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Technological Rationality: Marcuse and His Critics[1]*

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Technology reveals the active relation of man to nature, the immediate process of production of his life, and thereby also his social life-relationships and the cultural representations that arise out of them. (Marx, *Capital*)

One of the most influential notions in modern social theory is the idea that science and technology function as the twin foundations of human mastery over nature. In the context of the relation of man to nature, however, technology actually plays a somewhat different rôle than does science, because the former is far more directly connected with the realm of human wants and thus to the social conflicts arising out of them. This is what Marx means in referring to the 'immediate' process of production in which technology figures so prominently, namely the direct link between men's technical capacities and their ability to satisfy their desires which is a regular feature of human history and which is not bound to any specific level of scientific knowledge. Science, on the other hand, like similar advanced cultural formations (religion, art, philosophy, and so forth), is indirectly related to the daily struggle for existence: In technical language, these are all mediated by reflective thought to a far greater extent. Of course this by no means implies that they lack a social content altogether, but only that it is present in a highly abstract form and that by virtue of this reflective character they transcend to some extent the specific historical circumstances which gave them birth. Scientific rationality and technological rationality are fundamentally different aspects of human culture.[2]

The immediate relationship between technology and domination, forged by the struggle for the satisfaction of needs, marks all human technology with an intrinsic political character. 'Techniques' comprise not only tools but equally as importantly the organization and training of human labour: Lewis Mumford illustrated this point well in his argument that the first great machine in history consisted of the forced-labour gangs that built the Egyptian pyramids, together with the state administration which planned and supervised their work.[3] The purposeful organization and combination of

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productive techniques, directed either by public or private authorities, has been called 'technological rationality'. Depending upon the level of cultural development, it is normally linked with a specific type of scientific rationality, that is, with a more abstract understanding of nature's physical processes.

Nineteenth-century socialist thinkers emphasized the significance of technological development for the cause of human liberation, specifically with reference to the construction of an adequate material basis for satisfying needs through a minimum of labour. Few of them—least of all Marx and Engels—could be called technological determinists, however, since they also stressed their expectation that a complementary improvement in the exercise of rational judgement among the majority of the population would establish the proper conditions for the enjoyment of freedom. Marx called this the realization of the 'general intellect'. This expectation has so far been disappointed, and the development of a consciousness of freedom among the majority in the industrially-advanced societies has been blocked, while technological expertise has proceeded from success to success.

An analysis of the social and social-psychological grounds of false consciousness has been a major problem for the critical theory of society (Horkheimer, Adorno, Marcuse, and others), and the steady growth of technological rationality throughout the twentieth century was recognized by them as a crucial factor in this problem. But although brief comments on it may be found at many points in their writings, no systematic treatment of this concept appeared before Marcuse's exposition in chapter six of *One-Dimensional Man*, entitled 'From Negative to Positive Thinking: Technological Rationality and the Logic of Domination'. What he attempted to argue there was clearly stated: 'It is my purpose to demonstrate the *internal* instrumentalist character of [modern] scientific rationality by virtue of which it is *a priori* technology, and the *a priori* of a *specific* technology—namely, technology as form of social control and domination'.[4] Marcuse presents technological rationality as only one of the basic forms of 'one-dimensionality', but he repeatedly stresses its all-embracing character in advanced industrial society. Jeremy Shapiro, who has further developed this notion, has defined one-dimensionality as 'political domination masked as technical rationality'.[5]

This chapter elicited a storm of criticism. Rolf Ahlers and Hans-Dieter Bahr, for example, have found in it a final confirmation of Marcuse's attachment to the errors of Heideggerian philosophy.[6] Habermas, on the other hand, sees it as the revelation of the long-hidden motif of Romantic *Naturphilosophie* in his thought, the idea of a 'new' science and technology cleansed of the stain of domination.[7] Others have tried to document his deviation from the orthodoxy of Marx and Engels on this point.[8] In my

view all of these criticisms are more or less irrelevant because they focus on a few isolated quotations and fail to consider the main lines of Marcuse's argument. Far superior are the essays by Claus Offe and Joachim Bergmann which specifically deal with the concept of technological rationality. Offe details the obscurities that result from Marcuse's use of the terms 'industrial society' and 'technological society' and correctly demands a far more precise characterization of the actual social interests which determine the structure of advanced capitalist society. Bergmann contends that Marcuse's notion of technological rationality attempts unsuccessfully to subsume diverse mechanisms of social domination (economic rationalization in Max Weber's sense, the politics of mass democracy, and scientific-technological progress) under a single category; the frequent references to a shadowy 'apparatus' of control inhibit the empirical study of how these different mechanisms actually function at present.[9]

