contradictory (here we are considering, of course, only the meaning, not the truth of concepts). For the same reason, logical analysis becomes inadequate for interpreting any case of a developing concept.

On the other hand, Marxist-Leninists could argue, if instead of comparing concepts as fixed entities, we are concerned with causally tracing the process of cognition, we can find extremely significant relations between the ordinary table-concept (1) and the table-as-atomic-universe concept (2). First, we could determine that (1) and (2) refer to the same entity. That fact could not be ascertained from mere comparison of the concepts and so a logical analyst could only arbitrarily introduce it. Secondly, we could see that though both (1) and (2) are referring to the same entity in opposing ways - concept (1) designating the stability, solidity, and coloredness of the table, and concept (2)

designating its internal motion, open spaces, and insensibility - both concepts are true reflections of the table. Again pure logical analysis could account for the truth of both (1) and (2) only if it were assumed that the entity the concepts refer to is not the same. Logical analysts could, of course, say that (1) and (2) refer to different aspects or ontological levels of the same table, but once more they would be introducing what strictly speaking cannot be inferred from comparison of (1) and (2).

Thirdly, causal analysis shows that in the process of discovery, (2) depends upon (1); i.e., we could not arrive at an understanding of the table as a structure of electromagnetic fields and components unless we were first able to see the ordinary table. More generally, we could say that there are concepts whose formation is impossible unless fundamentally less adequate ones of the same entities were previously formed. The necessary sequence of such concept formations would be one thing for the history of knowledge - e.g., the impossibility of modern physics having arisen without the preceding development of Newtonian physics - and another thing for the history of an individual's learning - e.g., the necessity to understand the literal meaning of an ironic statement in order to grasp the ironic meaning it contains.

[We should note here, incidentally, that inspection of all such concept sequences would reveal the reasonableness of Lenin's basic epistemological principle, namely, that the "naive belief of mankind" is the foundation of knowledge. That inspection would also reveal the sense in which Lenin's principle is defensible: the naive belief of mankind is the foundation of knowledge insofar as scientific knowledge and epistemology

develop dialectically from the concepts acquired in naive belief. Can logical or semantic analysis provide any of these insights into the causal dependence of concepts? Reichenbach presents the prevailing answer of Western philosophy of science: the finding of such explanations of causal dependence among cognitive concepts

> . . . falls into the context of discovery and is subject to analysis only psychologically, but not logically. It is a process of intuitive guesswork and cannot be depicted as a rational procedure, controlled by the laws of logic. I refuse to go along with the appeal to determine the rules of the logic of discovery. There are no such rules.[3]

A "psychology" of concept formation, of course, could not do justice to the epistemological issues involved, as both Western and Soviet philosophers point out.[4]]

Fourthly, causal analysis of (1) and (2), proceeding from the principle that concepts are reflections of an independently existing reality, reveals that (2) differs from (1) only because (2) exhibits the universal connections and causes of what (1) identifies. This fact is the basis of the meaningfulness of speaking about the different "levels" of reality which can be found in the same object, and of the dialectical principle that the perfectly "concrete" object is apprehended only when we grasp all the determinations of the object, when we understand its immediate, intermediate, and fundamental causes (an ideal, of course, we can only approximate).

Fifthly, causal analysis reveals that what (1) identifies is the product of what (2) identifies. In other words, the subjective order of discovery is in a sense opposed to the objective order of generation. Let us consider what is involved. It is now clear that an individual's discovery of the atomic structure of an ordinary table can be apprehended

as the development of his initial table-concept (1). This development is such that increasingly general levels of information about the same entity are apprehended, the truths at the most general levels apparently contradicting those at the initial level. Furthermore, the nature of the knowing mechanism requires that the development of this process of discovery proceed in that way. This exemplifies what Marxist-Leninists term the "subjective dialectic." But it is not only the nature of consciousness that determines the dialectical development of this cognition. The character of what is studied is also a determinant. The dialectical character of what is studied, however, does not simply re-inforce, guide, or coincide with the inherent dialectic of consciousness; nor does the former make the latter a mechanical image or mirroring of the "objective dialectic," the Marxist-Leninist term for the counter to "subjective dialectic." For the order in which the concepts of a thing are generated, which makes the most fully determined concept a product of the least determined, does not at all signify, for example, that the atomic structure of the table is a product of the ordinary appearance of that table. Quite the contrary, the order in which things are produced is generally the exact opposite of the order in which concepts of that chain of production are generated. Thus, though the subjective dialectic is a reflection of the objective dialectic, it is in an important sense a <u>reverse</u> reflection of the latter. The two principles of dialectics, in other words, are themselves dialectically related. So far our discussion of the flexible concept has revealed at least the intelligibility of the Marxist-Leninist theory of cognition as a process. The notion of the "flexible" concept enables that theory to account for the increasing understanding of

a thing as the developing of a concept that undergoes qualitative changes of form, opening more and more general connections with all other things, and in developing, following a course set by the interaction of opposing necessities. The flexible concept doctrine also illuminates the heuristic aspects of dialectics. "Flexibility" is the "essence" of dialectics because the flexible concept is the basic meta-notion not only of an adequate account of knowledge, but also of adequate prescription for acquiring knowledge. Hence Lenin's insistence that scientists and philosophers keep their concepts "flexible," i.e., able to change with discoveries and to become ever more many-sided. Hence also the claim of dialectical materialism to be itself the quintessence of cognition since it is both the theoretic and heuristic doctrine of the essence of developing knowledge, viz. the flexible concept.

But the most important thing for interpreters of Marxism-Leninism to bear in mind is the profound way the Leninist notion of concept differs from the notion of concept common to the dominant Western trends in philosophy that consider formal logic and mathematics to be the model of the highest knowledge. In those Western traditions, fixed definitions are essential, and "concepts," if introduced at all, must also be regarded as stable; otherwise arguments cannot be made which hold according to rules analogous to the rules of formalized science. In Marxist analysis, however, a concept is stable only insofar as it is taken as reflecting one object of study rather than others. Furthermore, as we learn more about the object, as the connotation of its original definition broadens, the concept of the object is not merely <u>dropped</u> by the Marxists in favor of a more adequate one; the concept is said to <u>develop</u> into a more adequate one, for

the continuity between the old and the new understanding of the object must be marked by Marxist terminology since it is precisely the cognition of that continuity which reveals both how reality conditions knowledge and how reality must be structured to effect such conditioning, i.e., the twin goals of Marxist epistemology, subjective and objective dialectics.

One important adjustment, however, must be made in our interpretation of the dialectical flexible concept. That interpretation was developed from an analysis of the increasing cognition of an object which is an individual existent entity, i.e., a table. For convenience, we shall refer to concepts of such objects as "res"-concepts. In dialectical materialism, however, the concepts of epistemological concern refer not to existent entities but to highly general complexities of relations such as those designated by the terms "philosophy," "science," "cause," "contradiction," "existence," "reflection," etc. How then can our interpretation be helpful in illuminating the approach of Soviet epistemology to flexible concepts such as these?

Basically, what we must recognize is that the development of what we may term these "generality" concepts is roughly the reverse of the development of a res-concept. Our presentation of a fully developed res-concept suggests a structure analogous to an inverted pyramid intersected by lines representing ever more general connections with other existent entities by way of the participation of the original entity in ever more general, yet distinct systems of natural laws. A fully developed generality concept can be represented as also being structurally analogous to such a pyramid. The difference would be that in the first case what is

developed is located at the inverted apex of the pyramid; in the second case what is developed is located at the inverted base. Thus, in contrast to the movement of the subjective dialectic applied to a res-concept, the cognition of a generality-concept would proceed through the discovery of not ever-more general connections of an existent with other existents, but ever-less general connections among existents subsumed under the concept.

At the same time, however, we must recognize that the movement of cognition directed to generality-concepts is only roughly the reverse of that directed toward res-concepts. Actually, the movement of cognition in the first case is quite complex - just as it is in the second case. The most significant complicating fact is that since the generality-concept to be developed is not determined or established, the "laws" or relations it embraces would be discovered not as instances of it, but as evidences for it, and so the generality-concept would be liable to continual re-adjustment and redescription until all the evidence was in, i.e., until we could perceive in particular existent entities the operation of the hierarchy of laws embraced by the concept. Thus, just as in the unfolding of the res-concept there is an opposition between subjective and objective orders of development - specifically the order of discovery vs. the order of objective causation - so in the development of the generality-concept there is also an opposition between the two orders, namely, between the orders of confirmation and objective causation. For in the case of the generality-concept, though the movement of inquiry from the universal to its concrete manifestations coincides with the objective causal order, it proceeds this way only by virtue of

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establishing in "practice" that what is at-hand is the product of something more general. The manner of this movement reveals three important relations. First, the reversal relation between subjective and objective dialectics which we previously observed in the development of res-concepts is revealed as holding also in the development of generality-concepts. Second, the order of confirmation in the development of a generality-concept is clearly intimately related to the order of discovery in the development of a res-concept. Third, the development of a res-concept cannot take place independently of generality-concepts, a point we saw emphasized in Shvyrev's criticism of epistemological reliance on the "given"; on the other hand, the development of a generality-concept cannot take place independently of manifestation in res-concepts, a point which we will consider further in discussing our next subject, the "concrete universal."

The Hegelian-Leninist term, "concrete universal," designates the fully realized form of the generality-concept, the ideal development of the "flexible" concept. Lenin comments on Hegel's phrasing of this ideal as follows:

> A beautiful formula: "Not merely an abstract universal, but a universal which comprises in itself the wealth of the particular, the individual, the single" (all the wealth of the particular and single!) !! Tres bien![5]

The Soviet philosopher Kedrov introduces this dialectical notion of the universal by first characterizing the formal notion of the universal or "general" common in neo-positivism, specifically, as represented by Ayer. The formalistic understanding of the category of the general, says Kedrov,

> is based on the idea that generalization is a process of impoverishment of a concept, a process of consecutively depriving it of the characteristics possessed by narrower and more special concepts . . . . If we continue this operation of generalization, it is <u>impossible</u> to arrive at . . .

ever broader and more impoverished definitions of concepts, such as a living being in general, a body in general, matter in general, existence in general. The broader and more general the concept we establish, the emptier and more lacking in content it will be when approached in this formal manner, and therefore the less useful for us, inasmuch as it may be applied in absolutely identical fashion to everything, and consequently to anything.[6]

Having only this notion of the general, Ayer and other neopositivists naturally interpret the high generality of the laws of dialectics as virtual contentlessness and so criticise dialectics as being in principle irrefutable, applicable to anything and hence nothing, and, in brief, useless.[7] But for Marxism, says Kedrov, truth is "concrete," not abstract, and analysis of concrete truth shows that "the general, wholly freed of anything specific, distinctive and individual, of everything special, does not exist." Thus in dialectical logic one takes

as point of departure the unity of general and specific, all-inclusive and individual, universal and particular. The general exists only within and through the specific. The general must always be approached in such fashion as to reveal how it is manifested specifically in the given particular and special phenomenon, how it reveals itself through the given specific and distinctive context, and under given (and not under any and all!) concrete conditions.[8]

In contrast, then, to the formal interpretation of the universal as an abstraction and detachment from the particular, the dialectical ideal of the universal is a universal apprehended as including all its particulars; a universal capable of being apprehended this way is capable of reflecting the connections and particularities of objective existence, and the particulars it embraces can become cognized as determined and concrete (though, of course, only approximately). It is the character of these including and determining relations between the particular and the universal, the res-concept and the generality concept, that the preceding paragraphs have attempted to elucidate.

