

## NUCLEAR TECHNOLOGY AS IDEOLOGY

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The present situation is characterized above all by the confrontation of two societies based on the domination of nature through scientific-technical apparatus. Despite important internal differences, authoritarian Communism and democratic Capitalism face each other divided by their common origin in Western humanism, which claimed to provide populations with freedom from scarcity and security (freedom from fear) in order to allow autonomous judgment at individual and/or social levels.<sup>1</sup> Due to the present undermining of this goal by developments which reach a representative apex in nuclear weapons, it is necessary to rethink the institutional bases of contemporary civilization.

In response to Stalinism, Fascism and mass society, the critical theory of the Frankfurt School developed a critique of civilization founded on the domination of nature. In questioning modern society as a whole it rejected the dichotomy of nature and freedom (technology and communication) upon which the domination of nature is based. The fate of this attempt, and the retreat from its most profound and radical insights, is indicative of the failure of thought in our time. In opposition to this retreat, we suggest that nuclear weapons demonstrate the inseparability of communicative and technological dimensions of human action. In the present essay, we explore the interdependence of the ideological function of the mass media and the ideological context of nuclear technology in order to clear the ground for a regeneration and extension of Critical Theory through connecting it to this significant practical movement of

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our time. Concern with civilization has taken on a practical dimension. Nuclear disarmament is the practical index for thinking the prerequisites of civilization anew.

Critical Theory began by combining commitment to theoretical critique with solidarity in practical struggles. Only the mutual clarification of intellectual partisanship and the contemporary issues raised by praxis could unify practical reason with an historical agent. In its Marxist beginnings the proletariat was designated as the universal class which could end human exploitation and bring about a society of freedom and justice. Since the outcome of this project could not be known in advance, Critical Theory is an existential judgment with a historical dimension rather than a prediction, a logical or empirical truth.<sup>2</sup> However, the internal development of Critical Theory made the link to an emancipatory agent increasingly tenuous. Reproduction of psychic domination within the proletariat as well as the pervasion of the entire society by scientific-technical ideology increasingly isolated the intellectual task from the possibility of its practical realization. Rather than abandon social critique, or accept its bifurcation into bureaucratized opposition and a mythology of proletarian uprising, Critical Theory accepted the wager of isolation in order to protect the project of emancipation from compromise with the administered world. Such an encircled camp must of course be centrally concerned with its own possibility and justification. While specific critiques were forthcoming, they tended to turn on the pervasion of society and thought by instrumental rationality such that the ethical and political categories upon which social critique rests are withdrawn from the public discourse of the populace. Confined to the ideology of system-maintenance, public and intellectual discourse becomes incapable of formulating the categories of a qualitatively different society. The project of critique was displaced to a more fundamental task: Uncovering the prerequisites of civilization itself and their entanglement with systematic structures of domination. Thus scientific-technical society brings the civilizing project to a radical crisis such that its own possibility is questionable. *Dialectic of Enlightenment* (1946) by Max Horkheimer and Theodor Adorno traces the twin figures of the origin of scientific-technical society in the domination of nature undertaken by the Renaissance and the project of enlightenment in Western civilization which originated with the Greeks. This theme was renewed by Herbert Marcuse in *One-Dimensional Man* (1964). Humanism, the proudest product of the West, seems to have been undermined by its own success. Self-destruction requires remembrance for recovery. The critical theory of society became a critique of civilization.

The most recent work in Critical Theory has tended to retreat from the radical questions posed by *Dialectic of Enlightenment* and to accept the

fundamental categories of the modern project in dominating nature. Jurgen Habermas has pointed out that Marcuse's account of technological rationality implies that a free and just society would require a qualitatively new science and technology. If science and technology secrete ideological closure, enlightenment requires their redirection and reconceptualization. Against this Habermas argues that it is not science and technology *themselves*, but their ideological utilization in communicative interaction, that constitutes a barrier to emancipation.

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 oriented to possible technical control.

The alternative to existing technology, the project of nature as opposing partner instead of object, refers to an alternative structure of action: to symbolic interaction in distinction to purposive-rational action.<sup>3</sup>

If one retreats from the critique of civilization and accepts the characteristic features of the modern project, the ideological function of science and technology is divorced from its inherent conceptual structure and displaced to the communicative framework in which it is a distorting factor. The critical task is then to show how this ideological function can be limited externally by resuscitating and justifying communicative interaction. The critique of civilization, on the other hand, situated science within the context of the origin and development of Western reason, and saw its ideological function as inherent to the conceptual framework that it projects. This ideological function can change historically due to external factors but the fact that it is ideological and the internal structure of the ideology remain constant. In other words, objectivism can function differently in different historical periods, but it remains a deeply rooted and yet partial account of reason. However, it is difficult to see how such a wide-ranging critique can be brought to practical efficacy. Thus, we are not urging an uncritical return to the 'dialectic of enlightenment' as a sufficient critique of nuclear weapons, but rather that this is a better starting-point for a contemporary critical theory. The wager of Critical Theory has now been played both ways: as a reflection on the unity of emancipation and domination in Western reason and as a dualism which seeks to restrict domination to nature outside the interhuman sphere.