The deficiencies noted by Offe and Bergmann arise both out of Marcuse's general manner of exposition and also out of the specific faults of his argument in *One-Dimensional Man*. Like his original colleagues in the 'Frankfurt School', he tends to couch his thought in an epigrammatic style. Much reflection on complex issues is compressed into brief passages which, when examined in isolation, sometimes appear inconsistent; and the reasoning as a whole lacks smooth transitions from one idea to the next. Thus one can find many comments on technology and the domination of nature scattered throughout his publications over a period of more than thirty years, not all of which are harmonious. However, a careful study of them reveals a consistent approach to this problem which offers guidance for the interpretation of individual passages, especially those found in *One-Dimensional Man*. In the following pages I will try to present and evaluate the consistent features of Marcuse's thought on the subject of the present study.

The concept of technological rationality first appears prominently in an article written by Marcuse in 1941, entitled 'Some Social Implications of Modern Technology'. There it was contrasted with two other forms of reason, namely individual rationality and critical rationality. Individual rationality was according to Marcuse the hallmark of bourgeois society in its initial phases of development; new social forces demanded freedom for the individual to exercise his reason in all spheres of activity, material (economic) as well as intellectual. This struggle was carried out against the established social interests, so that individual rationality was at the same time critical rationality, opposition to outmoded social institutions and ideologies. The ideas of liberalism were built upon the premise that individuals were or could be autonomous, that is, persons whose thought and decisions were the result of critical self-reflection and self-interest.

The promises of a liberal society were thwarted. With the further development of capitalist society 'the process of commodity production undermined the economic basis on which individualistic rationality was built', and this rationality was 'transformed into technological rationality'.[10] In other words, the economic units of production continually expanded in size, until the laws of the free market were effectively abolished and small individual entrepreneurs lived at the mercy of the great corporations which direct the economy. This transformation in the sphere of production destroyed the material foundations of individualistic rationality; henceforth productive rationality was embodied in large organizations, and the individual had to adjust himself and conform to the dictates of the 'rationality of the apparatus'. But this organized or technological rationality offers the individual little scope for critical reflection:

> Individuals are stripped of their individuality, not by external compulsion, but by the very rationality under which they live. . . . The point is that today the apparatus to which the individual is to adjust and adapt himself is so rational that individual protest and liberation appear not only as hopeless but as utterly irrational. The system of life created by modern industry is one of the highest expediency, convenience and efficiency. Reason, once defined in these terms, becomes equivalent to an activity which perpetuates this world. Rational behavior becomes identical with a matter-of-factness which teaches reasonable submissiveness and thus guarantees getting along in the prevailing order.[11]

Yet there is no simple opposition or contradiction between critical and technological rationality. Both constantly change their content, partially in response to each other. The former seeks to preserve the substance of individual rationality—the idea of autonomous individuals who are capable of organizing their lives under the conditions of freedom—in a time when social changes have destroyed the earlier promises of liberal society. It attempts to identify those tendencies within technological rationality (for example, the democratization of functions) which might still establish a basis for individual autonomy and freedom under changed social circumstances. The emphasis throughout Marcuse's analysis here is on the restrictive social forms by which technological rationality is forced to serve the interests of domination rather than freedom: 'Technics hampers individual development only insofar as they [sic] are tied to a social apparatus which perpetuates scarcity, and this same apparatus has released forces which may shatter the special historical form in which technics is utilized'.[12] Marcuse points out that the anti-technological attitude is used as an ideology (for example in fascism) to disguise the powerful alliance between the advanced rational technologies of production and terroristic political domination. The fault lies not with technological rationality itself, but with the repressive

social institutions which exploit the achievements of that rationality to preserve unjust relationships among men. A sentence from the later work summarizes perfectly the theme of this article: 'In the social reality, despite all change, the domination of man by man is still the historical continuum that links pre-technological and technological Reason'.[13]

