Marcuse & Habermas on New Science

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Marx's meaning of materialism as well as the extent of Hegel's influence on his thought has been in the center of controversy among Marxists ever since the publication in 1923 of Lukács' History and Class Consciousness *and Korsch's* Marxism and Philosophy *with the Frankfurt school, including Marcuse, embracing the Hegelian interpretation. The controversy has resurfaced within the Frankfurt school in Habermas' critique of Marcuse's concept of a "new science and new technology." Agger's analysis leads him to the conclusion that it is Marcuse's position which reflects the thinking of Marx while Habermas' rejection of Marcuse's antipositivistic attack logically implies an un-Marxian political reformism.*

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I. Critical Theory's Raison d'Etre

Ever since Lenin described cognition as the *reflection* of an objective reality in his 1908 text, *Materialism and Empirio-Criticism*, Marxism has been torn internally by epistemological conflicts. Today, these epistemological quarrels have resurfaced in the split between Herbert Marcuse and many of his critics. Especially notorious are Marcuse's arguments against positivism and for a "new science" based on an epistemology opposed to Marxism-Leninism's reflection-theory of knowledge.

Essentially, Marcuse and others from the original Frankfurt school (Max Horkheimer, Theodor W. Adorno, Walter Benjamin, Erich Fromm) have tried to broaden the focus of economism in the belief that Marx's critique of domination was definitely *not* restricted to purely economic factors. So-called critical theory is an attempt to rehabilitate Marx's complex, nonmechanical analysis of relations between economics

and culture. Indeed, *Marcuse's attack on positivism is a vital dimension of a dialectical social theory which transcends economism and Marxism-Leninism's naturalism,* systematized by the philosophical Lenin.[1] Below, I want to examine some of Marcuse's views on science and technology in counterpoint to Jürgen Habermas' 1968 critique of Marcuse's concept of a "new science and new technology."

I reject Habermas' position for its failure to appreciate Marcuse's

1. Lenin had not yet read Hegel when he helped create correspondence-theory in his 1908 text on the empirio-critics. Lenin's *Philosophical Notebooks* were not to appear until later, and the section on Hegel was written in 1914. The *Philosophical Notebooks,* in spite of appearances to the contrary, do not represent a clean break with the naturalism of Lenin's pre-Hegel writings. "Cognition is the eternal, endless approximation of thought to the world." [V. I. Lenin, *Collected Works,* Volume 38, "Philosophical Notebooks" (Moscow: Foreign Languages Publishing House, 1961), p. 195.] *But* he also writes "that man by his *practice* proves the objective correctness of his ideas, concepts, knowledge, science." (Ibid., p. 191.) In other words, Lenin flirted with a nonpositivist epistemology inspired by Hegel's destruction of the dualism of *noumenon* and *phenomenon.* Yet he could not ultimately shed the crude naturalism of his 1908 text. His *Philosophical Notebooks* have been a source of official Soviet Marxism's canonization of the "dialectical method" and dialectical logic, almost a religious formula for determining political sin and beatitude. Had Lenin emerged from *Materialism and Empirio-Criticism* to read Hegel's *Phenomenology of Mind* instead of *Science of Logic,* he might have broken through epistemological naturalism and its conversion into a cosmic principle of Soviet Marxism. Critical theory salvages from Hegel *not* the concept of a "unity of opposites" and its crystallization as the Absolute Idea in *Science of Logic* but Hegel's earlier argument for a negative rationality, a negative philosophy, in *Phenomenology of Mind.* Unfortunately for Lenin, he chanced upon those of Hegel's works most easily distorted as a tool of Soviet ideologists: a dialectical logic, designed to reconcile all—perhaps irreconcilable—contradictions. It is in the *Phenomenology of Mind* that correspondence-theory is given its death-blow in Hegel's unremitting critique of *Verstand* (naive common sense). In Marx's hands, dialectical thought could strive for the elimination of exploitation; indeed, Hegelian Marxism is rooted squarely in the *Phenomenology of Mind.* Yet dialectical logic found in the Hegel read by Lenin and in Engels' *Dialectics of Nature* was a conservative formula for justifying existent reality, merely a dialectic of concepts according to which *A* and not-*A* were identical. It was only a short step from Lenin's paean to Hegel in *Philosophical Notebooks* to the official Dialectical Materialism invoked by Stalin in his—un-Marxian—crusades against iconoclastic self-criticism such as that of Trotsky and Bukharin. It is especially surprising that Lenin, who in his political practice was highly sensitive to empirical tendencies (eschewing pregiven strategies), could have retrieved the highly speculative and empirically arbitrary 'dialectic of matter' from the ontological Hegel. It was impossible for Lenin's hard-headed pragmatism and empiricism in political matters to have had a moderating effect on Stalin when Stalin could turn to the "dialectical method," canonized in *Philosophical Notebooks,* and on the strength of its authority legitimize *any* political strategy.

critique of science. Throughout, I contend that Marcuse is *faithful* to Marx in reproducing a complex, nonlinear theory of domination combining economic and cultural factors. In analyzing positivist epistemology as a *factor* in modern domination Marcuse does not vitiate the basic Marx but only further develops Marx's analysis of the determinative effect of ideology and consciousness *on* material social relations.

Thus, Marcuse and the critical theorists are not opportunists or reformist social democrats in their critique of science as a hegemonic form of social ideology. I maintain that Marcuse is no more utopian or romantic than Marx when he calls for a new science and technology; indeed, Marxism has been crippled by theorists since Lenin who have entertained a crude correspondence-theory of knowledge. Critical theory, emanating from the original Institute for Social Research in Frankfurt, arose precisely out of Lukács' and Korsch's 1923 attacks on the neo-Kantianism of Eduard Bernstein and on Lenin's naturalism.[2] Lukács, Korsch, and the Frankfurt theorists argued that official Marxism—represented by the Comintern under Zinoviev's and Lenin's direction—was a counterrevolutionary mode of ideology which merely served to protect Bolshevism's political authority. Critical theory opposed a crude naturalist epistemology—according to which the concept *reflects* the given object—in attempting to rescue Marx's latent theory of a dialectical, postpositivist cognition.

My thesis is that Marcuse extends and brings to a conclusion the original 'Hegelian Marxian' critique of Bernstein's and Kautsky's neo-Kantianism and Bolshevik naturalism; and that this *in no way* renders him antimaterialist. I wish to show how the argument for a new science is one of the most timely forms of creative Marxian theory; how, indeed, the critique of positivism advanced by Marcuse is one of the most potent modes of the critique of ideology, the model for which is definitely found in Marx's writings on German idealism and religion. I shall argue that to be a Marxist today one must treat cognition and technology as vitally self-expressive forms of human labor which must be liberated from the dominion of positivism. In other words, positivism is *not* a legitimate epistemological strategy for theorists who retain Marx's vision of fundamental human liberation.

