The dialectic of reason and unreason in our time is epitomized in the social dynamic which sustains the scientific and technological progress through which the resources of nature are ever more artfully exploited. This triumph of human rationality derives its impetus from the uncontrolled interaction of processes that are rooted in irrational social behavior; the wasteful consumption of the advanced capitalist societies, the fearful military contest between capitalist and socialist blocs, the struggles within and among socialist societies concerning the correct road to the future, and the increasing pressure on Third-World nations and their populations to yield fully to economic development and ideological commitment. In the passions that prompt such behavior are forged the ineluctable chains which bind together technology and political domination at present.

Notes

3. Ibid., 176.
5. Horkheimer, Eclipse of Reason, chap. 1; and Max Horkheimer, "Zum Begriff der Vernunft," in Horkheimer and Adorno, Sociologica II.
6. Horkheimer and Adorno, Dialektik der Aufklärung, 96ff; a brief outline is given in Horkheimer, Eclipse of Reason.
8. Horkheimer, Eclipse of Reason, 108. In one of his essays, Marcuse cited the following passage from Fichte's Staatslehre (1813): "The real station, the honor and worth of the human being, and quite particularly of man in his morally natural existence, consists without doubt in his capacity as original progenitor to produce out of himself new men, new commanders of nature: beyond his earthly existence and for all eternity to establish new masters of nature." Quoted in "On Hedonism," in Negations: Essays in Critical Theory (Boston: Beacon Press, 1968), 186.
10. Ibid., 109.
13. Ibid., 94.

The Critical Theory developed by the members of the Frankfurt Institute of Social Research ("the Frankfurt school") has revised the humanist Marxist heritage in ways that directly address the wider emancipatory concerns of ecocentric theorists [i.e., the valuing (for their own sake) not just of individual living organisms, but also of ecological entities at different levels of aggregation]. In particular, Critical Theorists have laid down a direct challenge to the Marxist idea that "true freedom" lies beyond social necessity and labor. They have argued that the more we try to "master necessity" through the increasing application of instrumental reason to all spheres of life, the more we are to become beholden to the scientific and historical materialism of orthodox Marxism. In the case of the Frankfurt school, however, it was not through a critique of political economy but rather through a critique of culture, scientism, and instrumental reason that Marxist debates were entered. One of the enduring contributions of the first generation of Frankfurt school theorists (notably, Max Horkheimer, Theodor Adorno, and Herbert Marcuse) was to show that there are different levels and dimensions of domination and exploitation beyond the economic sphere and that the former are no less important than the latter. The most radical theoretical innovation concerning this broader understanding of domination came from the early Frankfurt school theorists' critical examination.

of the relationship between humanity and nature. This resulted in a fundamental challenge to the orthodox Marxist view concerning the progressive march of history, which had emphasized the liberatory potential of the increasing mastery of nature through the development of the productive forces. Far from welcoming these developments as marking the "ascent of man from the kingdom of necessity to the kingdom of freedom" (to borrow Engels’s phrase), Horkheimer, Adorno, and Marcuse saw them in essentially negative terms, as giving rise to the domination of both "outer" and "inner" nature.

These early Frankfurt school theorists regarded the rationalization process set in train by the Enlightenment as a "negative dialectics." This was reflected, on the one hand, in the apprehension and conversion of nonhuman nature into resources for production or objects of scientific inquiry (including animal experimentation) and, on the other hand, in the repression of humanity’s joyful and spontaneous instincts brought about through a repressive social division of labor and a repressive division of the human psyche. Hence their quest for a human "reconciliation" with nature. Instrumental or "purposive" rationality—that branch of human reason that is concerned with determining the most efficient means of realizing pre-given goals and which accordingly apprehends only the instrumental (i.e., use) value of phenomena—should not, they argued, become the exemplar of rationality for society. Human happiness would not come about simply by improving our techniques of social administration, by treating society and nature as subject to blind, immutable laws that could be manipulated by a technocratic elite.

The early Frankfurt school’s critique of instrumental rationality has been carried forward and extensively revised by Jürgen Habermas, who has sought to show, among other things, how political decision making has been increasingly reduced to pragmatic instrumentality, which serves the capitalist and bureaucratic system while "colonizing the life-world." According to Habermas, this "scientization of politics" has resulted in the lay public ceding ever greater areas of system-steering decision making to technocratic elites.