The internalization of mechanized work routines, patterns of consumption, and socially-dictated leisure activities are some of the principal means by which individuals surrender their critical faculties to the requirements of the production system. In their experienced needs and desires individuals reproduce the necessities of the institutions which oppress them. Heteronomy, the unreflective internalization of behavioural norms, impedes the possible formation of autonomous judgements among the majority, and thus

> the technology and technics applied in the economic process are more than ever before instruments of social and political control. The satisfaction of needs (material and intellectual) takes place through scientific organization of work, scientific management, and the scientific imposition of attitudes and behavior patterns which operate beyond and outside the work process and precondition the individuals in accord with the dominant social interests.[14]

The highly original insight found in both Horkheimer's and Marcuse's work is an insistence on a necessary connection between mastery of external nature and mastery of internal nature. The enormous social enterprise through which is undertaken the conquest of external nature by scientific and technological rationality demands a complementary control of internal nature, including the discipline of the work process and the expression of need and satisfaction. This insight prompted their continuing interest in a critical social psychology and especially in a radical interpretation of Freud's metapsychology of civilization.

In *Eros and Civilization* Marcuse outlined a theory of the relationship between the development of the ego and the conquest of external nature very similar to Horkheimer's.[15] But it is in one of his separate essays on Freud that he states most clearly his conception of the development of domination in civilization:

> As soon as civilized society establishes itself the repressive transformation of the instincts becomes the psychological basis of a *threefold domination*: first, domination over one's self, over one's own nature, over the sensual drives that want only pleasure and gratification; second, domination of the labor achieved by such disciplined and controlled individuals; and third, domination of outward nature, science, and technology.[16]

This multiple domination, by which the individual is subjected to requirements imposed upon him from without, is not the eternal opposite of freedom,

but rather is its presupposition. A 'threefold freedom'—moral, political, and intellectual—emerges from the work of domination. Having rationally mastered their own inclinations and having constructed the material basis for the satisfaction of needs, individuals may utilize the inheritance of civilization for the enjoyment of freedom.

The legacy of domination does not disappear of its own accord, however. One of the central themes in *Eros and Civilization* is an analysis of the process whereby domination is perpetuated under social conditions which contain the actual grounds for the realization of individual freedom. 'Surplus repression', representing the elements of domination which do not serve the interests of maintaining civilization, increases as the promise of liberation dawns. A decisive break with the 'continuum of domination', a change from quantitative to qualitative progress, becomes an essential task of revolution. *Soviet Marxism*, dating from the same period, is in part an attempt to explain why the first great socialist revolution was unable to accomplish this break. Judging Stalinism in much the same way as Isaac Deutscher, Marcuse emphasizes the superhuman effort that was required in order to transform a 'backward' society in the face of antagonism and mortal danger from without, as a means of explaining how the liberating message of Marxism became an ideology that justified oppression.

The theme of *Soviet Marxism* required Marcuse to deal once more with the function of technology in social change, and he did so in a way that is consistent with his earlier article on the social implications of modern technology. He maintains that it is the repressive use of technology 'which makes for its dehumanizing and destructive features: a restrictive social need determines technical progress'. From this viewpoint he concludes that 'the truly liberating effects of technology are not implied in technological progress *per se*; they presuppose social change, involving the basic economic institutions and relationships'.[17] But already in the new preface to this book written for the publication of the paperback edition in 1960, there is a different phrasing of the problem which foreshadows the treatment of it in *One-Dimensional Man*. In reply to criticisms Marcuse insisted that he wished to retain his 'emphasis on the all-embracing political character of the machine process in advanced industrial society'. This statement is curious, because it does not really characterize the argument of *Soviet Marxism* at all, but rather anticipates the theme of the later book which was undoubtedly in the early stages of preparation at that time.

The best critiques of *One-Dimensional Man* have pointed out that its major flaw lies in its use of the concepts of 'advanced industrial society' and 'technological society'. At various places Marcuse claims to be exploring the converging tendencies of highly-developed societies, both capitalist and

socialist; but the actual content of the book—its specific topics, examples, and illustrations—is drawn exclusively from intellectual trends in Western capitalist society. One could not even say that the analogous tendencies in socialist society had been discussed previously in *Soviet Marxism*, since the two works are not really complementary. The idea of a 'technological universe', a comprehensive and powerful mode of activity which 'shapes the entire universe of discourse and action, intellectual and material culture'—an idea that is forcefully outlined in the introduction to *One-Dimensional Man*—is never clarified sufficiently. This vague but menacing notion recalls both the language and the philosophical standpoint of Ellul's *The Technological Society* (a work that is never mentioned by Marcuse), despite the fact that one would not otherwise suspect any affinity between these two quite dissimilar thinkers.