One of the issues often raised in current discussions of critical theory is the relation of the Frankfurt theorists to Marx. I believe that Marx was not an economic determinist and that his *model* of relations between

2. Georg Lukács, *History and Class Consciousness* (Cambridge, Mass.: MIT Press, 1971); Karl Korsch, *Marxism and Philosophy* (New York: Monthly Review Press, 1970).

'base' and 'superstructure' (economics and culture) orients the work of Marcuse, Horkheimer, and Adorno. Marx's model comprehends the reciprocal influences of ideology and economic structures. In this sense, the Frankfurt critique of positivism—exemplified by Horkheimer's and Adorno's *Dialectic of Enlightenment* and Marcuse's *One-Dimensional Man*—is directed at the *social function* of positivist common sense in diverting attention from the inhumanity and contradictions of capitalism.

Habermas, however, rejects Marx's *model* of critical theory, arguing that Marx reduced reflection to labor in rendering static the relation of culture and economics. He believes that Marx did not provide for the function of *consciousness* in readying revolutionary agents for political practice, indeed, that Marx reduced consciousness to an epiphenomenon *automatically* springing from economic relations. I believe that Marx provided analytically for the catalyst of self-reflection through his concept of critique. In this vein, Marx was the *first* critical theorist.

Yet Frankfurt critical theory diverges from Marx's historically specific reading of the potentially revolutionary industrial proletariat. While critical theory accepts Marx's model of the dialectic between theory and practice, it does not necessarily accept as valid today his reading of the revolutionary potential of the blue-collar working class. Marcuse has explicitly tried to go beyond the industrial proletariat in searching for new transitional agents.[3] He suggests that the "new sensibility" is itself a link between rebellion and the creation of a new socialist order.

An aspect of the "new sensibility"—Marcuse's revolutionary agent reduced to living human form—is new science, a cognition freed from positivist fact-fetishism and a dualist theory of knowledge. The new science is a mode of thought and imagination which engages in speculation for its own sake, a form of nonalienating work activity. This necessarily clashes with Habermas' notion that cognition is in principle oriented to the mastery of nature (society and the environment), and that only "communication" breaks out of this bondage to what Weber called "purposive rationality." Habermas is essentially less radical than Marcuse in suggesting that the nature of science cannot change—that science is instrumental labor, not a potentially healthy mode of self-expression—but only the *uses* to which science is put.

Habermas departs both from Marx's analysis of the proletarian revolution *and* from his model of the dialectic of theory and practice. This is a complex issue, because Marcuse himself argues that Marx was not bold

3. Herbert Marcuse, *An Essay on Liberation* (Boston: Beacon Press, 1969), pp. 49–78.

4. Karl Marx, *Grundrisse* (New York: Vintage, 1973).

enough in foreseeing the psychological and social consequences of destroying the division of labor. Yet in Marx's *Grundrisse*[4] as well as in the *Economic and Philosophic Manuscripts*[5] there are ample—if merely suggestive—hints about the qualitatively different socialist life. Although Marcuse would probably oppose Habermas' reading of Marx as a determinist—preferring to read Marx as a dialectician[6]—he goes *further* than Marx in sketching concretely *how* socialism might emerge from the present "damaged life." [7] It matters not how we return to Marx but rather how we *preserve* Marx's ideal of ending the division of labor and its separation of manual and mental labor while *transcending* Marx's focus on the industrial proletariat. Neither Marcuse nor Habermas retains Marx's transitional schema in unaltered form; I submit that Marcuse understands better than Habermas the new requirements of subversive practice, namely, that the development of a "new sensibility"—able to

5. Karl Marx, *Economic and Philosophic Manuscripts of 1844* (Moscow: Foreign Languages Publishing House, 1961).

6. Herbert Marcuse, "The Foundations of Historical Materialism," in *Studies in Critical Philosophy* (Boston: Beacon Press, 1973), pp. 3–48.

7. Theodor W. Adorno, *Minima Moralia* (London: NLB, 1974). Adorno's collection of aphorisms, *Minima Moralia,* has as its subtitle "Reflections from Damaged Life." All of the Frankfurt theorists believed that capitalism reproduced itself through the creation of distorted, false needs which prepared the consumer for infinite consumption. Marx did not explicitly foresee the extent to which commodity-production *could* expand unfettered. Adorno's phrase "damaged life" reflects the condition of the subject who has been totally manipulated by corporate prerogatives. The nuances of critical theory emerge from differing responses to the phenomenon of heteronomous personality: Marcuse, in spite of the vulgar reading of his work as irremediably gloomy and therefore un-Marxian, actually remains the most hopeful of all the Frankfurt-oriented theorists about the autonomy of the subject and its capacity for resisting the damaged life. As I see it, critical theory has been divided into two broad factions, the one relinquishing revolutionary hopes and retreating to abstract negation (Adorno) and the other reassessing Marx's transitional schema and his concept of class (Marcuse and Habermas). Regrettably, many younger theorists have become preoccupied with textual analysis and the historiographical reconstruction of Hegelian Marxism. This is not 'wrong', only insufficient; if carried to extremes, it risks becoming a left-wing version of scholasticism. Partly because the original Frankfurt theorists, especially Adorno, wrote widely on a vast range of subjects, it is—wrongly—assumed that they have the 'last word' on all contemporary issues. The resulting tendency to eschew empirical social research has prompted the charge that critical theory is merely "philosophic" and untrue to its Marxian beginnings. Just as it was necessary during the 1920's and 1930's to lift the dead hands of Marx and Lenin from Marxism, so today must the dead hands of Adorno and Horkheimer be lifted from critical theory. "Damaged life" must not become critical theory's sole *leitmotif,* preventing its re-engagement with the issues of theory and practice.

resist the proscriptions of the one-dimensional whole, and yet always aware of the possibility of happiness—is the most direct way to combat the division of labor.

All aspects of society are perceived by the critical theorists as political. The scientific ethos is grounded in the division of labor because the scientist is cast as an expert. The adoption of the bourgeois concept of science by Marxists has been disastrous because *the role of the expert is self-perpetuating*. Marcuse in his concept of "new science," in contrast to official Marxism-Leninism, treats everyone as capable of deep and profound cognitive acts and thus opposes Lenin's hypothesis that the proletariat could only aspire to "trade-unionist" consciousness and thus needed something "from without," from experts.

Marcuse challenges the role of the expert more directly than does Habermas, who has an emotional affinity for the role of the technocrat, albeit a reformist one. The "new sensibility" by its very existence challenges the division of labor which remains the primary source of alienation. Marcuse's "Great Refusal" essentially denies the division of labor. Although Marcuse challenges Marx for having been too reluctant to speculate about socialism, he shares with Marx the belief that the division of labor is the motor of alienation.