For Soviet epistemologists, the "flexible" concept, then, designates what develops in the development of cognition. It is their interpretation of what would be called an adequate "image" in Lenin's MEC, the term "image" now considered to mean broadly, "the result of cognition," and narrowly, the result of "sensory reproduction" of objective properties.[9] We suggested that the structure of the ideal, fully realized form of the flexible concept - i.e., the "concrete universal" - could be compared to a pyramid of qualitatively distinct levels of laws, the "higher" levels characterizing the laws on the immediately lower levels. We should now point out that we know we have adequately formulated the highest level of a flexible concept when we see not only that the laws on this level characterize those on the immediately lower level, but also that the higher laws enable us to give a genetic account of the structure of the phenomenon we seek to conceptualize. Such an account should identify the basic contradictions, the development of which determines the reflected structure. The laws on the highest level of a concept should also reveal the qualitatively distinct state or activity in which the basic contradictions of the process studied are finally synthesized. Finally, the laws on the highest level will provide the criteria for ultimately testing propositions referring to lower stages of the process conceptualized, though those laws are themselves confirmed only when we have established them as reflecting the result of the whole process.

We may now consider some applications of the doctrine of the flexible concept. In his article, "Philosophy as a General Science," B. Kedrov makes it clear that for Soviet epistemology the key flexible concept is that of "science," which is at once the realized general form, the synthesis,

the criteria ground, and the dialectical product of all possible cognitive concepts. The concept of science is also the source of the most general features of a flexible concept which characterize its highest level of development. Explicating the structure of the concept of science, Kedrov presents the interpretation of a concrete universal outlined above, i.e., the notion of a hierarchy of laws ascending in generality, the laws of a higher level generalizing those on the immediately lower level. Through such an interpretation, the laws on the most general level are then seen to be those of "general science" or dialectical materialism, in which form the concept of the function of "philosophy" attains its fully determined character. This interpretation also makes possible a refutation of Western objections that "dialectics" do not apply directly to particular phenomena: such objections commit what might be called the fallacy of mixing "natural" types; they fail to recognize that the most general laws of science are generalizations about laws only on the immediately lower level, namely, the laws of nature, society, and thought. Explicating the genesis of the concept of science, Kedrov is also able to explain by way of the principle of the flexible concept how both the special sciences and philosophy found their specific characters through their dialectical inter-relations.[10]

Occupying the apex of the pyramid of all knowledge, dialectical philosophy is not only the synthesis, however, of all the sciences, but also the ultimate source of their criteria. P. V. Tavanets and D. P. Gorskii therefore try to show how dialectics supplies the foundations of formal logic in their respective articles, "Formal Logic and Philosophy" and "Formal Logic and Language."[11] In his article, "Methodological

Problems of Natural Science," Kedrov tries to show how dialectics can also reveal the foundations of methodological concepts in natural science.[12] These articles reveal the determining role of dialectics, however, not so much by offering arguments for its existence, as by using the dialectical features of the flexible concept to characterize the development of logic and natural science. Gorskii provides an exceptionally full account of the concept of "formal logic" as a flexible concept. I. S. Narskii also makes use of the flexible concept principle to characterize the basic concepts of epistemology; he distinguishes six levels of "existence" and four levels of "truth", in each case integrating the levels in accordance with the scheme of the concrete universal described above.[13]

We also may note the way Soviet epistemologists sometimes appeal to the principle of the flexible concept in order to avoid the charge of circular reasoning so commonly directed against dialectical materialism. Gorskii states the essence of their position: "Reconsideration of the primary does not mean marking time in one spot, but an advance of our knowledge along a spiral, as Lenin pointed out."[14] At a higher level of a developing concept, in other words, we can identify and characterize the lower levels; thus, though we may use a concept to characterize the same concept, we escape circularity because we are really dealing with two distinct stages of the concept. Furthermore, an essential property of the flexible concept is that it is self-developing because it is self-correcting. Gorskii uses these considerations to show how circularity can be avoided in deriving the constants of formal logic from ordinary language.

Finally, we consider what for our purposes are the most illuminating applications of the flexible concept, namely, those that comprise Soviet criticisms of neopositivist reliance on the "given" as an epistemological category. This criticism provides the immediate context and justification for most of the characterizations of Bildertheorie made by Soviet epistemologists.

From our review of V. S. Shvyrev's article, "The Neopositivist Conception of Empirical Significance," we learned that Soviet philosophers regard the fundamental mistake of neopositivism to be "absolutization" of the viewpoint of formal logic. Proceeding from that standpoint, neopositivists, like formal logicians, consider all knowledge as "given"; they then limit epistemology to the elucidation of connections among the established, given facts. The inadequacy of this approach is evident, Shvyrev declares, when we recognize that knowledge is in process, a phenomenon which formal logic, a science of static relations, is unable to clarify. But Marxist-Leninist epistemology makes that recognition its starting-point. Utilizing the theory of reflection, it is then able to explain not only aspects of knowledge closed off to formal logical analysis, but also both that which is given in formal logic and the very structure of formal logic itself, the latter being explicable as a "reflection" of enduring properties and relations of objective reality.

Proceeding from the assumption of formal logic that all knowledge is "given," some neopositivists also tried to reduce all scientific empirical knowledge to the "given" by interpreting the "given" as the sensibly perceived or as the agreed upon (conventional). But as Shvyrev makes clear, this program of the logical positivists failed, for they could

find no way to reduce the theoretic entirely into the empirical, or to explain why a "natural law" is "universal" and "necessary," possessing one definite content rather than another. By regarding knowledge as a process of reflection of objective reality, however, Marxist-Leninists can explain the irreducibility of the theoretic in scientific knowledge: the theoretic aspect of science "reflects" objective connections in nature which cannot be apprehended by human senses alone. The necessary, universal, and determinate character of a natural law would also be explained as a "reflection" of these objective connections.[15]

A third error supposedly committed by neopositivists in their preoccupation with the "given" is their attempt to reduce ontology to what is required for formal logic, specifically, their equating of "existence" with the "given" in thought or perception and their consequent rejection of the need for a theory of reflection to explain knowledge of "objective" existence. The Soviet criticism of this effort is developed in detail in I. S. Narskii's article, "Formal Logic: Logical Positivism and the Concept of 'Existence'."[16] Narskii's argument is that though the equation of "existence" with the "given" may serve the limited purposes of formal logic, it is entirely inadequate for analyzing the epistemological questions of existence. Such an equation is effected only by divesting the concept of "existence" of its distinct meanings and converting it into an empty generalization, viz. "existence in general." By applying the theory of reflection and the principle of the flexible concept, Narskii tries to exhibit the structure of the meanings of existence blurred by neopositivist logicians and

to show how that structure depends upon the reflection of objective existence in increasingly complex forms of subjective existence.[17]

A fourth error which Soviet philosophers accuse neopositivists of committing is the elimination of the relation of "reflection" from an epistemological account of the relations between sentences, objects, symbols, and reality. P. V. Tavanets presents a Soviet analysis of this position in his article, "On the Semantic Definition of Truth." Sounding somewhat like a Kantian, Tavanets argues that cognition must be mediated through forms of consciousness which are not themselves the objects of cognition, a point also underscored by Narskii. Though possibly consistent with Leninist theory, this position is certainly not defended by Lenin either in MEC or the Philosophical Notebooks. The position, however, must be defended by contemporary Soviet philosophers in order to show, pace neopositivist semanticists, that the reflection relation is necessary to cognition. As Tavanets points out, the neopositivists account for the relation of true sentences to reality simply in terms of "expression" or "denotation," the notion of "reflection" being held by them to be superfluous. They are able to argue in this way, says Tavanets, because they begin in typically neopositivist fashion by dissolving fundamental epistemological problems in the "given," in this case, by making "reality" what is accepted by a "given" semantic system.[18]

In view of these Soviet criticisms of reliance on the "given," what, then, remains in Soviet epistemology of Lenin's repeated uses of that category? We may recall Kuznetsov's request for an emphasis upon the fact that "in any empirical determination, with its complex dependence upon theory, objective reality is given, the world outside is given, nature

is given." [19] It is not clear, however, what Kuznetsov would include in the "objective reality," "world outside," or "nature" that is "given" - nor indeed did Lenin offer much information about the limits of the "given" aspects of this entity. Surely not all of objective reality would be considered "given"; if it were, science would be unnecessary. Nor, on the other hand, could the broad philosophical categories of "matter" and "consciousness" be regarded as given - at least in ordinary experience. We again submit that the most reasonable way of giving content to the Leninist notion of the "given" is to identify the "given" with what is accepted when one assumes standpoint (1) - the standpoint of the naive believer. We also suggest that such an identification would not only do justice to Lenin's view of naive belief, but also enable Soviet epistemologists to make their criticisms of reliance on the "given" consistent with that view, for they could argue that these criticisms proceed from a higher, dialectical development of naive belief, or what Gorski termed the level of "practical-active thought" of pre-scientific men.[20]

But however we might succeed in reconciling Lenin and Soviet epistemologists on this question, the fact is that the latter are really not interested in establishing what is actually "given" in human experience. To do so might help them simplify epistemological assumptions, but simplification for its own sake was rejected as a Marxist ideal by Lenin in MEC.[21] Establishment of the given could also be helpful in making a genetic account of knowledge, but Soviet philosophers use genetic analysis not primarily to discover origins of knowledge but to enable further growth of knowledge or correction of erroneous philosophical views.[22] For Soviet

epistemology, advancement of knowledge and correction of errors is promoted philosophically through improvement of verification and confirmation procedures and the revelation of the dynamic structures of concepts; what verifies, confirms, and reveals, however, is not the elemental, primitive, or initial forms of concepts but the higher forms of them mediated and developed by dialectical reason.[23]