All of these themes have a significant bearing on the green critique of industrialism, modern technology, and bureaucracy, and the green commitment to grass-roots democracy. Yet Critical Theory has not had a major direct influence in shaping the theory and practice of the green movement in the 1980s, whether in West Germany or elsewhere. The ideas of Marcuse and Habermas did have a significant impact on the thinking of the New Left in the 1960s and early 1970s and ... the general "participatory" theme that characterized that era has remained an enduring thread in the emancipatory stream of ecopolitical thought. Yet this legacy is largely an indirect one. Of course, there are some emancipatory theorists who have drawn upon Habermas’s social and political theory in articulating and explaining some aspects of the green critique of advanced industrial society. However, this can be contrasted with the much greater general influence of post-Marxist green theorists such as Murray Bookchin, Theodore Roszak, and Rudolf Bahro and non-Marxist green theories such as bioregionalism, deep/transpersonal ecology, and ecofeminism—a comparison that further underscores the distance green theory has had to travel away from the basic corpus of Marxism and neo-Marxism in order to find a comfortable "theoretical home."

It is important to understand why Critical Theory has not had a greater direct impact on green political theory and practice given that two of its central problems—the triumph of instrumental reason and the domination of nature—might have served as useful theoretical starting points for the green critique of industrial society. This possibility was indeed a likely one when it is remembered that both the Frankfurt school and green theorists acknowledge the dwindling revolutionary potential of the working class (owing to its integration into the capitalist order); both are critical of totalitarianism, instrumental rationality, mass culture, and consumerism; and both have strong German connections. Why did these two currents of thought not come together?

There are many possible explanations as to why Critical Theory has not been more influential. One might note, for example, the early Frankfurt school’s pessimistic outlook (particularly that of Adorno and Horkheimer), its ambivalence toward nature romanticism (acquired in part from its critical inquiry into Nazism), its rarefied language, its distance from the imperfect world of day-to-day political struggles (Marcuse being an important exception here), and its increasing preoccupation with theory rather than praxis (despite its original project of uniting the two). Yet a more fundamental explanation lies in the direction in which Critical Theory has developed since the 1960s in the hands of Jürgen Habermas, who has, by and large, remained preoccupied with and allied to the fortunes of democratic socialism (represented by the Social Democratic party in West Germany) rather than the fledgling green movement and its parliamentary representatives. Of course, the green movement has not escaped Habermas’s attention. However, he has tended to approach the movement more as an indicator of the motivational and legitimacy problems in advanced capitalist societies rather than as the historic bearer of emancipatory ideas (this is to be contrasted with Marcuse, who embraced the activities of new social movements). Habermas has analyzed the emergence of new social movements and green concerns as a grass-roots "resistance to tendencies to colonize the life-world." With the exception of the women’s movement (which Habermas does consider to be emancipatory), these new social movements (e.g., ecology, antinuclear) are seen as essentially defensive in character. While acknowledging the ecological and bureaucratic problems identified by these movements, Habermas regards their proposals to develop counterinstitutions and "liberated areas" from within the life-world as essentially unrealistic. What is required, he has argued, are "technical and economic solutions that must, in turn, be planned globally.
and implemented by administrative means." Yet as Anthony Giddens has pointedly observed, if the pathologies of advanced industrialism are the result of the triumph of purposive rationality, how can the life-world be defended against the encroachments of bureaucratic and economic steering mechanisms without transforming those very mechanisms? In defending the revolutionary potential of new social movements, Murrey Bookchin has accused Habermas of intellectualizing new social movements, "to a point where they are simply incoherent, indeed, atavistic." According to Bookchin, Habermas has no sense of the potentiality of new social movements.

Yet Habermas's general aloofness from the green movement (most notably, its radical ecocentric stream) goes much deeper than this. It may be traced to Habermas's theoretical break with the "negative dialectics" of the early Frankfurt school theorists and with their utopian goal of a "reconciliation with nature." Habermas has argued that such a utopian goal is neither necessary nor desirable for human emancipation. Instead, he has welcomed the rationalization process set in train by the Enlightenment as a positive rather than negative development. This chapter will be primarily concerned to locate this theoretical break and outline the broad contours of the subsequent development of Habermas's social and political theory in order to identify what I take to be the major theoretical stumbling blocks in Habermas's oeuvre. This will help to explain, on the one hand, why Habermas regards the radical ecology movement as defensive and "neo-romantic" and, on the other hand, why ecocentric theorists would regard many of Habermas's theoretical categories as unnecessarily rigid and anthropocentric.