The impact of this debate on critical theory is to demarcate "radical reformism," as Habermas calls it, from a thorough-going radicalism. I believe that Marx was such a radical, as the entire *Economic and Philosophic Manuscripts* suggests; indeed, Marx envisaged a "natural science of history," assuming that nonhuman nature and human nature were umbilically related, and that freedom was a function of cognitively exploring nature's deepest secrets. I side with Marx's and Marcuse's radicalism because it more effectively challenges the social division of labor predicated on a technocratic hierarchy and professionalism. When people who have been excluded from roles of political, economic, and cultural responsibility learn that they can be 'new scientists', nothing stands in the way of their destroying the division of labor and transforming alienated labor into an unfettered mode of interaction with the cosmos: an interaction which Marx called *praxis*.

II. The Critique of Science

The contemporary debate within Marxism on the critique of science largely centers around the recent work of Marcuse. In fact, when Louis Althusser, Lucio Colletti, and Nicos Poulantzas charge the Frankfurt school theorists with being romantic Hegelian idealists, they usually

refer to Marcuse.[8] Marcuse has achieved some notoriety since *One-Dimensional Man* for his radical critique of science and technology, a critique which is the most radical of any in neo-Marxism.

From the second-generation of the so-called Frankfurt school, Jürgen Habermas has criticized Marcuse's conception of science and technology[9] for its alleged identification of domination and technical rationality. Habermas' position locates itself between Marcuse's radical hopefulness about creating a new science and, for example, the French Marxist-Leninist Louis Althusser's complete mistrust of the "ideological" critique of science. Habermas believes that we can salvage the instrumental rationality of science (and its technical applications in industrial development) without giving up the critical role of social philosophy. Much of Habermas' earlier epistemological work[10] was directed to elaborating such a perspective.

Other "friendly" critics have attacked Marcuse for his seemingly idealist, pre-Marxian critique of science. Claus Öffe, in a book on Marcuse edited by Habermas, has criticized Marcuse in much the same way as Habermas does.[11] Alfred Schmidt, the current director of the Institute for Social Research in Frankfurt, has in the same volume examined the putative connection between Heideggerian ontology and Marcuse's version of critical theory. In *Telos,* a number of critics have charged Marcuse with an illegitimate and un-Marxian borrowing of Heideggerian, Kantian, and Hegelian themes.[12] Indeed, Adorno in the 1930's was not completely convinced that Marcuse had yet shed the idealist paraphernalia of Hegelianism, enunciated in Marcuse's *Habilitationsschrift* on Hegel's theory of historicity.[13]

8. Louis Althusser, *For Marx* (New York: Vintage, 1970); Louis Althusser and Étienne Balibar, *Reading Capital* (New York: Pantheon Books, 1970); Lucio Colletti, *Marxism and Hegel* (New Jersey: Humanities Press, 1973); Nicos Poulantzas, *Political Power and Social Classes* (London: NLB and Sheed and Ward, 1973).

9. Jürgen Habermas, "Technology and Science as 'Ideology'," in *Toward a Rational Society* (Boston: Beacon Press, 1970), pp. 81–122.

10. Jürgen Habermas, *Knowledge and Human Interests* (Boston: Beacon Press, 1971).

11. Claus Öffe, "Technik und Eindimensionalität. Eine Version der Technokratiethese?"; and Alfred Schmidt, "Existential-Ontologie und historischer Materialismus bei Herbert Marcuse," in *Antworten auf Herbert Marcuse* (Frankfurt a. M.: Suhrkamp, 1968).

12. Mitchell Franklin, "The Irony of the Beautiful Soul of Herbert Marcuse," pp. 3–35; and Paul Piccone and Alex Delfini, "Marcuse's Heideggerian Marxism," *Telos,* 6 (Fall 1970): 36–46.

13. Cf. Martin Jay, *The Dialectical Imagination* (Boston: Little, Brown and Company, 1973), pp. 28–29.

Marcuse, thus, does not have many allies in his critique of science and technological domination. Admittedly, Horkheimer's and Adorno's own 1944 work[14] was based upon a critique of enlightenment, which, it now appears in retrospect, was itself a thinly-disguised critique of the ideological functions of science. Marcuse in his critique of positivism has not attacked all possible forms of cognition as contributing to domination; indeed, he has theorized that we can create a "new" cognition which will no longer satisfy the ideological needs of capitalism. In fact, Marcuse has also conceived a "new" technology which could liberate nature. In this sense, he is perhaps more hopefully utopian than were Horkheimer and Adorno.

Marcuse's concepts of "surplus repression" and "one-dimensionality" themselves constitute radical innovations in critical theory. Yet the most contentious part of Marcuse's work *for Marxists* is his critique of technical rationality. The most commonly expressed worry is that Marcuse shifts the focus of the traditionally economic analysis of capitalism from a critique of the extraction of surplus value (allegedly Marx's only concern) to a critique of technology and science in general. Thus, it is feared that Marcuse loses the specific weapon of Marxian analysis which is the critique of political economy. I shall argue that Marcuse does *not* reject Marxist political economy or the critique of domination but only broadens its focus to include superficially noneconomic factors. This is at once to defend him against his scientistic critics and to supersede a certain tentativeness in his formulations of new science.

I shall attempt to display the relevant passages wherein Marcuse explicitly theorizes about science and technology. Over time Marcuse has become progressively more radical in his criticism. *One-Dimensional Man* harbors an attack on the "use" of technology. *An Essay on Liberaiton,* however, charges technical rationality with containing an inherent function of domination, leading Marcuse to speculate about a nonexploitative science and technology. The essay on Weber which has occasioned so much critical response echoes the more radical critique of technique. In *One-Dimensional Man,* Marcuse at least gave the impression of being eclectic with respect to assessing the possible uses of technology. Some uses are better or worse than others. Technological domination is another chapter in the development of capitalism. He has never relinquished this view. Yet he has become *less* eclectic with respect to his attack on science. He now views technical rationality as thoroughly pernicious for what it does to the "sensibility" of the person who ap-

14. Max Horkheimer and Theodor W. Adorno, *Dialectic of Enlightenment* (New York: Herder and Herder, 1972).

prehends and appropriates the external world under what he believes are the morally neutral categories of science. It is no longer for Marcuse a question of deciding what the uses of technology should be except in a very long-range sense. Critical speculation should instead assert that there *can* be a science and technology which respect the rights of nonhuman (and by implication, human) nature. This is Marcuse's most radical contention, as most social theorists after Weber have been content to view science and technique as unchanging forces in capitalist *and* socialist development.