There is, however, another aspect of Lenin's interpretation of the "given" in MEC that Soviet epistemologists have not just neglected, but forcefully rejected, though without mentioning that they have thereby altered the early Lenin. We refer to Lenin's tendency in MEC to represent all knowledge as derived from sensation. We recall his agreement with the subjective idealist that "the first premise of the theory of knowledge undoubtedly is that the sole source of our knowledge is sensation."[24] We recall also his definition of "matter": "a philosophical category designating the objective reality which is given to man by his sensations, and which is copied, photographed and reflected by our sensations, while existing independently of them."[25] Moreover, the term "image" in the central thesis that our "images" reflect reality is repeatedly identified by Lenin as "sense perception," as in his denial that "there is an inherent incompatibility between the outer world and our sense-perceptions of it."[26] It is now clear, however, that Soviet epistemologists insist that reason also is a source of original knowledge and not merely some sort of a device that operates with sense-data. We saw, for example, how Shvyrev, in opposition to logical positivism, argued that knowledge cannot be reduced to what is given in sensory experience, that the accumulated contributions and development of scientific theoretic reason have

epistemological independence in the sense that though they can be related to immediate experience, they cannot be reduced to it.[27] This emphasis on the claims of theoretic reason is in keeping with the Hegelianism expressed by Lenin in the later Philosophical Notebooks. As we pointed out in the introduction to Chapter IV, the principal motive for this emphasis, however, is the need for Soviet writers to defend against neopositivism the very possibility of philosophy as a constructive discipline. Regarding abstractions, generalizations, "laws" and other products of reason as only products or "constructs" and not also "reflections," neopositivists, according to Marxist writers, tend to limit the role of philosophy - the most general or abstract of all disciplines - to mere clarification of the given.[28]

The rejection by Soviet epistemologists of what we might call Lenin's early "sensationism" enables them to treat the vehicle of cognitive reflection as the "flexible" concept, the result of reason and sensation acting together as reflectors of objective reality. It also frees them from defending the scientifically absurd suggestions in MEC that as images, "sensations" mechanically mirror reality; Narskii, for example, declares that "human sensations are positively not like the properties of light quanta, sound waves, etc."[29] Freed of responsibility for these absurdities, Soviet philosophers can then proceed to challenge the reports of sensation and immediate experience without contradicting the general principle that cognition is a process of reflection. The writing of Arnost Kolman, though according to his own words not representative of Soviet philosophy, illustrates an extreme effect of this "liberation" from the sensationism of MEC. In the following passage from

his article, "Considerations about the Certainty of Knowledge," Kolman reveals that the reaction against sensationism is also directed against the "naive ideas" which are supported by the sensationism, appeals to the given, and invocation of "naive belief" so characteristic of MEC:

> The main goal, therefore of these considerations [of Kolman's article] is a purge from naive ideas, which for different reasons stole their way into our Marxist philosophy. There is no place for them in a scientific philosophy. One of these naive ideas is the belief that constancy of spatial, temporal and material measures can be experimentally demonstrated; others are the idea that logical processes have absolute validity, that the mentality of man is identical; and many others, such as the possibility to prove the real existence of infinity, the unlimited possibility to know everything, and the consideration of rising evolution as the universal regularity of all beings.
>
> All these ideas cannot stand the criterion of scientific analysis, yet they are so deeply imbedded in our consciousness that they have become stubborn prejudices. They seem, at the same time, to fill a psychological need of man - originally of primitive man. Yet they are an outdated remnant in our own mentality, a defense against the hostile elementary powers of nature and society. It is essentially the same source from which faith in God, life after death, spiritualism, and belief in mystical supernatural phenomena are derived.[30]

It would be easy, of course, for conservative Marxist-Leninists - and Western critics of Lenin's epistemology - to find in MEC the "naive ideas" and primitive "faith" to which Kolman is referring; e.g., Lenin's pronouncements that "the forms of our sense-perception do resemble the form of the actual . . . existence of objects," that "objects . . . are fully knowable to us," and that "the laws of thought reflect the forms of actual existence of objects, fully resemble, and do not differ from, these forms."[31]

Kolman also develops an unorthodox argument for refuting both the neopositivists and the "naive" conservative Marxists who regard the "given" as an ultimate ground of certainty. The leading thesis of the article mentioned above is that the justification of induction, deduction, and basic

assumptions of science always involves a "vicious circle." This fundamental circularity in thought is a reflection, Kolman suggests, of the "everlasting circulation of matter" and the "unconquerable uncertainty" implied by this circularity demonstrates the classic Marxist position that knowledge advances by degrees and can never be total. But even these theses cannot be proved nor disproved. All these considerations demonstrate "that the old concept of a hard immovable basis of knowledge cannot be maintained."[32]

Kolman's radical defense of dialectical flexibility as opposed to the rigidities required by naive experience does not, however, invalidate the Leninist doctrine of "naive belief" as we have interpreted it. Actually, Kolman strengthens our case by showing the inescapable circularity of epistemology, for since this condition makes it impossible to justify rationally the assumption of a beginning point for inquiry, then there can be no objection in principle against accounting for such a beginning historically. One obviously supportable historical explanation is that inquiry could not have evolved into scientific inquiry unless men had first trusted the reports of their naive experience. The ground of this trust would then seem to be inexplicable except as a decision to live, a decision which requires one to assume, and have faith in, the standpoint of the naive believer until contradictions encountered there direct him toward higher levels of thought.

VII

THE NATURE OF "REFLECTION"

The last issue, the question of the nature of "reflection," brings us to the point where we should expect the most specific characterization of the subject of this study. As we earlier indicated, however, for Soviet epistemologists the importance of the theory of reflection lies primarily in its philosophical functions, viz., providing the foundation for epistemology in general, the grounds for exposing erroneous philosophies, and a set of assumptions in terms of which particular questions of logic, semantics, and scientific methodology can be settled. We have also noted that they consider it a fundamental mistake of neopositivism to expect that general laws of laws should apply directly to the subject matter of the laws embraced.[1] Furthermore, as we have attempted to demonstrate, it is essential to relate the theory of reflection to its context in Soviet epistemology if we are to appreciate its possible force as a theory, and the task of providing such preparation has required most of the space available to us for this study.

Two authors, however, do offer some direct and informative characterizations of "reflection." I. S. Narski, in his article, "On the Conception of Truth," appearing in the October, 1965 issue of Mind (pp. 530-539), clarifies the Marxist notion of reflection by relating it to Tarski's semantic definition of truth.[2] V. S. Tiukhtin, in two articles on the reflection of reality in cognition,[3] provides what we submit is a highly

fruitful interpretation of this notion by describing reflection in terms of relations and operations in cybernetics and allied fields.

Basically, Narski's article argues the same positions as Tavanets argues in an article previously referred to, "On the Semantic Definition of Truth."[4] For our present purposes, two passages deserve to be quoted at length. The first is a listing of the major ways in which the term "reflection" is used in Soviet epistemology. The order of the listing is not genetic, and the listing does not represent an analysis conducted according to the principle of the "flexible" concept, but the classification does show how generalized the Soviet notion of reflection must be for it to cover such a wide range of uses:

> . . . (a) cognition; (b) the result of cognition (= the epistemological image in the broad sense of the word); (c) the reproduction of the connections and relations of reality in the structure of scientific theories, and then their application in industry and technology and so on; (d) the process of reproduction of properties of objects and processes, occuring outside us, in sensory form (sensations, perceptions and 'Vorstellungen'); (e) the result of such sensory reproduction (= the epistemological image in the narrow sense of the word); (f) the active physiological reflex reaction of a living organism, and in particular of the human brain, to external influence, strictly differentiated in dependence on the character of the external influence; (g) the active reaction of a structural union in inorganic nature (correspondingly, in technology) to external influence, differentiated in dependence upon the character of the structure of the influence and by this very fact manifesting the nature of the latter.[5]

When we turn to Tiukhtin's analysis, we shall see how these aspects of reflection can be integrated in a cohesive, "flexible" concept, Tiukhtin paying special attention to aspects (g), (d), and (c).

The second passage to be quoted represents Narski's "application of the materialist conception of truth to the sphere of well-formed language," specifically, to Tarski's semantic definition of truth, ' "p" is true = p '. Regarding this definition as a formula for "fact," Narski

declares that dialectical materialism, as opposed to various one-sided philosophies which "absolutize" levels in the process of cognition, recognizes in that process at least four kinds of "fact" and hence can interpret Tarski's formula in the following ways:

> . . . (1) we have before us the names of true sentences, if these sentences are written within the framework of a theory ("language") in which are included only true sentences; (2) a sentence is true if the common essence (what is invariable) of the class of sentences, identical in sense to the given sentence, coincides with the proposition previously indicated as this common essence; (3) a proposition is true, if the perception of the facts correspond to it; (4) perceptions are true if they correspond to objective facts.[6]

It is worth noting that this classification represents a hierarchy of truth-conditions in reverse order; i.e., the truth-values established in (1) could be cancelled by those established in (2); those established in (2), by (3); and those established in (3), by (4). At the same time, the conditions for the expression of these truth-values proceed in an opposite direction; i.e., we would not be able to make determinations about (4) unless we were able to make determinations about (3); nor about (3), unless about (2); nor about (2), unless about (1). Narski here presents to us a perfect example of an explicated "flexible" concept in which genetic structure becomes fully revealed only at the highest level. He also shows in a very clear way that though facts are independent of the will and yet dependent on linguistic expression; that though facts must be expressed in linguistic forms which cannot imitate them; that though sentences and propositions are both inseparable and distinguishable --- the various senses in which these statements are true and mutually consistent become clear only when we recognize the different levels of facts he distinguishes and the basic role of level (4).[7] Level (4), of course, is

where Tarski's formula is interpreted in terms of the relation of reflection ("reflection," in the senses of aspects (d) and (e)), "p" read as "perceptions" and 'p' as "objective facts." We now turn to Tiukhtin's articles for a fuller characterization of reflection both as a process and the relation upon which, according to Narski, even the semantic notion of truth depends.

Tiukhtin's two articles are concerned not with proving the reality of the process of cognitive "reflection" but with revealing the grounds of its possibility. Secondarily, Tiukhtin seeks to develop the truth in an idea of Lenin's which has recently stimulated a great deal of Soviet writing: this is the highly incidental observation in MEC that " 'in the foundation of the structure of matter' one can only surmise the existence of a faculty akin to sensation."[8]

The first and most obvious condition for the possibility of cognitive reflection is that all knowable objects must be such that they can be regularly "reflected" and thereby known when brought into certain relations with the reflecting body which is the human mind. Matter, in brief, is generally reflectable. Lenin's thesis that reflection is a "universal property" of matter is thus at least true of reflection as reflectability.[9] But what, asks Tiukhtin, would be the basis for this reflectability of objects in the mind? Examination of the most general features of cognitive reflection shows that fundamentally two processes must be involved: (1) a species of "interaction" into which objects can be brought which is such that one body "imprints" its "structure" on another object, specifically, in the case of cognition, on the "mind"; and (2) the "identification" and "correlation" of the imprinted structure with the original

effected in such a manner that the agent of these activities is able to use the imprint as a "surrogate" of the original according to which the agent can transform environment into objects which match the imprint and hence the original. By "correlating" Tiukhtin means "matching, comparing and interpreting."[10]

Strictly speaking, reflection as "reflectability" refers to the process of interaction described above. The second process constitutes reflection as active cognition. Assuming that these are the basic processes of cognitive reflection, how did they arise? And what exactly are their epistemologically significant features? Tiukhtin answers both questions by a "genetic" account of reflection which, though drawing upon natural science, mathematics, and cybernetic engineering for its answers, is nevertheless epistemological since it considers these answers only in so far as they clarify "truth" - or what we might call "adequacy" conditions. As Kedrov explained, a Marxist "genetic" account is both structural and historical, "structure" being the key to - and in this case, the "imprint" of -history, and "history" being the key to the order in which the functions within the structure develop.[11] What is the point of departure for this epistemological genetic account? The basic thesis of Marxist epistemology is that consciousness and hence cognition is a "reflection" of objective reality. Tiukhtin initiates his analysis by interpreting this thesis as applying not only to the content of thought but also to thought as a form. In other words, he tries to show that the process of mental "reflection" itself somehow "reflects" a process of reflection in objective reality.