In contrast, a central theme of the early Frankfurt school theorists, namely, the hope for a reconciliation of the negative dialectics of enlightenment that would liberate both human and nonhuman nature, speaks directly to ecocentric concerns. While Adorno and Horkheimer were pessimistic as to the prospect of such a reconciliation ever occurring, Marcuse remained hopeful of the possibility that a "new science" might be developed, based on a more expressive and empathic relationship to the nonhuman world. This stands in stark contrast to Habermas's position—that science and technology can know nature only in instrumental terms since that is the only way in which it can be effective in terms of securing our survival as a species. Unlike Habermas, Marcuse believed that a qualitatively different society might produce a qualitatively different science and technology. Ultimately, however, Marcuse's notion of a "new science" remained vague and undeveloped and, in any event, was finally overshadowed—indeed contradicted—by his overriding concern for the emancipation of the human senses and the freeing up of the instinctual drives of the individual.... This required nothing short of the total abolition of necessary labor and the rational mastery of nature, a feat that could be achieved only by advanced technology and widespread automation.

The Legacy of Horkheimer, Adorno, and Marcuse

The contributions of Horkheimer and Adorno in the 1940s, and Marcuse in the 1950s and 1960s, contain a number of theoretical insights that foreshadowed the ecological critique of industrial society that was to develop from the late 1960s. Indeed, these insights might have provided a useful starting point for ecocentric theorists by providing a potential theoretical linkage between the domination of the human and nonhuman worlds. By drawing back from the preoccupation with class conflict as the "motor of history" and examining instead the conflict between humans and the rest of nature, Horkheimer and Adorno developed a critique that sought to transcend the socialist preoccupation with questions concerning the control and distribution of the fruits of the industrial order. In short, they replaced the critique of political economy with a critique of technological civilization. As Martin Jay has observed, they found a conflict whose origins predated capitalism and whose continuation (and probable intensification) appeared likely to survive the demise of capitalism. Domination was recognized as increasingly assuming a range of noneconomic guises, including the subjugation of women and cruelty to animals—matters that had been overlooked by most orthodox Marxists. The Frankfurt school also criticized Marxism for reifying nature as little more than raw material for exploitation, thereby foreshadowing aspects of the more recent ecocentric critique of Marxism. Horkheimer and Adorno argued that this stemmed from the uncritical way in which Marxism had inherited and perpetuated the paradoxes of the Enlightenment tradition—their central target. In this respect, Marxism was regarded as no different from liberal capitalism.

Horkheimer and Adorno's contribution was essentially conducted in the form of a philosophical critique of reason. Their goal was to rescue reason in such a way as to bring instrumental reason under the control of what they referred to as "objective" or "critical" reason. By the latter, Adorno and Horkheimer meant that synthetic faculty of mind that engages in critical reflection and goes beyond mere appearances to a deeper reality in order to reconcile the contradictions between reality and appearance. This was to be contrasted with "instrumental reason," that one-sided faculty of mind that structures the phenomenal world in a commonsensical, functional way and is concerned with efficient and effective adaptation, with means, not ends. The Frankfurt school theorists sought to defend reason from attacks on both sides, that is, from those who reacted against the rigidity of abstract rationalism (e.g., the romanticists) and from those who asserted the epistemological supremacy of the methods of the natural sciences (i.e., the positivists). The task of Critical Theory was to foster a mutual critique and reconciliation of these two forms of reason. In particular, reason was hailed by Marcuse as an essential "critical tribunal" that was the core of any progressive social theory; it lay at the root of Critical Theory's utopian impulse.
According to Horkheimer and Adorno, the Age of Enlightenment had ushered in the progressive replacement of tradition, myth, and superstition with reason, but it did so at a price. The high ideals of that period had become grossly distorted as a result of the ascendancy of instrumental reason over critical reason, a process that Max Weber decried as simultaneously leading to the rationalization and disenchantment of the world. The result was an inflated sense of human self-importance and a quest to dominate nature. Horkheimer and Adorno argued that this overemphasis on human self-importance and sovereignty led, paradoxically, to a loss of freedom. This arose, they maintained, because the instrumental manipulation of nature that flowed from the anthropocentric view that humans were the measure of all things and the masters of nature inevitably gave rise to the objectification and manipulation of humans.