Yet his concern with technological domination does not split him off from the critique of political economy. It only adds another dimension to the contemporary critique of domination. In this sense, Marcuse is not un-Marxist; Marcuse accepts the materialist dialectic of Marx, the postulate that being conditions consciousness but that consciousness can *alter* being. Yet he is uncommitted to the letter of Marx's class analysis as it has been crudely transported from the mid- and late-nineteenth century to the present by certain theorists of the Second International like Bernstein, Kautsky, and Hilferding (who opposed Marx), and by theorists of the Third International like Bukharin, Lenin, and Trotsky (who 'accepted' Marx). The critical theory of society has self-consciously *connected* the critiques of culture and of economics. Marcuse (like Marx) is convinced that capitalism cannot be analyzed simply in terms of its economic dysfunctions. Critique must also attack the cultural and ideological domination which arises in one-dimensional thought, domination which *hides* exploitation. Marcuse sees positivism as one of the factors in the 'superstructure' which protects the fundamentally structural irrationality of social production for private consumption. He wants to destroy the conservative function of science in analyzing its systemic role as an insidious thought-mechanism for hiding domination in mystifications and "natural laws."

In thinking of a "new science" Marcuse engages in vitally necessary critical speculation. He sees that domination has penetrated our basic libidinal and psychic constitution. Science and technique as species-specific faculties must become modes of "play" in the free society. With the revolution our relation to things and to our bodies and minds will change. Marx himself envisaged the qualitative transformation of labor, indeed, the *elimination* of alienated labor.

This essay only deals with Marcuse's critique of science. Yet implicit in Marcuse's critique is an important dimension of critical theory, a mode of theory which recognizes that the historical dialectic has not stood still since Marx wrote *Capital*. As Marx *recognized,* economic exploitation is not the only mode of domination. The economic system and corporate

needs for expanded markets are protected and reproduced by a layer of apparently noneconomic domination. Marcuse sees that the secret of the staying-power of capitalism lies in its ability to *hide* economic exploitation in the cultural myth that the actual is rational. Only by breaking this myth, by showing that science and technique as forms of human labor can be radically humanized, can we ever begin to attack the structural causes of exploitation. The hegemony of the economy is reaffirmed by a mode of positivist common sense which cannot fundamentally challenge 'reality's' hold on people. We are taught that to be healthy human beings and good citizens we must accept the facts. Capitalism survives as long as this myth remains intact. The critique of science is the first step along the road towards the critique and overcoming of domination.

III. Marcuse on Science, Technology, and Weber

Marcuse has not written much of a systematic or specific nature on the subject of science and technology. *An Essay on Liberation* contains some of the most explicit and vivid passages. *One-Dimensional Man* itself prefigures much of his later work on technology, and it would be useful to see what he has written about science. Although Marcuse's remarks are often vague, they nonetheless form an important basis for the critique of science.

An Essay on Liberation contains passages which echo his view that science and technology contribute to the closure of one-dimensional society. But the oppressive functions of science and technology can be broken and these forces pacified and humanized. *The root of Marcuse's indefinite, inchoate hopefulness about transforming one-dimensional society is precisely located in his view that science and technology can be fundamentally reconstructed.* While he has often been charged with "one-dimensional gloom" and unwarranted pessimism, it is clear from examining his views on emancipatory technology that he is far from resigned to the ultimate fate of one-dimensionality. Technologization can be qualitatively informed by human design, something which Marx himself nearly recognized in the *Grundrisse*. It is an interesting fact that Marcuse is one of the very few Marxists to have read and understood the full implications of Marx's *Grundrisse* and its passages on technological domination. The orthodox view, given life by Lenin's naturalistic epistemology, is that Marx conceived of science and technology merely as factors in the control of nature and society.

Marcuse links what he calls the "new sensibility" to the development of a pacified technology and science. His view is that domination infil-

trates the psyche, changing the person into an automaton charged with the infinite consumption of unneeded goods. The new sensibility is the subject, or the agent, of new science.

> The liberated consciousness would promote the development of a science and technology free to discover and realize the possibilities of things and men in the protection and gratification of life, playing with the potentialities of form and matter for the attainment of this goal. Technique would then tend to become art, and art would tend to form reality: the opposition between imagination and reason, higher and lower faculties, poetic and scientific thought, would be invalidated. Emergence of a new Reality Principle: under which a new sensibility and a desublimated scientific intelligence would combine in the creation of an *aesthetic ethos*.[15]

This is one of the most incendiary passages in the whole of Marcuse's work. Here he practically identifies a new science and art in terms of the "aesthetic ethos." He is influenced by Kant's view in the *Critique of Judgement* that the ultimate union of moral freedom and necessity is contained in art. Marcuse's idea of "desublimated scientific intelligence" is no longer congruent merely with a science which is responsibly applied. Marcuse does not mean only that nuclear physicists should refuse to engage in war-related research, although he would agree with this as a piece-meal goal. Rather, the desublimated scientific intelligence conceives of the natural universe as an object of beauty and mystery, an object in which men see their own reflection. By damaging nature, technical rationality damages the human spirit.

The aesthetic posture taken by Marcuse was influenced by French Surrealism and its recrudescence in the May Movement in 1968. I would argue that this concept of new cognition is legitimately compatible with the critique of political economy. Much of Marcuse's writing on science is of a metaphoric and suggestive character. He wants merely to point out that the re-ordering of emancipatory priorities will include the speculation of a *new* science no longer beholden to the loveless, instrumentalist concept of cognition prevalent since Francis Bacon. While science can be used to dominate nature and society, so too can it be used to liberate them, indeed, to be a *medium* of self-expression once the veil of distorting domination is lifted. Marcuse does not make the identification of the aesthetic ethos and new science lightly. He realizes full well that he thus undermines one of the most deeply ingrained

15. Herbert Marcuse, *An Essay on Liberation*, p. 24.

positivist assumptions, namely, that science is a neutral, preprejudicial tool for the architecture and manipulation of society.

The ultimate goal of an aestheticized science would be "society as a work of art." [16] Marcuse is not a casual phrase-monger. "Society as a work of art" is a phrase carefully chosen to express the possible identity of a heretofore surplus repressive social order and the ideal of beauty. In the Paris manuscripts Marx wrote about the same thing. But Marx submerged his own aesthetic vision of a free society in the scientific political economy which was *then* a more forceful mode of critique. For Marcuse today, the concept of an aesthetic politics is the most potent mode of critique in the way it joins two apparently irreconcilable concepts: society which demands deference to an oppressive superego, and beauty.

In the same way, by hypothesizing a beautiful, happy cognition, Marcuse does violence to the belief that cognition must be a sterile, unmetaphysical business, performed without moral or aesthetic consciousness. Marcuse elsewhere calls this a lesson in "political linguistics": we attack one-dimensional ideology by turning its categorical language against it. By demonstrating that science can be nonrepressively imaginative, we subvert one of the basic assumptions of dominant ideology. Marcuse has, of course, demonstrated nothing, for his is utopian speculation the *proof* of which will only be found in the future when all of this will be made possible. He is *not* saying that we can create a new science without making the revolution, only that we should treat this task as one of the important emancipatory priorities.