The qualifier "somehow" is vital. What it <u>excludes</u> is distinc-

tively mental reflection. To say that mental reflection is a mental reflection of an objective process involves us in hopeless circularity. Aware of the danger of a "vicious circle" in using concepts of reflection to define "reflection," Tiukhtin proposes to avoid it by using not a "coordination of concepts" but rather "a subordination of one to another, a genetic analysis (historical or logical)," the result of which would show reflection emerging "as a product of the complexity of organization and the development of the interactions among material systems."[12] The meaning of "reflection" at the lower level of this evolution would thus be distinct from the meaning of this concept at higher levels, while the general notion of "reflection" would include these distinct meanings and the interrelations among them rather than merely what is common to them. In other words, Tiukhtin seeks to characterize "reflection" as a "concrete universal," and in this way avoid circularity. Gorskii employs a similar procedure to avoid a vicious circle in his attempt to derive the notions of "logical constants" from ordinary language.[13]

But before we try to determine the sense in which according to Tiukhtin's thesis, mental reflection "reflects" a process of objective reflection, we must first make clear the purpose of making this determination. Tiukhtin's prime purpose is to identify not the physiological or chemical causes of reflective thought but the causes of epistemological relations and functions manifested in such thought. This goal is evident in his conslusion that

> the property of "being an image," a model, or reflection, is a functional property consisting not only of physical, chemical and physiological processes and their laws, but representing also a specific organization of

these processes thanks to which the individual utilizes and employs impressions isomorphic to the object as a special substitute, surrogate or model of it.[14]

He seeks, in brief, a concept of reflection which would illuminate, for example, the operation of cognition vis-a-vis cybernetics. This concept, of course, will be a "flexible" concept in which the highest development reveals the structure of laws determining that development, and in which "we regard the lowest as a 'hint' of the highest, when the highest is known."[15] A second, closely related purpose is Tiukhtin's desire to make clear the full truth of Lenin's thesis that "reflection" is a "universal property" of matter. If it can be shown that mental reflection "reflects" objective reflection, then it is not only reflection as "reflectability" which is a "universal property" of matter, but also reflection as relations between objects that supply the physical basis for distinctively mental reflection, i.e., identifying and correlating of "imprints" with "originals."[16]

To test this possibility of a genetic relation between mental reflection and what we may term "material-reflection," we consider first whether objects can imprint their structures on bodies other than minds; i.e., we consider whether the sort of "interaction" producing this transfer of structure is what Tiukhtin calls a "universal" possibility. Tiukhtin assumes that the most developed examples of "imprints" and the fullest revelations of the universal physical principles characterizing their interconnections will be found in modern control and communications engineering, especially cybernetics. Obviously such "imprints" and connections would also be perfectly relevant to determination of "truth" (adequacy) conditions and hence would have epistemological significance.[17]

What the Soviets mean by "cybernetics" is indicated by A. I. Berg who broadly defines it as "the science of the laws of control of complex dynamic systems," the latter including natural and social as well as engineering systems.[18] In all of these systems "control is effectuated by the receiving, storing, and processing of information" or what Tiukhtin terms "imprints."[19]

Tiukhtin argues from his survey of cybernetics and related fields that the "imprints" and imprint interconnections employed in cognitive reflection are reduplicated to such an extent in these fields that there can be no doubt that objective reality is potentially capable of modelling them.[20] One could object that this simply amounts to saying that we can build logical models. Tiukhtin, however, is focusing our attention on the objective grounds for this possibility, on the fact that nature is such that it can be made to model cognitive processes. This peculiar character of objective reality cannot be analytically derived from statements applying only to the subjective form of cognition. Furthermore, Tiukhtin is establishing a basis for perhaps the most disputable claim of Marxist-Leninist epistemology, namely, that the potentialities of objective reality constitute the field in which cognition operates and that consequently all truths, even those of mathematics and logic, are discoveries, not creations of these potentialities. In Tiukhtin's articles, the form of this claim is that the possibilities of the process of objective reflection "match" those of cognitive reflection precisely because they are the physical basis or ground of the latter.[21]

One example Tiukhtin uses to illustrate his thesis is the transmission of sound by radio.[22] Here is a case in which one event - say, a

song - can be perfectly "reflected" in another - the sound of a receiver; "perfectly," because the second event is both quantitatively and qualitatively isomorphic with the first, as well as sharing with it the same physical modality, i.e., vibrations in an atmosphere. The production of this physical similarity has been achieved by devices which transfer the imprint or structure of frequencies from the song to a qualitatively different medium (radio waves) and then which transfer the imprint in that medium back to the medium of the first event (sound vibrations). These devices, furthermore, are so engineered that in the result of their "interaction" with the song, there is little evidence of their peculiar structure; when the processes of radio-reflection are "adequate," we hear not a radio-song, but the original song itself. The parallels with the process of cognitive "reflection" as described by Marxists are clear: our nervous apparatus, like the devices of a radio, receive object imprints consisting of structures of relative frequencies, vibrations, shapes, etc., and then "demodulate" them, so to speak, so that the final result is an awareness not of sense-data, nor even, strictly speaking, of "image," but of the original, external object perceived <u>through</u> images.

Epistemologically, the vital point that this and other examples make clear is that physically realizable models of the Marxist theory of reflection are available, insofar as that theory describes the reception of "impressions" of objects through which impressions these objects are reconstructed. These models, moreover, are epistemologically informative. Studying their properties, we can gain a clearer idea of the relations that constitute adequacy of reflection and hence of criteria of truth, criteria which can be applied and made ever more precise because of their ob-

jective mode of existence. Tiukhtin refers to contemporary "resemblance theory" as the development of this study.[23] Finally, the invention of ever more efficient means of communication and control utilizing the complex of "reflection" relations distinguished by resemblance theory constitutes remarkable confirmation, says Tiukhtin, of Lenin's positions on reflection.[24] The intimate connection of cognitive and objective reflection becomes especially manifest in automation in which machines model memory, calculating, identification, and logical operations.

It is beyond the competency of this study to clarify Tiukhtin's technical discussion of resemblance theory relations. In general, however, one might reconstruct his analysis as follows:

(1) The most general relation that includes and makes possible the hierarchy of reflection relations is causality, specifically as it applies to the interaction of two bodies. Causality insures that the presence of one object or event in the interaction will be a "signal" of the presence of the other. Such invariance is in turn the simplest form of significant "correspondence" (as distinguished from accidental resemblance). "Correspondence" at this level is interpreted by Tiukhtin to be merely "standing for," since he describes the relation of symbol to symbolized as "simple correspondence."[25]

(2) "Correspondence," the most general form of reflection in its "passive" stages, becomes "isomorphism" when a set of components and functions of one object are a "signal" of a set of these "structural" aspects of another; and "homomorphism" when only the objects themselves are invariantly related. "Identity" and "Similitude" are special cases of isomor-

phism. "Physical similitude" presupposes "identity in physical nature, or modality."[26]

(3) The possibility of scientific advance is due to the fact that objects and media can serve as structural models of objects investigated without sharing with them the same physical nature. Thus cognition can only be adequately explained as the establishment not of physical similitude, as required by Helmholtz, for instance, but of structural isomorphism involving proportionality rather than identity.[27]

(4) An original object is most efficiently modeled in a "linear system," i.e., an interaction in which the structure of this object is not significantly changed by being brought into relation with a reflecting body or medium, and in which the reflector or "signal" vehicle changes in such a fashion that its distinctive characteristics are "excluded," and the "imprint" of the structure of the original constitutes the manifestation of the change of the "content of the signal." Such "exclusion," of course, implies an active agent, viz., the operation of distinctively mental reflection.[28]

(5) Though isomorphism and linear systems are found in mechanical, mathematical and logical contrivances and thus are demonstrated to be potentialities of objective reality, natural interactions are nonlinear (since they are dialectical) and typically exhibit homomorphism rather than isomorphism. Reflection of natural interactions therefore occurs as correspondence between an interaction and a "law" of its behavior, but through analysis of this law and the use of nonlinear measuring instruments, we are partially able to recover the structure of "the influencing factor" in the interaction.[29]

In the conclusion of his later article, Tiukhtin summarizes his analysis of objective reflection as follows:

> Thus, the capacity of any object to produce, as the result of its interaction with another object, changes (impressions, traces) isomorphic (or homomorphic) in structure to the action pattern of the other body, is the essence of the general property of reflection . . . Considered epistemologically, the universal property of reflection serves as the foundation, common to all nature, for direct reflection and mediated, derivative knowledge of properties and relations that are concealed and not directly given - that is, it represents a fundamental argument in favor of accepting the principle of the possibility of truly cognizing the world.[30]

But as is already clear, for Tiukhtin objective reflection is not itself mental reflection, a point that he stresses in opposition to other Soviet writers on Lenin's thesis that reflection is a "universal property of matter."[31] Neither in nature nor in the most sophisticated products of computer science can we find, he says, any analog for the distinctive mental activities of "identifying" and "correlating" which constitute the special functions of mental reflection. However faithful the "imprint" provided by natural or artificial processes of objective reflection, "it is necessary to determine what the given imprint is a model of."[32] This involves "isolation (and identification) of the structure of the reflected object" from the special characteristics of the reflecting body or carrier, and "correlation . . . of the structures, or relations, of entities to each other, with the result that we are able to pass from the structure of the impress to that of the original."[33] The kind of reflection including these operations can only be "a functional property" of "a living system" which "makes active use of the products of interaction as special surrogates of objects."[34] In cybernetics and communications engineering we find, of course, the reflection of such operations in mechanisms designed to compare, identify, store information, etc., and the physical

realizability of these intellectual procedures is of great significance in demonstrating the viability of Marxist-Leninist theory of knowledge. But Tiukhtin points out that unlike the originals of many "imprints," the originals of correlating and identifying can only be found in living organisms.[35]

Tiukhtin offers the accepted Pavlovian genetic explanation of these intellectual operations of reflection. Because of "motivational states," an animal conducts "search-and-orientation" activities to reproduce situations conducive to its survival.[36]

These activities are "expressed in the fact that the subject faces toward, directs itself toward, and is attracted toward the world without."[37] Imprints of biologically significant objects appear to the subject therefore not as "states of his receptors, nerves and brain," as certain idealists would have it, but as "the content" of original sources, i.e., as "subject matter."[38] Concern for the "world without" also leads higher animals to regard these imprints as "surrogates" or "substitutes" of the original objects, and in conscious cognition, stimulates a "reverse transition from the structure of the imprint to the structure of the source," an operation that "constitutes a specific feature of the reflection of reality in cognition."[39]

What, then, are the main distinctions made in an adequate concept of reflection? For Tiukhtin, such a concept would have to distinguish between (1) general or material reflection and (2) mental reflection, the highest form of the reflective process, revealing the potentiality of (1) as well as the qualitatively distinct functions of "identifying" and "correlating" which make possible the development of the potentiality of (1).