The basic unclarity in the notion of a technological universe is carried over into the discussion of technological rationality in chapter six. There Marcuse attempts to unite two different propositions and in so doing creates the serious confusions that have aroused the ire of his critics. In a passage quoted earlier he describes the twofold intention of his approach: (1) to show that modern scientific rationality is inherently instrumentalist; (2) to demonstrate that this instrumentalist rationality is the impetus behind 'a *specific* technology—namely, technology as form of social control and domination'. Together they are 'the realization of a specific historical project—namely, the experience, transformation, and organization of nature as the mere stuff of domination'. In this endeavour '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'.[18] The difficulty in his exposition is his failure to show clearly the interrelationship between science as instrumentalist rationality and a technology that reinforces political domination.

In my view Marcuse succeeds in demonstrating his first point. Max Scheler earlier advanced a similar contention; Marcuse's discussion complements Scheler's and also adds many important ideas.[19] The treatment of this point constitutes the real substance of that chapter in *One-Dimensional Man*, and the second point is not really defended at all. Several objections to the latter may be raised: first, it does not follow from the initial argument; second, if taken literally it contradicts what Marcuse has said elsewhere many times; and third, as stated above it gives the erroneous impression that what is required is a new technology entirely different from the technology of domination.

The form of rationality that characterizes the modern natural sciences is instrumentalist in a specific sense, but this does not mean that it is inherently

bound to technology as an instrument of domination. What constitutes the historical connection between scientific rationality and the progress of domination over nature and men is a specific constellation of *social* forces. That same scientific rationality can become—in a different social setting—a force for the self-mastery of human nature, without altering its substance in any way. But Marcuse seems to demand a change in the form of scientific rationality itself when he says that as part of a qualitative turn in the direction of progress 'science would arrive at essentially different concepts of nature and establish essentially different facts'.[20] His failure to clearly explain this statement has led to the charge that despite specific disavowals on his part he is indeed calling for a revival of the Romantic philosophy of nature. Only in a later essay did he state in a straightforward manner his belief that

> there is no possibility of a reversal of scientific progress, no possibility of a return to the golden age of 'qualitative' science. . . . The transformation of science is imaginable only in a transformed environment; a new science would require a new climate wherein new experiments and projects would be suggested to the intellect by new social needs. . . . Instead of the further conquest of nature, the restoration of nature; instead of the moon, the earth; instead of the occupation of outer space, the creation of inner space; . . .[21]

The present science is a science whose tasks and problems are determined in a social setting of conflicts, wars, and perpetual ideological mobilization; the new science would be guided by the goals of peace, happiness, and the beautification of the environment in an ongoing process of rational discourse and interaction among scientists and non-scientists. The progress of its specific internal rationality would be affected only in so far as these new goals would produce different priorities in the allocation of resources for research and experimentation.

The existing connection between scientific rationality and political domination is to be found in the 'absolutization' of a particular scientific method as the only valid source of objective knowledge. This is a point made originally by Horkheimer, and I think that Marcuse's work as a whole is in accord with it.[22] The fact that this absolutization becomes a significant social phenomenon—for example, the *predominance* of a behavioural methodology in the social sciences out of which arises refined techniques for the control and manipulation of human actions—can be explained only with reference to a particular constellation of social interests, and *not* with reference to the instrumentalist character of scientific methodology, either in the natural sciences or derivatively in the social sciences. To be sure, such instrumentalism provides the *a priori* basis for better control of external and internal nature; but as Marcuse himself explained so concisely in his essay on Freud, such control is also the precondition of freedom under changed social conditions.