But Marcuse is engaged in something more profound than itemizing the goals of the revolution, although that is itself important. He is trying to argue that the dialectic between given conditions and subjective spontaneity can only be activated in the electric moment when people realize "that they have nothing to lose but their chains." The chains today include the heavily proscriptive ideology of the division of labor, reinforced and strengthened by the ideology of professionalism and scientism. "New science" is the state of mind of people who recognize the unnecessary character of their bondage, who *choose* not to believe that experts and professionals must constitute a political élite.

The then-timely injunction by Marx and Engels against utopian speculation is rejected by Marcuse.[17] Marcuse believes that science and technique contain within themselves the forbidden fruit of freedom. The gloom in some of his earlier work is vitiated by this kind of optimism

16. Ibid., p. 45.
17. Ibid., p. 5.

about reconstructing the very basis of technical rationality according to the needs of the life-instincts.

It would be useful to return to *One-Dimensional Man* which is more explicit about technological domination as the highest form of exploitation. It is important to note that the whole of the Frankfurt school used the words 'domination' and 'exploitation' nearly synonymously. This indicates a subtle revision and extension of Marx's category of the exploitation of labor. No longer is this the only credible mode of dehumanization. Domination is the *hidden* exploitation of humanity. Technological domination is based on the fetishism of commodities. People buy products because the products express themselves, or so they believe. The fact that exploitation in the strict economic sense has metamorphosed into domination, Marcuse argues, *in no way* means that it loses its embeddedness in a class-structure. Domination is based on profit-imperatives, now as before; in advanced capitalism profit is extracted *by* manufacturing false needs and *by* deluding consumers into infinite consumption. *Domination is the lived-ideology which rationalizes exploitation.*

In *One-Dimensional Man,* Marcuse systematized his critique of technological domination. This is less well-developed than his speculation about a new science in *An Essay on Liberation* and *Counterrevolution and Revolt.* Marcuse then conceived of the "Great Refusal" as the only credible mode of escape from homogenization. When he wrote *One-Dimensional Man,* he was intent on illuminating the shaky coalition between reason and unreason which characterizes the dominant ideology of late capitalism. It is fair to say that Marcuse was then still agnostic about new or old science. He talks here of the "use" of technology. Should we bomb Hiroshima or harness hydroelectric power? This is surely not a problematic question any longer in *An Essay on Liberation.*

In his earlier book, Marcuse wanted to show that technological development could actually bring an end to want and scarcity—but not necessarily a *new* technology, directed by the cognitive fantasies of non-Cartesian scientists; perhaps the same old technology, yet one which would not spew out useless products and extract the worker's surplus value. At the time *One-Dimensional Man* was written, the critique of technical domination was virtually unheard of in left-wing thought, apart from some of Walter Benjamin's allusive writings on the technology of culture which themselves definitely influenced Marcuse. Concern with the foibles of technology was often equated with romantic Luddism. Yet Marcuse is no Luddite. He wanted somehow to preserve the productive function of factories while changing the entire social structure which defined the use of factories. He came to see, however, that the tech-

nology could not be left intact (for example, the assemblyline would have to be transformed). It would itself have to be reconstructed in terms of the "aesthetic ethos," according to a "rationality of gratification." Marcuse has come to see that technology could still be intrinsically oppressive in the matrix of corporate capitalism even *if* it provided food for the world's poor—something which it fails to do now. What matters is the way that the ideological superstructure produces false needs and thus perpetuates the productive principle of capitalism. Planned obsolescence and the creation of false needs are keys to the life of monopoly capitalism.

Marcuse essentially argues that science and technology have become factors both in the 'base' and 'superstructure' of capitalism. He contends that to disregard the oppressive capacity of technology is wrongly to conceive of the transition to socialism strictly in political economic terms. According to economistic Marxism, the present-day Soviet Union is a socialist society. While in a superficial sense the Bolshevik revolution was politically successful, Marcuse doubts that there has been a qualitative change in the daily life of workers, who are still chained to the oppressive technology built during and after the Stalin period.[18]

This establishes the distance of Marcuse from orthodox Marxian economics which fails to conceive of technique and science as factors in the 'base', the 'mode of production'. Socialized means of production do not by any means guarantee the end of domination, which may live on in the repressed motivational structures of people, but, theoretically, only of the exploitation of labor, defined in terms of surplus value. Exploitation, however, *becomes* domination under the command-economy of the USSR. Workers do not lose their surplus value in the orthodox sense, but they are nonetheless victims of domination and surplus repression. Their labor is expropriated by the state and turned against them.

Marcuse's aesthetic concerns in *An Essay on Liberation* and *Counterrevolution and Revolt* must be read next to his analysis of technological domination in *One-Dimensional Man*. The present reality is rooted in technical rationalization; and this rationalization can only be exploded by radical speculation about alternative uses of the productive apparatus and of science. Marcuse's speculation can be summarized in the image of "society as a work of art." This is completely at odds with Habermas' more conventionally Kantian-Weberian position on technique and science.

There is another domain in which Marcuse has advanced his critique of technical rationality. His essay on Max Weber, first published in

18. Herbert Marcuse, *Soviet Marxism* (New York: Vintage Books, 1961).

1964, raises all of these questions in a compact form. Weber was the prophet and sociologist of rationalization. Although he recognized the dysfunctional tendencies of bureaucratic capitalism, he was a "nostalgic liberal" who could not fundamentally oppose the society to which he was normatively committed. Marcuse has argued that Weber's concept of rationality does not exhaust the universe of possible rationalities. One can conceive of nonexploitative modes of rationality which are not vehicles of domination, such as a "rationality of gratification."

Society is irreducible to the predetermined, naturalistic logic of the physical universe, for it is malleable and changeable by human design. Its operative rationality can be altered, especially if it is an *irrational* rationality.

> In the unfolding of capitalist rationality, *irrationality* becomes *reason*: reason as frantic development of productivity, conquest of nature, enlargement of the mass of goods.[19]

Weber, the most prescient prophet of advanced capitalism, eternalizes what is historical. He makes the instrumental rationality of profit-maximization based on mathematical accounting procedures and the cultural "disenchantment of the world" a universal rationality. In the same vein, he conceives science as the most rational mode of social ordering. Value-free science, systematized by Weber in his writings on the objectivity of science, supports certain political interests.