That concept would also make clear how (2) "reflects" (1). On the basic level (A), (2) "reflects" (1) as one material body reflects another, for the mind must be subject to the laws of interaction governing transfer of material "imprints" if it is to operate with these laws. On a higher level (B), (2) "reflects" (1) as material bodies potentially reflect other bodies in control and communications systems, for the mind must have a cybernetic function if cybernetic machines are to be adequate models of its operations. On the highest level (C), (2) "reflects" (1) not as anything else reflects objects, i.e., not passively, but actively, as "surrogates," the direction of reflection from original to imprint being reversed by the distinctive mental functions of identifying and correlating and the reversal being objectively completed through "practice." Finally, an adequate concept of reflection would also identify the relations of adequate reflection. Tiukhtin finds the most precise forms of them in control and communications engineering and allied fields - level (B) - and the criteria for them in cognized "practice" - level (C).

Tiukhtin's articles on the concept of reflection enable us to construct a clearer case for the use of that concept than has hitherto been possible. Most striking is Tiukhtin's way of interpreting the material application of the concept in terms of the relations of isomorphism, homomorphism, similitude, etc., relations made precise and physically operative in control and communications engineering. Lacking competency in this field, we are unable to evaluate the accuracy of his definitions of those relations. Cybernetic interpretation of material "reflection", however, appears to us to be an approach that would provide Marxist-Leninist epistemology with rigor, precision, internal coherency, and perhaps even

possibilities for formalization. It also greatly strengthens the defensibility of the theory of reflection against neopositivist criticism. For one thing, it immediately makes irrelevant those attacks that assume the theory asserts and requires the existence of a physical similarity or mirroring relation between acceptable "ideas" and objects. Tiukhtin's interpretation of reflection would admit even simple "correlation" between qualitatively distinct entities as a degree of "signal" adequacy, providing the correlation is introduced not arbitrarily but as a recording of an objective cause-effect invariance.[40] His point would be that the measure of adequacy increases as further invariances and hence correlations are found between components, connections, and functions of the signaled entity and those of the signaling object. Physical similarity, of course, would constitute perfect, though for most purposes epistemologically useless adequacy; structural identity would be less perfect adequacy; and isomorphic proportionality still farther down the scale, though more available, generalizable, and therefore more serviceable for "surrogate" operations. Exactly faithful "images" of all real objects are neither possible nor required in Tiukhtin's interpretation of reflection, and though Lenin too said that "images" could only be "approximately" faithful, Tiukhtin supplies physically realizable measurements of this approximation the utility of which can hardly be denied.

The real issue would now seem to be not whether the only adequate ideas are mirror-images of objects, but whether cognitive reflection "reflects" the sort of material "reflection" that takes place in cybernetic devices. In addition to understanding the meaning and qualifications of this thesis, an understanding which our preceding discussion has attempted

to provide, a critic of the theory of reflection as interpreted by Tiukhtin would have to reckon with some further considerations.

First, he must recognize that Tiukhtin is not merely asserting that cybernetic devices are a "reflection" of cognitive operations. That assertion would naturally follow from the very definition of those devices. Furthermore, without proper qualification, such a statement might be interpreted to imply that the truth relations of the devices depend on those established by the mind, a typically conventionalist position. Tiukhtin is asserting rather that the establishing of truth relations in the modality of consciousness "reflects," when adequate, the potentialities of objective reality realized in cybernetic devices. Hence Tiukhtin would say that what we think to be an adequate truth relation is confirmed as such when it can be materially modeled. When said to "reflect" these realized objective potentialities, the mind, of course, is being regarded as a passive reflector not essentially different from a material reflector; the active, creative functions of the mind which discover and identify truth are here excluded since what is characterized is the mode of cognition in which the truth-to-be-discovered has its subjective existence.[41]

But though the creation of cybernetic devices by men is not the kind of "reflection" Tiukhtin asserts in the thesis described above, it does constitute extremely good evidence for that thesis. If men's minds could not receive "signals" and "imprints" of external structures, if they could not "picture" the various correspondence relations between signals and structures in control and communications systems, if they could not record the actual and potential invariances constituting the operations of those systems, and if they could not receive all this information as infor-

mation which varies according not to wish but to the presence or absence of objective conditions, how could the undeniable existence of cybernetic devices be possible? But perhaps one might object that even if the mind has structures and functions analogous to those of certain machines, we have yet to prove that the truths which can be established by the brain as a "computer" exhaust all possibilities of true concepts and propositions. Since Marxists believe in a kind of logic which is impossible to "computerize," they would, of course, concede this point. But they could argue that since men must defer to "truth" decisions made by cybernetic machines, then there is established at one level of "reflection" the existence of a cognitive process functioning in accordance with various relations of correspondence, and both logically and actually depending upon its reflection of similar relations potentially realizable in objective reality. The establishment of that fact demonstrates at least the possibility that these characteristics of the cognitive process are universal.[42]

Another objection would be the common sceptical protest: how do we know that what we think we see "reflects" what is really there? We have argued in this paper that the ultimate answer that Marxists would have to give to this question is the reasonableness of the act of faith which leads us to adopt, as the starting point of inquiry, the standpoint of the naive believer. When this objection, however, is directed against our ability to tell what our computers are doing, it hardly seems necessary to resort to such an answer. That we <u>can</u> tell what computers do, and that what they do is not only the effect of consciousness are propositions which follow analytically from the concept of cybernetics.[43] Thus the objection does not make sense unless a cybernetic interpretation of "reflection" is ex-

cluded. What grounds, however, could be offered for making such an exclusion which would not be themselves subject to the same sceptical protest? Perhaps a sceptic could reply be requesting the grounds for the concept of cybernetics in the absence of which he would hold that concept to be meaningless. But if mechanically realizable truth conditions are not grounds for meaningfulness, what else does the sceptic require? Is it not, indeed, the availability of these conditions which gives his question one, and perhaps its only clear meaning? For surely in the operations of control and communications systems the question of the relation of an "image" or signal to the imaged or signaled has a practical significance, and a possibility of being answered with a high degree of precision.

The existence of machines that provide highly sophisticated transmission and conversion of signals also enables us to give a positive answer to the sceptic's question. Assume that the sound pattern from a receiver does not match the sound pattern from a source. Engineers can measure the incorrectness - the lack of correspondence or "reflection" - to a great degree of specificity, characterizing it both quantitatively and qualitatively. No one could reasonably doubt that in this case a relation of reflection exists; that it is measurable in terms of adequacy expressible as degrees of "truth" or "correctness"; and that the resulting measurement would characterize a function of the machine. But suppose the trouble is that someone has not tuned in the set properly. The degree of error, of course, remains the same, but now it is a function of a human operator. Further suppose that we call his attention to a discrepancy between the source-sound and the signal-sound and that he then corrects his tuning by relying solely on his hearing. Clearly the accuracy of his ability to hear

correspondences or reflections of sounds could also be precisely measured by the engineers using the same measuring devices and the same sound-reproducing system.

But the operator may object that he heard "right" in the first place, that the engineers have faulty equipment and bad ears. The objection makes clear that in practical life, though truth conditions are most commonly determined through clarification of relations of "expression" or "denotation," the ultimate determinant is the relation of reflection. In the present instance, whatever the statements of the engineers and the operator may be referring to, there can be no settling the truth of them until the conflicting reports of the various human and mechanical reflectors are checked. But are such conflicts scientifically resolvable? If they were not, the success of cybernetics, automation, and communications engineering would be inexplicable. Furthermore, practice in these areas reveals that it is precisely by means of applying relations of reflection that conflicts among the reports of reflectors are settled. In the present case, for example, the engineers would call for equipment to measure the reflecting-sensitivity of the human and mechanical devices in question which as a reflector would be more reliable than those devices. This "reliability," in turn, would ultimately be a function of the extent to which the correlations constituting scientific knowledge in general would be weakened by the inadequacy of that equipment. In cybernetics and allied fields, the measurability of the capacity of a mechanical or sensory apparatus to record a correspondence between one thing and another is thus seen to be a function not of a single instrument or group of experts, but of science itself, the form in which established correspondences are most

numerous, mutually implicated, and deeply correlated, i.e., in which they are brought into the highest attainable degree of isomorphism. Again it should be observed that this argument does not assert that all questions of correspondence between material bodies and material or sensory reflectors can be decided electronically; it asserts rather that in cybernetics and allied fields is demonstrated the physical possibility that Lenin's theory of reflection is universally true and that the various relations of reflection can be rigorously interpreted.

There is one form of the sceptical protest discussed above that does, however, have merit. This is the objection that it is pointless to ask whether a man's "image" reflects or corresponds to the object he thinks he sees. In the preceding discussion, we have tried to avoid making this question the central issue. Our guiding question has been not whether man's "images" reflect "objects," but whether man can adequately compare "imprints" and "objects." Tiukhtin himself does not make this basic approach of his two articles explicit, and in arguing the importance of taking that line of inquiry, we venture to make a contribution to Leninist theory of reflection - or more accurately, to strengthen Tiukhtin's interpretation of that theory.

First, let us make clear in what way Lenin's thesis that a man's "images" reflect "objects" is unsatisfactory on the basis of Marxist-Leninist epistemological requirements. As frequently noted, for Lenin the complete concept of "truth" reflects a process of discovering the objective relations and properties of things, the results of this process being confirmed in social "practice." Considering Lenin's thesis as a <u>starting point of inquiry</u> - and he often offers it as such - we will find

that that concept of "truth" cannot be applied to this thesis. In the first place, in actual social practice a man does not begin work by comparing the thing-at-hand with his "image" of it. For him the thing simply is there. From this standpoint - what we earlier termed the standpoint of the naive believer - the first epistemological problems encountered, if any, will be those of the "denotation" or perhaps "expression" relations of words to things. Neopositivist criticisms on this matter, we submit, are therefore to be taken seriously. But in addition to the fact that the phenomenon of man-comparing-image-to-object is not to be found as an impetus to inquiry in ordinary experience, there is also good reason to believe the phenomenon simply could not take place.