Certain inconsistencies in Marcuse's work simply cannot be eliminated. In my opinion the careless formulations in *One-Dimensional Man* contradict the consistent features of his thought as found both prior and subsequent to that book. Among later writings his important essay on Max Weber provides the best illustration: there he returns to the basic outlook of his first article on technology while providing deeper insight into the historical relationship between rationality and domination in modern society. He maintains that Weber identifies 'technical reason with bourgeois capitalist reason' and thus that technological rationality is at the same time also 'capitalist rationality'. Weber's concept of fate describes 'a society in which the law of domination appears as objective technological law'; to the extent to which the first phenomenon is not recognized in the second, the concept of technical reason becomes an ideological mask:

> ... *this* technical reason reproduces enslavement. Subordination to technology becomes subordination to domination as such; formal technical rationality turns into material political rationality (or is it the other way around, inasmuch as technical reason was from the beginning the control of 'free' labor by private enterprise?).[23]

From the outset technical reason was political reason, and vice versa; the first has always been limited and distorted in the interests of domination. Thus it has essentially different potentialities in relation to different social systems: 'Capitalism, no matter how mathematized and "scientific", remains the mathematized, technological *domination* of men; and socialism, no matter how scientific and technological, is the construction or demolition of domination'.[24] Technological rationality can aid the perpetuation of domination under socialism, but socialism retains the promise of destroying domination; capitalism remains inevitably bound to a structure of domination.

This article closes with the idea that within a different social framework technical reason 'can become the technique of liberation'. This point is reinforced in the strongest possible terms in *An Essay on Liberation*:

> Is it still necessary to state that not technology, not technique, not the machine are the engines of repression, but the presence, in them, of the masters who determine their number, their life span, their power, their place in life, and the need for them? Is it still necessary to repeat that science and technology are the great vehicles of liberation, and that it is only their use and restriction in the repressive society which makes them into vehicles of domination?[25]

Another essay written at about the same time notes that technological progress can contribute to a fateful continuity between capitalism and socialism unless deliberate steps are taken to counteract such development.

To break the link between technology and domination under socialism means not to repeal technological progress itself, but to 'reconstruct the technical apparatus in accordance with the needs of free men, guided by their own consciousness and sensibility, by their autonomy'.[26]

Moreover, Marcuse has recently returned to an idea first stated at the end of the new preface to *Soviet Marxism*—namely, that different cultural traditions in the non-Western world may aid the presently 'underdeveloped' nations in avoiding the repressive and destructive uses of advanced technologies and in constructing a modern technological capability that is firmly related to rational needs at every stage.[27] Certainly this is no more than a chance, one which is continually threatened by the intense military-economic and ideological pressures on the third world emanating from the 'developed' areas. Should such a programme succeed even in the slightest degree, however, there would arise the possibility of a counter-influence that might affect the ongoing efforts in the industrially-advanced societies to shatter the bonds between political domination and technological rationality.

The consistent features in Marcuse's thought on this subject may now be summarized as follows: (1) the continuum of domination in the social relations among men shapes the way in which technological rationality develops —and in part the latter determines the evolution of the former; (2) scientific and technological progress in themselves do not undermine the social foundations of domination—on the contrary, the 'technological veil' can serve to support them; (3) scientific and technological rationality constitute one of the essential preconditions for freedom, and in a liberated society they are among the indispensable requisites for the enjoyment of freedom. The apparent logical inconsistency between the second and third points is rather a *real historical contradiction.* There is an ongoing dialectic of rationality and irrationality in society which magnifies simultaneously the possibilities for intensified domination on the one hand, and for liberation on the other. The full force of that dialectic is not necessarily broken in the transition from capitalism to socialism; it must become the specific objective of individuals associated in the struggle for liberation to accomplish that rupture.

Marcuse's general conception of the mastery of nature functions as a concise resumé of the complex issues outlined in the preceding paragraph. The conflicting and partially contradictory elements in the mastery of nature are concealed in the usual formulations of that idea. But Marcuse makes a fundamental distinction which illuminates those contradictions:

> Pacification [of the struggle for existence] presupposes mastery of Nature, which is and remains the object opposed to the developing subject. But there are two kinds of mastery: a repressive and a liberating one. The latter involves the reduction of misery, violence, and cruelty. . . . All joy and all happiness derive from the ability

to transcend Nature—a transcendence in which the mastery of Nature is itself subordinated to liberation and pacification of existence.[28]

Liberation is equivalent to the non-repressive mastery of nature, i.e., a mastery that is guided by human needs that have been formulated by associated individuals in an atmosphere of rationality, freedom, and autonomy. Otherwise mastery of nature might—and does—serve to perpetuate and intensify domination and irrationality. What is essential is to articulate the specific objectives of mastery over nature in relation to human *freedom* rather than to human *power*. The conventional interpretation of this notion emphasizes the latter and neglects the former. For the pursuit of greater power over nature on the social plane, within the framework of repressive institutional structures, solidifies the existing relations of domination and weakens to a corresponding degree the ability of individuals to shape their destiny through autonomous interaction.