Men pay for the increase in their power with alienation from that over which they exercise their power. Enlightenment behaves toward things as a dictator toward men. He knows them in so far as he can manipulate them. The man of science knows things in so far as he can make them. In this way their potentiality is turned to his own ends. In the metamorphosis the nature of things, as the substratum of domination, is revealed as always the same. This identity constitutes the unity of nature. The first generation of Critical Theorists also argued that the "rational" domination of outer nature necessitated a similar domination of inner nature by means of the repression and renunciation of the instinctual, aesthetic, and expressive aspects of our being. Indeed, this was seen to give rise to the paradox that lay at the heart of the growth of reason. The attempt to create a free society of autonomous individuals via the domination of outer nature was self-vitiating because this very process also distorted the subjective conditions necessary for the realization of that freedom. The more we seek material expansion in our quest for freedom from traditional and natural constraints, the more we become distorted psychologically as we deny those aspects of our own nature that are incompatible with instrumental reason. As Alford has observed, Horkheimer and Adorno condemned "not merely science but the Western intellectual tradition that understands reason as effective adaptation." Whereas Weber had described the process of rationalization as resulting in the disenchantment of the world, Horkheimer and Adorno described it as resulting in the "revenge of nature." This was reflected in the gradual undermining of our biological support system and, more significantly, in a new kind of depression of the human psyche. Such "psychic repression" was offered as an explanation for the modern individual's blind susceptibility, during times of social and economic crisis, to follow those demagogues (Hitler being the prime example) who offer the alienated individual a sense of meaning and belonging. From a Critical Theory perspective, then, just as the totalitarianism of Nazism was premised on the will to engineer social problems out of existence, the bureaucratic state and corporate capitalism may be seen as seeking to engineer ecological problems out of existence.

Adorno, Horkheimer, and Marcuse longed for "the resurrection of nature"—a new kind of mediation between society and the natural world. Whitebook has described this resurrection as referring to "the transformation of our relation to and knowledge of nature such that nature would once again be taken as purposeful, meaningful or as possessing value." This did not mean a nostalgic regress into primitive animism or pre-Enlightenment mythologies that sacrificed critical reason—the phenomenon of Nazism demonstrated the dangers of such a simplistic solution. Rather, their utopia required the integrated recapture of the past. This involved remembering rather than obliterating the experiences and ways of being of earlier human cultures and realizing that the modern rationalization process and the increasing differentiation of knowledge (particularly the factual, the normative, and the expressive) has been both a learning and unlearning process. What was needed, Adorno, Horkheimer, and Marcuse believed, was a new harmonization of our rational faculties and our sensuous nature. Yet Adorno and Horkheimer recognized that their utopia was very much against the grain of history. Unlike Marx, they stressed the radical discontinuity between the march of history and the liberated society they would like to see. As we saw, this sprang from the lack of a revolutionary subject that would be able to usher in the reconciliation of humanity with inner and outer nature. After all, how could there be a revolutionary subject when the individual in mass society had undergone such psychological distortion and was no longer autonomous? Accordingly, they were unable to develop a revolutionary praxis to further their somewhat vague utopian dream. However, they insisted that the utopian impulse that fueled that dream, although never fully realizable, must be maintained as providing an essential source of critical distance that guarded against any passive surrender to the status quo. Although Marcuse explored the same negative dialectics as Adorno and Horkheimer, he reached a more optimistic conclusion concerning the likelihood of a revolutionary praxis developing. In particular, he saw the counterculture and student movements of the 1960s and early 1970s as developing a more expressive relationship to nature that was cooperative, aesthetic—even erotic. Here, he suggested, were the seeds of a new movement that could expose the ideological functions of instrumental rationality and mount a far-reaching challenge to the "false" needs generated by modern consumer society that had dulled the individual's capacity for critical reflection. Marcuse saw aesthetic needs as subversive force because they enable things to be seen and appreciated in their own right. Indeed, he argued that the emancipation of the senses and the release of instinctual needs was a prerequisite to the liberation of nature (both internal and external).
In the case of the former, this meant the liberation of our primary impulses and aesthetic senses. In the case of the latter, it meant the overcoming of our insistent struggle with our environment and the recovery of the "life-enhancing forces in nature, the sensuous aesthetic qualities which are foreign to a life wasted in unending competitive performance."\textsuperscript{24}