Consider what is required. Granted that the object has made an "imprint" on his sensory apparatus, the man would have to begin by separating the "imprint" from the object in order to compare the two. Thus he would have somehow to "look at," or receive an imprint of, the imprint as an <u>imprint</u>, i.e., as something distinct from the object. But as Tiukhtin has pointed out, an imprint is cognitively meaningful only when its distinctive qualities as a carrier or medium are excluded from attention; furthermore the function of revealing an independent, external object would be essential to preserve in our imprint of a truly cognitive imprint, for otherwise the latter could not be distinguished from a fantasy.

There are other difficulties we face in conceiving separately the second term of the comparison, the "object." In addition to those pointed out by Berkeley and Kant, there is also the impossibility, pointed out by Hegel, Marx, and Lenin, of conceiving an object as "determined," i.e., as

having a definite structure, when that object is not apprehended - either positively or through rational isolation - as having definite relations to other objects. Dialectics tells us, in other words, that there can be no question of an apprehension or cognition of just one object or category; there must always be at least two in some form of relation. Thus the beginning of inquiry, the initiating comparisons out of which all cognition develops, must be operations with objects and the relations between them; only after these operations have been performed can the question of the adequacy of man's "images" be significant.

This consideration brings us to the difficulties that proceed from characterizing the actual comparison of the terms discussed above. We have argued earlier that Marxist-Leninist epistemology must proceed from a faith in the ability of man to know objective reality. Without this prior conviction, how could we ever presume to determine whether any "image" corresponds to or otherwise "reflects" an object? Such determination would presuppose the validity of the very process of judgment that it is used to validate.

In brief, then, the notion that the adequacy of cognitive "reflection" is established by some original comparison of man's "images" and real objects is entirely empty of content. Even in terms of other leading theses of Marxist-Leninist epistemology, such a notion is both non-testable, useless, and upon analysis, inconceivable. Nevertheless, when interpreted within the proper context, Lenin's thesis that man's "images" can reflect independent, external objects more or less adequately, becomes highly useful and capable of a wide range of measurements. This is the context provided by Tiukhtin's cybernetic elaboration of the

general theory of reflection. It is also a context that makes Lenin's special thesis cohere with the leading features of Marxist-Leninist epistemology. The following observations support these considerations.

Viewing the process of cognitive reflection as one to be approached objectively and keeping subjective introspection at a minimum, we ask ourselves, what are the actual manifestations of this process in social life? It then soon becomes clear that the objectively ascertainable final functions of this process are transformations of the environment in the interest of human needs. What must cognitive reflection be like, then, in order to enable these functions? A study of the social "practice" in which these transformations are achieved reveals that what is vital is a worker's ability to match drawings with mechanisms, maps with land masses, or in general, "signals" with sources. Objective study also reveals that it is in "practice" that the question of this ability becomes a significant issue, i.e., one affecting the transformations of the environment, and an issue that becomes decideable in increasingly precise and general terms. Today, with the development of cybernetics and its techniques, the issue of what we might call the "comparison ability" of individuals, groups, and the human sensory apparatus itself becomes to an increasing extent part of the technical issue of the adequacy of reflecting mechanisms in general, and the possibility of precise, practically significant determinations of man's ability to reflect objects in "images" has been physically demonstrated.

Within the context of an objective study of social practice, then, Lenin's thesis becomes meaningful and of great theoretical importance. Interpreted this way, the thesis becomes essential, for example,

for explaining the possibility of cybernetics itself. But we must not overlook what operations must take place before the thesis can be interpreted in this fashion. First, there must be the act of faith which leads us to take the standpoint of the naive believer for whom the existence of things "out there" is indisputable. Second, there must take place the primordial act of reflection which initiates the development of the cognitive process. This act consists not in the comparison of an object with a mental "image," but of objects with one another, our confidence that what we see is there being given in the perspective we assumed by act of faith. After these two operations, and after having determined our goal to be the development of effective, need-satisfying "practice," then it becomes important and meaningful to ask whether the failures and successes of human psycho-sensory equipment in matching objects with one another, are functions of the ability of components of that equipment to pick up adequate signals, imprints - or in the old Leninist terminology, "images" of objects. In terms of the principle of the flexible concept, we could say that the error in Lenin's thesis when not interpreted as indicated is confusion of the "levels" of development of the "reflection" concept.

Final Conclusions

In the introduction to this study, we stated that our purpose was to examine Lenin's theory of reflection as a viable epistemology, especially so that we could understand the role of that theory in present-day Soviet philosophy. Our conclusions may be presented under three headings: (1) characterizations of the structure of the theory of reflec-

tion; (2) historical explanations for the development of the theory in contemporary Soviet epistemology; and (3) evaluations of that development.

Before describing the structure of the theory of reflection, we must first distinguish these several versions of the theory: (a) one based on crude statements in Lenin's MEC asserting a mechanical mirroring of objects in sense-perceptions, (b) one based on other passages in MEC which together suggest that knowledge evolves out of the dialectic of naive realism, and (c) one based on the general terminology and epistemological program of MEC but enriched by the Hegelian insights approved by Lenin in his later Philosophical Notebooks. Version (a) is the one to which common Western criticisms justly apply; version (b) represents the interpretation of MEC which we believe to be the most defensible; and version (c) is the modern Soviet interpretation.

Focusing upon version (c) since it is the main concern of this study, we observe that the most striking change made by contemporary Soviet philosophers in Lenin's original theory expressed in MEC is their shifting of emphasis from empiricism to rationalism. Now the reason is a reflector, not just the senses; and it is the activity of reason that makes sensation cognitive. Consequently the vehicle of adequate reflection - the specific form of "reflecting" - is no longer the sensory "image," but the "flexible" concept developed by dialectical reason. What is "reflected" in adequate cognition is in turn no longer the forms and qualities registered in sense-perceptions but structural relations discoverable only mediately through the activity of reason. Finally, "reflection" as a total process can no longer be causally described in

terms of mechanical mirroring. For Soviet epistemologists, reflection can be analyzed only by means of dialectical, flexible concepts designating complex and contradictory movements of rational comprehension. The greater regard for the claims of theoretic reason is also seen in the way Soviet philosophers emphasize the importance of formalization in logic and semantics; in fact, a persistent Soviet argument is that a principal justification for the "non-formal" or dialectical analysis of concepts is that such analysis will enable more consistent formalization since it will dissolve certain paradoxes and antinomies now frustrating formalization. Other evidences of this new respect for theoretic reason include Soviet criticisms of reliance on the "given" and appeals to naive experience, and, perhaps most striking, Soviet efforts to avoid the sort of arguments ad hominem, citations of authorities, and passionate polemics that are so frequent in MEC.[44]

At the same time, it is important to note that Soviet philosophers continue to operate with the basic theses of MEC which condition the theory of reflection expressed there; e.g., "matter" and "consciousness" are the basic epistemological categories, cognition is a dialectical process, societal practice is the criterion of true reflection, knowledge is always increasing but never final, and philosophy can be consistently only materialistic or idealistic. Furthermore, Soviet philosophers continue Lenin's tendency to develop the theory of reflection in terms of extending its functions and applications rather than by detailed characterization of its content, although the cybernetic interpretation of reflection offered by Tiukhtin seems to be a promising way of giving the theory rigor and precision.

Turning to the historical explanations for the rationalistic interpretation of Lenin's theory of reflection in current Soviet philosophy, we can say simply that they are provided by new circumstances and new opportunities. Developments in science, mathematics, and logic coming into prominence after the publication of MEC constitute one set of new circumstances influencing the Soviets. Lenin's confidence in the "naive belief of mankind" and the ability of our sense-perceptions to reflect objective reality faithfully must have seemed not merely untenable but highly dangerous to Soviet physicists trying to teach Einstein's principles of relativity. Furthermore, the undeniable power of a "games" approach to the construction of mathematical and logical systems, the development of hypothetico-deductive scientific method, and, in general, the success of formalization in logic and semantics gave new significance to the cognitive functions of the creative intellect and eventually demonstrated the impossibility of reducing knowledge into empirical terms.

Another set of circumstances influencing Soviet philosophy toward rationalism consists of developments in non-Marxist philosophy of science. Most challenging to the old Marxist-Leninist line in epistemology are those developments inspired by the success of formalization in logic, mathematics, and semantics noted above. These tendencies, proceeding from what Marxists call an "absolutization" of formal logic as the model for knowledge in general, constitute "neopositivism." According to the Soviets, this movement threatens to reduce all philosophy to clarification of various forms of the "given" and thus to emasculate dialectical materialism. Worse, neopositivists can claim real successes

in developing techniques of logical analysis, and in dealing telling blows against religious idealism by attacking its meaningfulness. Thus Soviet philosophers were compelled to embrace the contributions of neopositivists to semantics and logic, but in order to do so, and at the same time show the inadequacy of neopositivist epistemology, Soviet writers had to appeal to that which was broader than formal reason, and so they naturally were ready to give special attention to the possibilities of dialectical reason. Fortunately for them, these possibilities were indicated by Lenin himself through his comments on Hegel contained in his later Philosophical Notebooks.

The new opportunities provided by Lenin's later thought were eventually matched by opportunities for apparently effective application of this thought. In the course of the history of neopositivism, the bankruptcy of reductionist empiricism became generally conceded, and the attempt to give a formalized account of knowledge in general led to various paradoxes and dilemnas yet to be resolved by formal methods. To contemporary Soviet philosophers, it then appeared that dialectical materialist rationalism could offer cogent answers.

We review now our evaluations of the rationalist interpretation of the theory of reflection which was shaped by the historical circumstances and opportunities described above. The merit of the interpretation is evidenced in the positions taken by Soviet philosophers on four leading issues involving the theory of reflection. In regard to the question of how to approach the explanation of cognition, the Soviet method of explaining cognition as a process of dialectical reason has one distinct advantage over procedures determined by the ideals of formal logic.

The static charcteristics of formal logic can be explained in principle as a stage in the development of cognition, but the development of cognition cannot be accounted for by techniques of formalization. This greater potential comprehensiveness is also achieved by the Soviet interpretation of adequate concepts as "flexible" rather than formally fixed concepts. It is a matter of fact that our understanding of a thing or relation does increase, and that there are distinct and yet related levels of this understanding. Only by regarding our concepts of things and relations as "flexible" can we hope to account for that phenomenon.

In regard to the third issue - the nature and use of the "given" in epistemology - we can say that by emphasizing the role of reason as a reflector of connections and relations in objective reality, the Soviets are able not only to expose the weaknesses in neopositivist reliance on the "given," but also to indicate solutions for problems resulting from overuse of that category, e.g., the problems of the meaning of "truth" and "existence." Soviet arguments directed to this issue also make a good case against those who attempt to eliminate from epistemology the problem of the contradictions between subjectivity and objectivity.

The last issue considered in our study was the question of the nature of "reflection" itself. Conceiving it both as a process and a relation, Soviet philosophers try to develop a concept of "reflection" flexible enough to embrace the various characteristics exhibited by reflection on all levels of cognition and in static forms of knowledge as well as in the process of increasing knowledge. Most interesting, how-

ever, is the current Soviet attempt to give a cybernetic interpretation of reflection; such an interpretation may enable the concept of "reflection" to possess in some of its forms a capacity for rigorous and physically checkable applications.