Weber was one of the most perceptively positivist of all sociologists. The concept of a new science, freed from unmetaphysical fetters, might have been developed precisely in opposition to Weber's austere conception of science, a "value-free" science which nonetheless sells out its freedom to the highest and most powerful bidder. Not only is science not politically neutral, it might one day embody aesthetic perspectives on a natural world which is not to be thoughtlessly plundered. As a willing partisan of bourgeois instrumentality, this would have been lost on Weber.

For Weber "occidental reason becomes the *economic* reason of capitalism." [20] This "economic reason" is concretized in the "methodical-scientific apparatus." [21] The final blow to the idea of an apolitical science is this:

> The very concept of technical reason is perhaps ideological. Not only the application of technology but technology itself is domina-

19. Herbert Marcuse, *Negations* (Boston: Beacon Press, 1968), p. 207.
20. Ibid., p. 205.
21. Ibid., p. 205.

> tion (of nature and men)—methodical, scientific, calculated, calculating control. Specific purposes and interests of domination are not foisted upon technology "subsequently" and from the outside: they enter the very construction of the technical apparatus. Technology is always a historical-social *project:* in it is projected what a society and its ruling interests intend to do with men and things. Such a "purpose" of domination is "substantive" and to this extent belongs to the very form of technical reason.[22]

This long quotation summarizes Marcuse's view of science and technique as a transmission-belt between human sensibility and the economy. This passage, as we shall see, is precisely the battleground between Habermas and Marcuse. Marcuse asserts that science is domination, that science hides exploitation in ideological mystifications. Science as we currently understand it—scientists observing a mute, inert universe of exploitable objects—blunts the critical spirit. Indeed, science *wants* to dominate; it rationalizes domination by offering useful knowledge. New science would shed this quiescent, distorted role; it would reject the reflection-theory of knowledge.

There is yet another source of Marcuse's indictment of positivism and technical rationality as handmaidens of domination. In his book on Freud, *Eros and Civilization,* Marcuse laid the groundwork for his critique of technical rationality. While the book treats another theme, it does contain the germs of Marcuse's later, more articulate position on science and technology.

Marcuse argues that science fetishizes facts and denounces the idea of an "earthly paradise." With the nonsurplus repressive release of the erotic life-force, Marcuse believes that science could be transformed into a mode of playfulness, drawing upon Schiller's concept of play as a self-expressive form of freedom.

Marcuse in his basic study of the liberating insights of psychoanalysis wants to reverse the cult of instrumental reason by releasing the sensuous capacities of the person. He believes that Eros could be released in such a way that our fundamental modes of interacting with nature would be changed. This is Marcuse's first full-fleshed articulation of the domination of nature. The "aesthetic dimension" can be one medium for the liberatory desublimation of Eros, which would entail the reconstruction of science and technique according to a "rationality of gratification."

The "play-impulse" is the motive-force of human labor, utilized to build an erotic and liberated society. Nature would become an object of

22. Ibid., pp. 223–224.

contemplation and fantasy, while cognition would become a productive force of imagination and art. Cognition would refuse to exploit nature for short-run instrumental purposes in pretending that concepts can *exhaust* an inexhaustible reality. Moreover, the contemplation and adoration of nature would be an end in itself, a mode of self-creation. Marcuse does not oppose the domination of nature 'only' because it causes ecological crises. He is concerned with redirecting the erotic force of labor towards instinctually gratifying tasks. The domination of nature under capitalism is bad sublimation, giving rise to what Max Horkheimer called the "revolt of nature," [23] while the contemplation of nature is healthy sublimation.

IV. Habermas' Critique

Habermas' critique of Marcuse's "romantic" idealism with respect to science turns on the issue of the relation between work and interaction. Habermas conceives natural science according to a logic which makes it irreducible to communicative rationality. In this, he opposes his conception of science to that of Marcuse, who thinks of science as amenable to retranslation into the communicative situation and the "rationality of gratification." Habermas elsewhere accuses Marcuse and the whole of the original Frankfurt school of confusing the logic under which *nature* could be apprehended with the logic under which *another person* could be understood.

> The resurrection of nature cannot be logically conceived within materialism, no matter how much the early Marx and the speculative minds in the Marxist tradition (Walter Benjamin, Ernst Bloch, Herbert Marcuse, Theodor W. Adorno) find themselves attracted by this heritage of mysticism. Nature does not conform to the categories under which the subject apprehends it in the unresisting way in which a subject can conform to the understanding of another subject on the basis of reciprocal recognition under categories that are binding on both of them.[24]

Marcuse might not disagree with this. Yet his conception of science would in fact allow for some sort of 'dialogue' between nature and men. Habermas' original idea that the "speculative minds" from Frankfurt wanted to "resurrect" nature is incomplete. Marcuse wants to resurrect

23. Max Horkheimer, "The Revolt of Nature", in *Eclipse of Reason* (New York: Seabury Press, 1974), pp. 92–127.

24. Jürgen Habermas, *Knowledge and Human Interests* (Boston: Beacon Press, 1971), pp. 32–33.

humanity. Only by treating all otherness (be it nature or other people) as potentially intimate with human subjectivity can the person co-exist with the rest of the world nondestructively. In the strict sense, the person cannot talk *with* trees or animals. But in another sense, the person learns to treat other people gently and responsibly by thinking of trees and cats as possessing some inherent worth, even 'natural rights'.

I dispute the claim that Marcuse is concerned with the domination of nature for any other reason than to rehabilitate humanity.[25] Marcuse believes that science can be made nondominating with respect to its subject matter, that science need not belong to the arsenal for the assault on nature. For science itself to engage in a Great Refusal of reflection-theory would take us a step closer to the imminent destruction of positivism.

Habermas has ulterior motives for calling Marcuse and the others mystical. He wants to show that Marx himself did not clearly distinguish between the logic of laboring and the logic of self-reflection. Had Marx done so, he would not have created a scientism utterly purged of imaginative, creative subjectivity. He would not have given birth to Marxian naturalism. Yet as Habermas himself *allows* in the passage just quoted, the "early Marx" too was party to the mystification of nature. This demands of us a decision as to whether or not there are two Marxs, a 'humanist' and a 'scientist'. A colleague of Habermas agrees with him about Marx's hidden positivism which emerges in the later economic works.[26] Yet there is also a sizable and authoritative literature which contends that there is only one Marx, one which includes the "mystical" early Marx as well as the later economic one.[27] If this is so, there may not be grounds for charging Marx with hidden positivism or, in Habermas' terms, with the identification of labor and self-reflection.

This is not a purely scholastic quarrel for it is precisely the ground on which Marcuse splits off from critics like Habermas who wish to preserve positivist epistemology *within* Marxian critique. Marcuse believes that aesthetic and erotic interests can *co-exist* with instrumental ones in such a way that we can no longer distinguish analytically between the logics of labor and self-reflection.