Marcuse also advanced the provocative argument that this kind of "sensuous perception" might form the epistemological basis of a new science that would overcome the one-dimensionality of instrumental reason that he believed underpinned modern science. Under a new science, Marcuse envisaged that knowledge might become a source of pleasure rather than the means of extending human control. The natural world would be perceived and responded to in an open, more passive, and more receptive way and be guided by the object of study (rather than by human purposes). Such a new science might also reveal previously undisclosed aspects of nature that could inspire and guide human conduct.\textsuperscript{25} This was to be contrasted with modern "Galilean" science, which Marcuse saw as "the methodology of a pre-given historical reality within whose universe it moves"; it reflects an interest in experiencing, comprehending, and shaping "the world in terms of calculable, predictable relationships among exactly identifiable units. In this project, universal quantifiability is a prerequisite for the domination of nature."\textsuperscript{26}

Habermas has taken issue with Marcuse, claiming that it is logically impossible to imagine that a new science could be developed that would overcome the manipulative and domineering attitude toward nature characteristic of modern science.\textsuperscript{27} There are certainly passages in Marcuse's One-Dimensional Man that suggest that it is the scientific method itself that has ultimately led to the domination of humans and that therefore a change in the very method of scientific inquiry is necessary to usher in a liberated society.\textsuperscript{28} Against Habermas's interpretation, however, William Leiss has argued that these are isolated, inconsistent passages that run contrary to the main line of Marcuse's argument, which is that the problem is not with science or instrumental rationality per se but "with the repressive social institutions which exploit the achievements of that rationality to preserve unjust relationships."\textsuperscript{29}

Yet these inconsistencies in Marcuse's discussion of the relationship between science and liberation do not appear to be resolvable either way. Indeed, it is possible to discern a third position that lies somewhere between Habermas's and Leiss's interpretations (although it is closer to Leiss's): that the fault lies neither with science nor instrumental rationality per se nor repressive social institutions per se but rather with the instrumental and anthropocentric character of the modern worldview. In One-Dimensional Man, Marcuse was concerned to highlight the inextricable interrelationship between science and society. He conceded that pure as distinct from applied science "does not project particular practical goals nor particular forms of domination," but it does proceed in a certain universe of discourse and cannot transcend that discourse.\textsuperscript{30} According to Marcuse,

scientific rationality was in itself, in its very abstractness and purity, operational in as much as it developed under an instrumental horizon. ... This interpretation would tie the scientific project (method and theory), prior to all application and utilization, to a specific societal project, and would see the tie precisely in the inner form of scientific rationality, i.e., the functional character of its concepts.\textsuperscript{31}

It is clear that Marcuse regarded the scientific method as being dependent on a preestablished universe of ends, in which and for which it has developed.\textsuperscript{32} It follows, as he points out in Counterrevolution and Revolt, that:

A free society may well have a very different a priori and a very different object; the development of the scientific concepts may be grounded in an experience of nature as a totality of life to be protected and "cultivated," and technology would apply this science to the reconstruction of the environment of life.\textsuperscript{33}

Marcuse's point is a very general one: that a new or liberatory science can only be inaugurated by a liberatory society. It would be a "new" science because it would serve a new preestablished universe of ends, including a qualitatively new relationship between humans and the rest of nature. This third interpretation is much closer to Leiss's interpretation than Habermas's since it argues that we must reorder social relations before we reorder science if we wish to "resurrect" nature. Only then would we be able to cultivate a liberatory rather than a repressive mastery of nature.

Yet it is important to clarify what Marcuse meant by a "liberatory mastery of nature." As Alford has convincingly shown, Marcuse's new science appears as mere rhetoric when judged against the overall thrust of his writings.\textsuperscript{34} As we saw in the previous chapter, Marcuse's principal Marxist reference point was the Paris Manuscripts, which Marcuse saw as providing the philosophical grounding for the realization of the emancipation of the senses and the reconciliation of nature. Moreover, his particular Marx/Freud synthesis was concerned to overcome repressive dominance, that is, the repression of the pleasure principle (the gratification of the instincts) by the reality principle (the need to transform and modify nature in order to survive, which is reflected in the work ethic and the growth of instrumental reason). Marcuse saw the reality principle as being culturally specific to an economy of scarcity. In capitalist society, the forces of production had developed to the point where scarcity (which gave rise to the "reality principle") need no longer be a permanent feature of human civilization. That is, the technical and productive apparatus was seen to be capable of meeting basic necessities with minimum toil so that there was no longer any basis for the repression of the instincts via the dominance of the work ethic. The continuance of this ethic must be seen as "surplus repression," which Marcuse maintained was secured, inter alia, by the manipulation of "false" consumer needs.\textsuperscript{35} Marcuse ultimately wished to reap the full benefits promised by mainstream
science, namely, a world where humans would be spared the drudgery of labor and be free to experience “eros and peace.”