Finally, we observe that in the Soviet interpretation of the theory of reflection, dialectical reason functions not only as a means of accounting for cognition but as a way of disclosing the potentialities of men and things, potentialities which are not mere possibilities, but developments determinable from the past and present conditions of man, society, and nature; thus the theory of reflection under its rationalistic interpretation can in principle give rise to prescriptive theories of ethics and politics, as well as of scientific methodology.[45]

The weakness of the Soviet interpretation we have emphasized in this study is the failure to utilize Lenin's original premise that the " 'naive belief' of mankind is the foundation of knowledge." Our point is that Soviet epistemology needs this thesis to become fully coherent and defensible. We have argued, for example, that the genetic account of knowledge offered by Soviet epistemology is fundamentally incomplete if inadequate genetic reasons are given for why some men in fact assume a standpoint from which cognition can be viewed as a "process" or for why they come to accept the <u>dialectical</u> logic which tends to contradict their natural understanding.[46] It is hardly sufficient for a Marxist to account for these basic features of his system by saying that they are required for philosophic comprehensiveness. The evolution of dialectical epistemology must be traced back to pre-scientific conditions of production and social relations; when that is done Lenin's thesis provides

the basic historical explanation of cognition and the possibility of science.

Another fundamental question can be asked: how can dialectical rationalists account for the pattern of development displayed by flexible concepts? In this pattern, a vague, superficial understanding of an object or relation leads to contradictions, the resolution of which requires advancement to a higher level of understanding which in turn leads to new contradictions requiring synthesis at an even higher level, and so on. Lenin's thesis enables us to formulate an appropriate answer, namely, that the movement from ignorance into knowledge characterizing the development of cognition is ultimately the self-developing of naive belief overcoming its internal contradictions.[47]

We have also objected that without being carefully related to "naive belief," the Soviet insistence that the "world is given" coupled with Soviet rejection on scientific grounds of the "naively realistic picture of the world" seems paradoxical or meaningless. The paradox consists in the implicit use of naive belief to justify the thesis that the world is given, and on the other hand, the denial of naive belief as a consequence of accepting the dictates of science. If it could be shown that science presupposes naive belief but develops out of the contradictions of naive belief, the paradox would dissolve.[48] The meaninglessness of the thesis that the world is given is revealed when we ask for a specification of exactly <u>what</u> is given. We contend that the only Marxist-Leninist way to give content to this thesis is to say that the given is what is encountered when we assume the standpoint of the naive believer.[49]

A further objection we raised concerns the appeal of Soviet philo-

sophers to "practice" as the ultimate criterion of the adequacy of reflection. We do not deny that scientific practice affords the ultimate criterion, but we argue that such a criterion involves us in inescapable circularity when we try to use this criterion to justify the thesis that human concepts can in principle approximately correspond to an external, independently existing non-conceptual reality. That thesis cannot be justified; it can only be presented as a description of what men must believe when they assume the standpoint of a naive believer, and the assumption of that standpoint in turn can only be accounted for as an act required in the interests of life.[50]

Finally, we pointed out that even dialectics itself requires a fundamental faith in our ability to know objective reality in itself, for cognition does not begin in a comparison of "images" with "objects" but in a comparison of objects with one another. Only by making the second kind of comparison do we become able to formulate propositions, devise tests for their adequacy, and thereby meaningfully question the accuracy of our reflecting equipment. Thus naive acceptance of the world becomes essential to the development of criticism of that acceptance.[51]

These criticisms of contemporary Soviet interpretation of the Leninist theory of reflection are directed, however, not against the rationalist principles of that interpretation but against the failures of Soviet philosophers to integrate their principles with Lenin's basic insight. We see no reason why Lenin's view of naive belief and modern Soviet rationalism cannot co-exist. Rationalist dialectical materialism could be explained as the full development of the dialectics of naive realism, and the theory of reflection could then do justice to the most

fundamental and enduring of human perspectives.

NOTES

The journal Soviet Studies in Philosophy, which is frequently referred to in chapters IV, V, VI, and VII, will be abbreviated as "SSP."

Notes to "Introduction," Pages 1 to 5

1. V. I. Lenin, Materialism and Empirio-criticism (2d ed.; New York: International Publishers, 1927). This is the standard edition used whenever we cite Lenin's text. In Chapter I, however, we will have occasion to refer to some "notes" prepared on this text by Soviet scholars. These "notes" are in the third revised edition of MEC published by Progress Publishers in Moscow, 1964.

2. A "line" in Marxism-Leninism is an example of a "flexible" concept, the nature of which is discussed in Chapter VI.

3. Logical Positivism, ed. Ayer (1959), p. 364.

4. Ibid., p. 376.

5. Ibid., p. 374.

Notes to Chapter I, Pages 6 to 13

1. Pertinent passages are in V. I. Lenin, Materialism and Empirio-Criticism (3d rev. ed.; Moscow: Progress Publishers, 1964), pp. 341-362; Gustav Wetter, Dialectical Materialism (London, 1958), pp. 3-17, 58-109; I. M. Bochenski, Contemporary European Philosophy (Berkeley and Los Angeles, 1961), pp. 1-40, 61-71; W. M. Simon, European Positivism in the Nineteenth Century (Ithaca, N.Y., 1963), pp. 3-18, 238-63.

2. Ludwig Feuerbach, as quoted in Wetter, op. cit., p. 46.

3. See V. I. Lenin, Materialism and Empirio-Criticism (2d ed.; New York: International Publishers, 1927), pp. 202-07, 341-42. See also H. Hoffding, A History of Modern Philosophy (New York, 1955), pp. 499-504.

4. Ibid., 202-07.

5. Ibid., 196-207.

6. See editors' "Notes" in Lenin, Materialism and Empirio-Criticism (3d rev. ed.; Moscow: Progress Publishers, 1964), p. 355.

7. Wetter, op. cit., pp. 92-3.

8. Ibid., pp. 92-4.

9. Ibid., p. 93, and V. I. Lenin, Materialism and Empirio-

Criticism (New York, 1927), "Bibliography."

10. Materialism and Empirio-Criticism (New York, 1927), p. 14.
11. Ibid., p. 13.
12. Ibid., pp. 94, 130, 135-36.
13. Ibid., p. 359.

Notes to Chapter II, Pages 14 to 36

1. Z. Jordan, Philosophy and Ideology (Dordrecht, 1963), p. 229.
2. Ibid., p. 328.
3. Ibid., p. 326.
4. Ibid., p. 330.
5. Ibid., p. 331.
6. Ibid., pp. 327, 330, 333.
7. Materialism and Empirio-Criticism (New York, 1927), p. 237.
8. Ibid., p. 96 (footnote).
9. Ibid., p. 96.
10. Ibid., p. 240.
11. Ibid., pp. 311-12, 48.
12. Ibid., p. 116.
13. Ibid., p. 274.
14. Ibid., p. 272.
15. Ibid., pp. 153-55.
16. Ibid., p. 334.
17. Ibid., p. 335.
18. Ibid., pp. 335-36.
19. Ibid.

20. Ibid., p. 156.
21. Ibid., p. 268.
22. Ibid., p. 63.
23. Ibid., p. 54.
24. Ibid., p. 110.
25. Ibid., p. 150.
26. Ibid., pp. 64-66.
27. Ibid., p. 66.
28. Ibid., p. 63.
29. Ibid., pp. 312-13.
30. Ibid., pp. 176-79.
31. Ibid., pp. 302-03.
32. Ibid., pp. 108-09.
33. Ibid. pp. 124-25.
34. Ibid., p. 44.
*35. See Chapter III, pp.
36. Materialism and Empirio-Criticism (New York, 1927), p. 44.
37. Ibid., pp. 141-42.
38. Ibid., p. 71.
39. Ibid., p. 72.
40. Ibid., p. 269.
41. Ibid., p. 274.
42. Ibid., pp. 27-28.
43. Ibid., p. 106.
44. Ibid., p. 192.
45. Jordan, op. cit., p. 326.

46. Ibid., p. 321.

47. Ibid., p. 332.

48. Ibid., p. 333.

49. Ibid., p. 335.

50. Ibid., p. 339.

*51. See the genetic accounts of formal logic offered by the contemporary Soviet philosophers P. V. Tavanets, "Formal Logic and Philosophy," Soviet Studies in Philosophy, II (Summer-Fall, 1963), 3-9; and D. P. Gorski, "Formal Logic and Language," ibid., 49-68.

Notes to Chapter III, Pages 37 to 66

1. Materialism and Empirio-Criticism (New York, 1927), p. 196.

2. Ibid., p. 50.

3. Ibid., p. 40.

4. Ibid., pp. 38-39.

5. Ibid., p. 63.

6. Ibid., pp. 238-39.

7. Ibid., pp. 237-243.

8. Ibid., p. 128.

9. Z. Jordan, Philosophy and Ideology (Dordrecht, 1963), pp. 327, 330, 333.

*10. See this chapter, pp.

11. Materialism and Empirio-Criticism (New York, 1927), pp. 145-46, 190-93.

12. See P. V. Tavanets, "On the Semantic Definition of Truth," Soviet Studies in Philosophy, II (Summer-Fall, 1963), p. 96; and V. S. Tiukhtin, "On the Process of Reflecting Reality in Cognition," Soviet Studies in Philosophy, I (Fall, 1962), pp. 46-47.

13. Materialism and Empirio-Criticism (New York, 1927), p. 106.

14. Ibid., p. 110.

15. Ibid., p. 142.

16. Ibid., p. 138.

17. Ibid., p. 117.

18. Ibid., p. 206.

19. Ibid., p. 97.

20. Ibid., p. 106.

21. Ibid., p. 206.

22. Ibid., p. 107.

23. Materialism and Empirio-Criticism (New York, 1927), p. 269.

24. Ibid., pp. 99-100.

25. We shall later argue that Soviet epistemologist V. S. Tiukhtin meets this challenge effectively by means of his cybernetic interpretations of "reflection." See Chapter VII.

26. There can be little doubt that Lenin uses the concepts "thing-in-itself" and "thing-for-us" quite seriously. His attitude toward their importance, as well as his criticism of Kant's use of "thing-in-itself," is evidenced in this following comment on Hegel from Lenin's Philosophical Notebooks: "This is very profound: the Thing-in-itself and its conversion into a Thing-for-others (of Engels). The Thing-in-itself is altogether an empty, lifeless abstraction. In life, in movement, each thing and everything is usually both 'in itself' and 'for others' in relation to an Other, being transformed from one state to the other." In Collected Works (Moscow, 1963), XXXVIII, 109.