In an essay entitled "Technology and Science as 'Ideology'," [28] Habermas challenges Marcuse again, but this time with fuller force. Habermas

25. William Leiss, *The Domination of Nature* (New York: G. Braziller, 1972).

26. Albrecht Wellmer, *Critical Theory of Society* (New York: Herder and Herder, 1971).

27. John O'Neill, "On Theory and Criticism in Marx," in *Sociology as a Skin Trade* (London: Heinemann Educational Books, 1972), pp. 237–263.

28. Jürgen Habermas, "Technology and Science as 'Ideology'," in *Toward a Rational Society* (Boston: Beacon Press, 1970), pp. 81–122.

argues that the Marcuse of *One-Dimensional Man* envisages a "new" technology and science. Habermas is worried that a new science is inconceivable according to certain transcendental criteria. He argues correctly that Marcuse's indictments of science and technology as tools of domination are intimately related.[29]

Habermas in his own work has tried to distinguish between two levels of cognition, the one oriented to instrumental control, the other to communicative discourse and enlightenment. But Marcuse says implicitly that we can conceive nature *itself* as a partner in the human enterprise, albeit a silent partner. This is what Habermas so dislikes about Marcuse's position. His summary judgment is:

> The idea of a New Science will not stand up to logical scrutiny any more than that of a New Technology, if indeed science is to retain the meaning of modern science *inherently* oriented to possible technical control. For this function, as for scientific-technical progress in general, there is no more "humane" substitute.[30]

Did Marcuse ever mean to say that the actual nature of tools and machines would change? Yes, he would answer, the tools must change. Techniques which are rooted in the domination of nature would be abandoned, although *technique itself*—the very manipulation of nature —would be preserved. He is not saying that we should renounce the mastery of nature but that we must *not* conceive of nature as something which can be arrogantly exploited. Marcuse proposes an almost theological perspective on nature, yet his is clearly *Marxian* theology. Why does this spiritual, religious perspective on nature have to be viewed as either necessarily preindustrial or mystic-conservative? After all, as young Marx said, we too are part of nature. By violating nature thoughtlessly we violate ourselves as potentially natural subjects.

Habermas reads Marcuse as saying that machines themselves would vanish into thin air. This allows him to dismiss as utopian the idea that we could create a new technology. Marcuse, however, is careful to observe the ban on graven images, the ban on drawing up specific blueprints of the future. Like Marx, he does not want to offer a detailed picture of the future before it is upon us. This Judaic reluctance does not mean that Marcuse is necessarily unrealistic. It may be the only realistic way to confront the complex, indeterminate problems of planning for a new order without violating the self-determining, exuberant nature of the revolutionary transition.

29. Ibid., p. 87.
30. Ibid., p. 88, emphasis added.

Habermas did not have the advantage of having read *An Essay on Liberation* when he wrote the essay on science and technology. I have said that *One-Dimensional Man* is vague and rather underdeveloped compared to Marcuse's later, more explicit writings on new science and technique. In *One-Dimensional Man,* he sometimes seemed to be saying simply that industrial processes should be left unchanged but that the *uses* of technology must change.

Yet in his later work, Marcuse is clearer about the need for *new* technology and science, technology and science which operate with a new rationality. Marcuse has come to recognize the aesthetic, libidinal *potential* of politics, science, and industry. He says that the interest in beauty is equally as important in a potentially affluent society as the interest in freedom. No longer is he concerned only with reorienting the political uses of technique, as Habermas correctly claims.

Habermas' critique of Marcuse belongs to his overall attempt to reconstruct Marx's critique of political economy in transcendental terms. The attack on Marcuse's concept of new science is a dimension of his general attack on Marx's assessment of relations between base and superstructure. Is Marcuse as radically revisionist as Habermas in reassessing Marx's model of critique? Marcuse retains Marx's categorical framework yet tries to analyze the new capacities of the superstructure to veil economic dysfunction in illusions and to create false needs. Habermas chooses to elaborate his critique of Marx primarily in terms of the distinction between work and interaction. Marcuse does not share Habermas' view that critical theory needs to revise Marx in terms of Marx's basic category of labor. Marcuse follows Marx in implying that work can be reconstructed to resemble intersubjective discourse, or at least, to resemble the aesthetic model of artist and object. This is the part of Marcuse's and "early Marx's" position which Habermas explicitly rejects on transcendental grounds.

What does Habermas reject in Marcuse's position? It is something quite fundamental. Habermas should be read as one of the most perceptive, even dialectical, theorists of technical rationality. It would be superficial to call him a positivist; he is indeed committed to the critique of domination. Yet Habermas rejects the "mystical" radicalism of Marx and of the original Frankfurt school. Marcuse for him is only a vehicle for his denunciation of these 'romantic utopians' who believe that they can liberate fundamental human nature as well as labor power.

Habermas has developed a Kantian Marxism. It is Kantian in the way that he transcendentally divides communicative-reflective from material-instrumental modes of rationality. Speaking is not laboring, says Habermas. We can fundamentally change the nature of society, make it

more enlightened and rational through a therapy which corrects "distorted communication" and overthrows the positivist taboo on metaphysical, political "reflection." Yet we *cannot* change the relation between humanity and nature by changing the nature of labor (*Arbeit*). Habermas feels that there will never be a "new" science or technology, only the same old apparatuses *used* differently by enlightened technocrats and "rational" interlocutors.

Habermas, as we have seen, criticizes Marx for collapsing the categories of labor and self-reflection. Marx allegedly contributed to the rise of positivism within dialectical theory by assimilating the self-reflective basis of speech and social philosophy to a crude materialist model of laboring. For Habermas, rational self-reflection is designed precisely to reveal the hidden unity of "knowledge" and "interest," and the value-commitment and ideological presuppositions of particular cognitive approaches. Marx, by transforming science and self-reflection into a mode of production, dissolved the unity of knowledge and interest, or at least prevented "science" from reflecting on its own methodological and political auspices.

Habermas rejects Marcuse's position because he wants to *reseparate* the functions of labor and speech, joined illegitimately by Marx. Yet the Frankfurt approach is to *accept* Marx's unification of work and science in suggesting that all modes of self-objectifying labor must be liberated under a new order. Marcuse suggests that the liberation of science and technology must *accompany* the liberation of labor; science and technology are not abstract social forces, they are two expressions of the life-instincts, two forms of *labor*.