NOTES

1 This essay will be published subsequently as an appendix in my forthcoming book, *The Domination of Nature*, and appears here with the permission of the publishers, George Braziller, Inc.
2 For a discussion of this point see chapters five through seven of my *The Domination of Nature*.
3 Lewis Mumford, *The Myth of the Machine*, New York 1966, chapter nine.
4 Herbert Marcuse, *One-Dimensional Man*, Boston 1964, pp. 157–8 (author's italics).
5 Jeremy Shapiro, 'One Dimensionality: The Universal Semiotic of Technological Experience', in P. Breines, ed., *Critical Interruptions*, New York 1970, p. 181.
6 Rolf Ahlers, 'Is Technology intrinsically Repressive?' *Continuum*, 1970, 8, 111–22; Hans-Dieter Bahr, *Kritik der 'Politischen Technologie'*, Frankfurt 1970, pp. 56–64. Cf. Paul Piccone and Alexander Delfini, 'Marcuse's Heideggerian Marxism', *Telos*, Fall 1970, no. 6, 36–46.
7 Jürgen Habermas, *Toward a Rational Society*, J. Shapiro, trans., Boston 1970, pp. 81–90.
8 Peter Sidgwick, 'Natural Science and Human Theory', in R. Miliband and J. Saville, eds., *Socialist Register 1966*, New York 1966, 182 ff.; Edward Andrew, 'Work and Freedom in Marcuse and Marx', *Canadian Journal of Political Science*, 1970, 3, 241–56. See also my exchange with Andrew in *CJPS*, 1971, 4, 398–404.
9 Claus Offe, 'Technik und Eindimensionalität', and Joachim Bergmann, 'Technologische Rationalität und spätkapitalistische Ökonomie', in J. Habermas, ed., *Antworten auf Herbert Marcuse*, Frankfurt 1968, pp. 73–103.
10 Herbert Marcuse, 'Some Social Implications of Modern Technology', *Studies in Philosophy and Social Science*, 1941, 9, 416–17.
11 Ibid. p. 421.
12 Ibid. pp. 423, 429, 436.
13 Marcuse, *One-Dimensional Man*, p. 144.
14 Herbert Marcuse, Preface (1960) to the paperback edition of *Soviet Marxism*, New York 1961, p. xii.
15 Max Horkheimer, *Eclipse of Reason*, New York 1947; Marcuse, *Eros and Civilization*, second ed., Boston 1966, 109 ff.
16 Herbert Marcuse, 'Freedom and Freud's Theory of Instincts', in *Five Lectures*, J. Shapiro and S. Weber, trans., Boston 1970, p. 12 (author's italics).
17 Marcuse, *Soviet Marxism*, p. 241.
18 Marcuse, *One-Dimensional Man*, pp. 158, xvi, 166 (author's italics).
19 Cf. my essay, 'Max Scheler's Concept of *Herrschaftswissen*', *The Philosophical Forum*, N.S. 1971, 2, 316–31.

20 Marcuse, *One-Dimensional Man*, p. 167.
21 Herbert Marcuse, 'The Responsibility of Science', in L. Krieger and F. Stern, eds., *The Responsibility of Power*, New York 1967, pp. 442–3.
22 Max Horkheimer, 'Zum Problem der Wahrheit', in A. Schmidt, ed., *Kritische Theorie*, Frankfurt 1968, Vol. I, p. 259.
23 Herbert Marcuse, 'Industrialism and Capitalism in the Work of Max Weber', in *Negations*, Boston 1968, pp. 206, 214, 222–3 (author's italics.)
24 Ibid. p. 215 (author's italics).
25 Herbert Marcuse, *An Essay on Liberation*, Boston 1969, p. 12.
26 Herbert Marcuse, 'Re-examination of the Concept of Revolution', in *Marx and Contemporary Scientific Thought*, The Hague 1969, p. 481.
27 Marcuse, *Soviet Marxism*, p. xvi; 'Political Preface 1966' to *Eros and Civilization*, pp. xvii–xx; 'The Obsolescence of Marxism?' in N. Lobkowicz, ed., *Marx and the Western World*, South Bend (Ind.) 1967, p. 415.
28 Marcuse, *One-Dimensional Man*, pp. 236–7.