However, the necessary quid pro quo for the reassertion of the pleasure principle over the reality principle was that the nonhuman world would continue to be sacrificed in the name of human liberation. Marcuse shared Marx’s notion of two mutually exclusive realms of freedom and necessity and, like Marx, he believed that “true freedom” lay beyond the realm of labor. Accordingly, total automation, made possible by scientific and technological progress, was essential on the ground that necessary labor was regarded as inherently unfree and burdensome. It demanded that humans subordinate their desires and expressive instincts to the requirements of the "objective situation" (i.e., economic laws, the market, and the need to make a livelihood). Socialist stewardship under humanist eco-Marxism would usher in a "reconciliation with nature" of a kind that would see the total domestication or humanization of the nonhuman world. As Malinovitch has observed, “For Marcuse the concept of the ‘development of human potentiality for its own sake’ became the ultimate socialist value.” In Marcuse’s own words, the emancipation of the human senses under a humanistic socialism would enable

“the human appropriation of nature,” i.e., through the transformation of nature into an environment (medium) for the human being as “species being”; free to develop the specifically human faculties: the creative, aesthetic faculties.

Despite his intriguing discussion of the notion of a new, nondomining science, then, Marcuse’s major preoccupation with human self-expression, gratification, and the free play of the senses ultimately overshadowed his concern for the liberation of nonhuman nature. Any nonanthropocentric gloss that Marcuse may have placed on Marx’s Paris Manuscripts must be read down in this context. Nonetheless, Marcuse’s “ecocentric moments” (i.e., his discussion of a qualitatively different science and society that approach the nonhuman world as a partner rather than as an object of manipulation) serve as a useful foil to Habermas’s more limited conceptualization of the scientific project.

Notes


4. See, for example, Werner Holzberg, The German Greens: A Social and Political Profile (London: Verso, 1988), 8–9 and John Ely, Marxism and Green Politics in West Germany, Theorist Eleven, 1, no. 13 (1986): 27 and n. 11. It should be noted, however, that the themes of the early Frankfurt school theorists (Adorno, Horkheimer, and Marcuse) have had an important influence on the writings of Murray Bookchin, who has been an influential figure in the Green movement in North America. Bookchin was to insert the early Frankfurt school’s thesis concerning the domination of human and nonhuman nature (see chap. 7).


7. Marcuse saw the ecological and feminist movements in particular as the most promising political movements, and he foresaw the many of the insights of environmentalism. For example, in Counterrevolution and Revolt (London: Allen Lane, 1972), he argued for the elevation of the “female principle,” describing the women’s movement as a radical force that was undermining the sphere of aggressive needs, the performance principle, and the social institutions by which these are fostered (75).


10. Ibid., 35.


15. Ibid., 257 (see Adorno and Horkheimer, Dialectic of Enlightenment, 84 and 245–55). Friedrich Engels’s discussion of the subjugation of women in The Origin of the Family, Private Property and the State (London: Lawrence and Wishart, 1949) is, of course, an important exception.


17. Adorno and Horkheimer, Dialectic of Enlightenment, 9.
18. This theme has also been pursued by Eric Fromm in his Escape from Freedom (New York: Holt, Rinehart, and Winston, 1969).
22. Marcuse, One-Dimensional Man.
23. Marcuse, Counterrevolution and Revolt, 74.
24. Ibid., 60.
25. Ibid. Marcuse argued that instead of seeing nature as mere utility, "the emancipated senses, in conjunction with a natural science proceeding on their basis, would guide the 'human appropriation' of nature" (ibid).
26. Marcuse, One-Dimensional Man, 133–34.
28. For example, Marcuse has stated: "The principles of modern science were a priori structured in such a way that they could serve as conceptual instruments for a universe of self-propelling, productive control; theoretical operationalism came to correspond to practical operationalism. The scientific method [which] led to the ever-more-effective domination of nature thus came to provide the pure concepts as well as the instrumentality for the ever-more-effective domination of man by man through the domination of nature" (One-Dimensional Man, 130). And later: "The point which I am trying to make is that science, by virtue of its own method and concepts, has projected and promoted a universe in which the domination of nature has remained linked to the domination of man—a link which tends to be fatal to the universe as a whole" (ibid., 136).
30. Marcuse, One-Dimensional Man, 129.
31. Ibid., 129 and 131.
32. Ibid., 137.
33. Marcuse, Counterrevolution and Revolt, 61.
37. Marcuse, Counterrevolution and Revolt, 64.