27. Materialism and Empirio-Criticism (New York, 1927), pp. 206-07.

28. See Chapter VII.

29. Engels' characterization of man's notions of time and space as notions in continual development does not follow from an analysis of the "meaning" of "objective existence." Such an analysis would show that "objective" time and "objective" space are presupposed by the concept "objective existence." But if we can conceive of existence as "objective," i.e., as not relative to consciousness, then we can conceive of what such existence means, i.e., of time and space absolutely independent of consciousness, nor could we conceive of those notions as "developing" unless we could conceive of an absolute time and/or space as a basis for identifying this "developing." A Marxist-Leninist would probably reply that

what is relative and developing is our understanding of the internal structure and external relations of time and space, and that what is absolute is our knowledge that time and space impose inalterable limitations on activity and condition all existence. Lenin makes a similar explanation of the senses in which our knowledge of matter is both "relative" and "absolute." In any event, the validity of the special dialectical characterization of time and space does not affect the validity of Engels' basic argument that objective existence implies objective time and space.

30. Materialism and Empirio-Criticism (New York, 1927), pp. 176-79.

31. Ibid., pp. 189-95.

32. Ibid., pp. 230-31.

33. Ibid.

34. Ibid., p. 155.

35. Ibid., p. 288.

36. Ibid., p. 295.

37. Ibid., p. 282.

38. Ibid., p. 288.

39. Ibid., p. 251.

40. Ibid., p. 147.

41. Ibid., pp. 204-05.

42. Ibid., p. 251.

43. Examination of the subject index in Lenin's Philosophical Notebooks will confirm this observation. See Collected Works (Moscow, 1963), XXXVIII, "Subject Index."

44. Materialism and Empirio-Criticism (New York, 1927), pp. 372-47.

45. Ibid., p. 38.

46. See Chapter VII.

Notes to Chapter IV, Pages 67 to 77

1. G. Wetter, Dialectical Materialism (London, 1958), pp. 175-81.

2. Collected Works (Moscow, 1963), XXXVIII, "Preface."

3. Ibid., p. 291.

4. SSP, II (Summer-Fall, 1963), pp. 10-29.

5. Ibid., pp. 10-11.

6. Ibid., p. 11.

7. Ibid., p. 15.

8. Ibid., p. 12.

9. Ibid., pp. 19-20.

10. Ibid., p. 20.

11. Ibid., p. 12.

12. Ibid., p. 21.

13. Ibid., p. 22.

14. Ibid., pp. 24-25.

15. Ibid., pp. 27-28.

16. Ibid., p. 28.

Notes to Chapter V, Pages 78 to 90

1. SSP, II (Summer-Fall, 1963), p. 12.

2. SSP, I (Winter, 1962), pp. 34-35.

3. Ibid., p. 35.

4. SSP, II (Summer-Fall, 1963), 28. In his Philosophical Notebooks, Lenin listed the following "fields of knowledge from which the theory of knowledge and dialectics should be built": the histories of the separate sciences, of the mental development of the child, of the mental development of animals, and of language. To these histories he adds psychology and the "physiology of the sense organs." See Collected

Works (Moscow, 1963), XXXVIII, 353. Reflecting perhaps the rationalist tendency of modern Soviet epistemology, P. Kopnin adds to the "physiology of the sense organs." the newly opened field which is "the physiology of the entire higher nervous activity." See his "Dialectics," Philosophical Encyclopedia, reprinted and translated in SSP, I (Spring, 1963), 21.

5. G. Batishchev, "Truth," SSP, IV (Summer, 1965), pp. 32-34.

6. SSP, I (Summer, 1962), 21.

7. Ibid., p. 22.

8. See Chapter IV.

9. Op. cit., p. 24.

10. Ibid., p. 29.

11. Ibid., pp. 29-34.

12. Ibid., p. 24.

13. Ibid., pp. 34-35.

14. Ibid., p. 35.

15. Ibid., p. 35.

16. Ibid., p. 35.

17. P. Kopnin, "Dialectics," SSP, I (Spring, 1963), 21.

18. Ibid., p. 21.

19. Op. cit., p. 256.

20. Ibid., pp. 259-60.

21. Ibid., p. 260.

22. Ibid., p. 256.

23. Collected Works (Moscow, 1963), XXXVIII, 283.

24. Ibid., p. 319

25. I. Narski, T. Oizerman, and G. Batishcehv, "Truth," SSP, IV (Summer, 1965), 28-29.

Notes to Chapter VI, Pages 91 to 113

1. Collected Works (Moscow, 1963), XXXVIII, 110.

2. Quoted by T. J. Blakeley, Soviet Theory of Knowledge (Dordrecht, 1964), p. 59.

3. Quoted by V. S. Shvyrev, SSP, II (Summer-Fall, 1963), 28.

4. See P. V. Tavanets and V. S. Shvyrev, "Some Problems in the Logic of Scientific Knowledge," SSP, I (Winter, 1962), 33-35.

5. Philosophical Notebooks, op. cit., pp. 99, 361-62.

6. B. M. Kedrov, SSP, I (Fall, 1962), 14.

7. Ibid., pp. 13-15.

8. Ibid., p. 15.

9. I. S. Narski, "On the Conception of Truth," Mind, LXXIV (October, 1965), 536.

10. SSP, I (Fall, 1962), 3-24.

11. Tavanets, SSP, II (Summer-Fall, 1963), 3-9; Gorskii, Ibid., 49-68.

12. SSP, III (Fall, 1964), 3-14.

13. "Formal Logic: Logical Positivism and the Concept of Existence," SSP, II (Summer-Fall, 1963), 30-48; "On the Conception of Truth," Mind,LXXXIV (October, 1965), 24-34.

14. D. P. Gorski, "Formal Logic and Language," SSP, II (Summer-Fall, 1963), 62.

15. See Chapter IV.

16. SSP, II (Summer-Fall, 1963), 30-48.

17. Ibid., pp. 38-47.

18. SSP, II (Summer-Fall, 1963), 96-101.

19. I. V. Kuznetsov, "But Philosophy Is a Science," SSP, I (Summer, 1962), 35.

20. See pp. 84-85. SSP, II (Summer-Fall, 1963), 61.

21. Materialism and Empirio-Criticism (New York, 1927), pp. 170-74.

22. B. M. Kedrov, "Methodological Problems of Natural Science," SSP, III (Fall, 1964), 13.

23. Ibid., p. 9. See also Robert S. Cohen, "Dialectical Materialism and Carnap's Logical Empiricism," The Philosoph of Rudolf Carnap, (ed. Paul Schilpp; LaSalle, Ill.: 1963), pp. 99-154.

24. Materialism and Empirio-Criticism (New York, 1927), pp. 124-25.

25. Lenin, op. cit., p. 128.

26. Lenin, op. cit., p. 107.

27. See Chapter IV.

28. See Chapter IV, and Robert Cohen, op. cit.

29. "On the Conception of Truth," Mind, LXXIV (October, 1965), 537. The unorthodox Soviet philosopher Arnost Kolman completely breaks with the old Leninist thesis that our sensations mirror objects. He declares; "It is not impossible that you perceive the color of the lilac as I perceive the color of a dandelion and so conversely. To prove or disprove it, is in principle impossible." But, he adds, "whether this is so or not, does not practically change anything." Throughout his article, "Considerations about the Certainty of Knowledge," Kolman builds pragmatism on scepticism. Published in the series Occasional Papers, No. 2 (New York: American Institute of Marxist Studies, 1965), p. 8.

30. Kolman, op. cit., pp. 10-11.

31. Lenin, op. cit., pp. 372-74.

32. Kolman, op. cit., pp. 5-6.

Notes to Chapter VII, Pages 114 to 146

1. See Chapter V.

2. LXXIV, 530-39.

3. "On the Process of Reflecting Reality in Cognition," SSP, I (Fall, 1962), 45-53; "How Reality Can be Reflected in Cognition: Reflection as a Property of All Matter," SSP, III (Summer, 1964), 3-12.

4. SSP, II (Summer-Fall, 1963), 96-101.

5. Narski, Mind, LXXIV (October, 1965), 536.

6. Loc. cit.

7. Ibid., p. 533.

8. Materialism and Empirio-Criticism (New York, 1927), p. 38. See also Tiukhtin, "How Reality Can be Reflected. . .," SSP, III (Summer, 1964), 4.

9. SSP, III (Summer, 1964), 4.

10. "On the Process of Reflecting Reality . . . ," SSP, I (Fall, 1962), 22.

11. SSP, III (Summer, 1964), 9.

12. Ibid., p. 3.

13. SSP, II (Summer-Fall, 1963), 49-68.

14. SSP, I (Fall, 1962), 51.

15. Ibid., p. 54. See also SSP, III (Summer, 1964), 3-4.

16. SSP, I (Fall, 1962), 52.

17. SSP, III (Summer, 1964), 12.

18. A. I. Berg, "On Certain Problems Concerning Cybernetics," SSP, I (Summer, 1962), 57.

19. Ibid., p. 58.

20. SSP, III (Summer, 1964), 6-7.

21. Ibid., pp. 9-10.

22. SSP, I (Fall, 1962), 48-49.

23. Ibid., pp. 46-48.

24. SSP, III (Summer, 1964), 11-12.

25. SSP, I (Fall, 1962), 46, 47, 51-52.

26. Ibid., 46.

27. Ibid., pp. 46-47, 51-52.

28. SSP, III (Summer, 1964), 5.

29. Ibid., pp. 5-6.

30. Ibid., pp. 11-12.

31. Ibid., pp. 10-11.

32. SSP, I (Fall, 1962), 49.

33. SSP, III (Summer, 1964), 7.

34. SSP, I (Fall, 1962), 54.

35. Ibid., p. 50.

36. Ibid., p. 50.

37. Ibid., p. 51.

38. Ibid., pp. 52-54.

39. Ibid., p. 51.

40. See footnote No. 29, Chapter VI, for a description of how Soviet philosopher Arnost Kolman sharply breaks with the notion of a mirror resemblance between sensory images and objects.

41. See I. Narski, SSP, II (Summer-Fall), 38-39.

42. See V. Tiukhtin, SSP, III (Summer, 1964), 12.

43. We take the "concept" of cybernetics to be essentially described by the following definition from Webster's New International Dictionary, 2d ed.: "Comparative study of the control systems formed by the nervous system and brain and mechano-electrical communication systems, such as computing machines."

44. Particularly striking evidence of the Soviet shift from empiricism toward rationalism in M. V. Popovich's article, "Philosophic Aspects of the Problem of Meaning and Sense." See SSP, I (Spring, 1963), 25-31.

45. See Robert S. Cohen, "Dialectical Materialism and Carnap's Logical Empiricism," The Philosophy of Rudolf Carnap (ed. Paul Schilpp; LaSalle, Ill.: 1963), pp. 99-158.

46. See Chapter V, pp. 78, 86-87.

47. See Chapter VI, pp. 95-96.

48. See Chapter V, pp. 83-86.

49. See Chapter VI, pp. 88-109.

50. See Chapter VI, pp. 112-113.

51. See Chapter VII, pp. 134-37.

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