Science is a surplus repressed form of the cognitive 'instinct', the instinct or drive to use the mind freely and creatively. This is where Habermas steps in to remind the Frankfurt theorists that science "as such" must always remain a form of technical rationality, a dispassionate, purposively-rational mode of instrumental calculation. No more can science change than can the fundamental cosmos change. He says that we must reserve our energy for the *possible* tasks such as transforming political economy and enhancing the rational capacity to engage in undistorted communication. By no means are these trivial or unimportant goals in themselves. Habermas is not simply a reactionary. Yet his critical perspective is much narrower than that of Marcuse. He does not allow for the liberation of science from positivist fetters, for he does not believe that our fundamental relation to the object-world can be altered. For Habermas, the object will always be a somewhat imposing residue of our inability to know all things; with Kant, we cannot allegedly know the *noumenon,* the thing-in-itself. Therefore, we must re-

strict our critical commitment to the remediable matters of political economy and rational speech. Marcuse's "mystical" utopianism with respect to the liberation of cognition and technique (not to mention sexuality which, interestingly, Habermas rarely mentions) must be rejected.

Habermas reads a Weberian Marx, a Marx who should have applauded technical rationality and the methodical "disenchantment of the world" while preserving the interest in liberating communication from ideological distortions. Habermas seems to accept the Weberian hierarchy of rationality which places "rational-legal" at the top. His "Marx" would not change the fundamental nature of human existence, he would only provide a tool for destroying positivism and revealing the unity of knowledge and interest. Habermas would reject Weber's value-freedom but would accept Weber's concept of rational-legal authority. Marcuse by contrast accepts neither rational-legal authority nor value-freedom. For him, there must be a new science as well as a new *order* of rationality (which, in *Eros and Civilization,* he tentatively calls a "rationality of gratification").

Ultimately, Habermas wants to challenge not the logic of positivism but only its *hegemony* over other forms of cognition (like self-reflection, which positivism disallows). Marcuse, contrastingly, wants to *destroy* positivism by showing that positivism's fact-fetishism is a symptom and agent of a one-dimensional social order. Cognition for Marcuse is a form of life-giving self-objectification. Positivism is damaged cognition; the cognitive faculty will only be liberated when domination is overcome.

Habermas wants to reserve some of the field for positivism, for he feels that dispassionate, objectivist science is one of the legitimate competing epistemological strategies. On the face of it, this seems reasonable. But it is unreasonable if we treat science as another victim of domination. Positivism is a product of the overrepression of our basic imaginative energies and drives. Marcuse wants to shatter positivism because it is a moment of the general pathology of domination. Habermas would supersede domination by rational discussions amongst experts. The bourgeois, fact-fetishizing human character would then be left intact. Marcuse would challenge this very 'human nature' as *unnatural* by fighting any unnecessarily harsh repression of the basic drives. These drives, when liberated from surplus repression, will issue in rational forms of nondestructive personality, such as, new science.

New science will emerge, Marcuse implies, from the abolition of the division of labor. Cognition will no longer be bound to system-supporting functions oriented merely to accomplishing technical tasks. Instead, cognition will blossom as a natural function enjoyed for its own sake;

indeed, science will be transformed from a fragmented form of labor into a self-expressive form of creative speculation.

The explosive character of Marcuse's work in leftist circles is owed to his implicit rejection of the division of labor. Habermas by contrast is content to preserve structures of expertise and authority as long as technocrats and politicians are democratic in temperament. The concept of a new science is explosive because the Left, since Leninism infiltrated the western communist movement, has internalized elitist models of theory and practice. The separation of Marxian theory and practice since 1917 and the collapse of the revolutionary proletariat have made it doubly hard to destroy the leftist intellectual's elitist political role. Indeed, by inveighing against new science, Habermas has almost legitimated the transformation of Marxism into a form of sentimentally democratic Weberian sociology rooted in the assumption that there *must* be a division of labor and professionalism. Critical theory today is divided not merely between different styles of reading Marx but by the issue of the division of labor.

Marxism has contained its own left and right wings ever since Lukács and Korsch broke from the official Marxism of the Comintern in 1919. Initially, the Frankfurt school inherited the mantle of Lukács and Korsch without much difficulty; but in the intervening half century critical theory has been torn by the emergence of its own right wing. I characterize this wing as "Weberian." While the difference between Habermas and Marcuse might seem to outsiders as one of quantity and not quality, there are very explosive issues involved which take us back to the original conflict between Marxism and bourgeois social science. Now as before, the central issue is the struggle of reformism against radicalism, this time hinging on Habermas' reaction to Marcuse's critique of the division of labor.

Habermas' growing appeal can best be explained by the smoothness with which he reduces revolutionary concepts such as the *sameness* of manual and mental labor into concepts alien to Marxism. Habermas' erudition has enabled him to make Marxism acceptable to many pragmatists and bourgeois philosophers of science; yet his translation of orthodoxy—while it has had the salutary effect of diverting attention from "what Marx really said"—has expunged orthodoxy's basic radicalism. In other words, Habermas attempts the impossible in aiming at a balance between Marxism's revolutionary appeal and bourgeois social science's acquiescence in the given.

Marxists have found it nearly impossible to relinquish their self-conception as experts, albeit critical ones, in a world wherein they are objectively isolated. Marxism by maintaining epistemological barriers be-

tween science and philosophy necessarily cuts the ground from beneath its own critique of the division of labor. Habermas goes a long way towards making the Marxist philosophy of history a respectable philosophical alternative to an affirmative positivism; yet in the process he forgets that Marx's ultimate goal was the destruction of social differentiation such as that which exists between the philosopher and the scientist.

> Perhaps the most lasting negative mental effect of oppression is our near inability to discuss seriously the division of labor without either some retreat into utopia or the acceptance of its inevitable anomaly. Domination shrouds the fact of anomaly and mocks utopia as immature fantasy.[31]

V. Conclusion

The Marcuse-Habermas debate on science and technology turns on political considerations. Habermas is a reformist who does not believe that the 'mode of production' and its operative principle of technical rationality can change, but only the political and intellectual superstructure. My argument has been that Marcuse like Marx never separates 'base' and 'superstructure'; thus, Marcuse hopes to transform the ensemble of capitalist social relations: relations between man and machine, man and nature, man and man, man and *concepts*. His 'new science' is a form of emancipated intellectual labor, given life through the conquest of the mind's domination by positivist epistemology. Marcuse only broadens Marx's concept of 'labor' in remaining faithful to the young Marx's vision of the emancipation of the 'five senses' and unification of manual and mental labor under socialism.[32]

31. Alkis Kontos, "Domination: Metaphor and Political Reality," in *Domination,* Alkis Kontos, ed. (Toronto: University of Toronto Press, 1975), p. 220.

32. This essay has been improved significantly by my friends Christian Bay and Gad Horowitz of the University of Toronto. Bay helped strengthen the Habermas section and improved my prose style. He also urged me to rescue this paper from the dusty obscurity of the desk-drawer. Horowitz read the essay very carefully, using a sharp scalpel and enormous critical acumen. The argument for a new science emerged from long discussions with him during 1974 and 1975. Since ideas belong to no one, I cannot easily discern which of these ideas are "mine" and which "his." It does not matter.