The perspective of the distortion of communicative interaction motivates important contributions to the critique of Cold War ideology

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through its focus on the interaction of the military-industrial state and the media in the public sphere. In modern society, the systems of communication media which facilitate replication, storage and processing of information constitute a powerful means for the control and utilization of the socially available pool of meanings. For the question of nuclear weapons, which is remote from the experience of most individuals, the mass media are the primary source of information. In the West, public opinion is formed *through* the media, in interaction with state and legitimate institutions, on the one hand, and oppositional groups on the other. In the East, state and media are tightly compacted, forcing oppositional groups to find other means of expression and severely limiting their development. A critical theory of contemporary society which attempts to discover and extend political alternatives must criticize the influence of the dominant media in forming opinion and also contribute to the formation of an alternative public sphere in which oppositional analyses and actions are brought into public debate.<sup>4</sup>

To follow Stuart Hall's analysis: the ideological work of the media operates not through the imposition of a homogeneous world-view, but through setting the parameters of a legitimate diversity of opinion.<sup>5</sup> The classifications, distinctions, and weightings of opinion which the media make are presented as being reasonable, natural, and common-sensical. Through application of the professional values of balance, objectivity and so forth, the truth is always found to lie 'somewhere in the middle' of a structured plurality of opinion. Hall suggests that the underlying ideological value, or 'signified', of political coverage is 'parliamentarism', whereby issues are defined by, and presented through, the mainstream political parties. A similar value operates in the nuclear weapons debate. It is found not only in parliamentarism, but in the two-valued logic which assigns positions as either supporting the 'free world' or 'Soviet communism'. The two opposed superpowers define the limits of political alternatives. Cold-Warism is the global correlate of parliamentarism at the national level, but the logic of operation of each of these values is quite distinct. The Cold War opposition is an oppositional force-field in a strict sense: no in-between positions are allowed. The ideological work of the media, the success of which is not automatically assured, is to ensure that positions gravitate to one or other polarity. Balance is achieved only in the binary sense: one *or* the other. Unlike parliamentarism, which signifies the intent of underlying consensus, Cold-War ideology signifies underlying antagonism on the international level. The legitimacy of opinion is bifurcated according to the origin of the message. It is between these two well-entrenched polarities that the disarmament movement is attempting to insert itself, yet it perpetually faces dissolution by them.

Hall correctly stresses that the media are a site of struggle between contending positions and interests, and that this struggle is by no means neutrally reflected. This is becoming increasingly apparent in the field of arms control and foreign policy, as dissent from official alliance policies extends into ruling elites within and among nations (including some Eastern European nations). But as concern about nuclear weapons becomes 'respectable', attention is being deflected from the diversity of concerns and structures of the grass roots disarmament movement. In the course of ideological selection, the political analyses of anti-nuclear groups are reduced to 'single issue' statements and isolated observations attributed to a homogeneous entity. These 'inputs' may enter the framework of debate, but have lost the context whereby they are attempting to formulate a critique of the nuclear age *tout court*. The disarmament movement's strivings for a 'third way' in geopolitical relations is assimilated to a Cold War binarism. It is questions of non-alignment and neutralism which pose the greatest threat to the existing order of things, particularly in countries such as Canada, or in Europe, and it is here where much of the ideological work of the media takes place. Thus the disarmament movement is criticized for 'unilateralism' or for unintentionally operating in Soviet interests, and breaking down the cohesiveness and bargaining position of the NATO alliance. The external threat is used to shore up the illusion of an internal consensus. This 'for us or against us' option defined by Cold War-ism is the major contemporary ideological use of binary logic.<sup>6</sup>

A theory of the distortion of communicative interaction can explain the ideological function of mass media as sketched above. But in order to criticize the *weapons themselves*, and the conjunction of socio-historical forces crystallized in them, it is necessary to recognize that technological accomplishments are simultaneously formations of communicative possibilities. Nuclear technology has an inherent ideological function which, though it is extended and exacerbated in the mass media, is not confined to that realm. By their very existence nuclear weapons tend to close political options – even without being launched. Destruction of civilization as a real possibility testifies to the inseparability of message from receiver: the Other as enemy with the technique of destruction.<sup>7</sup> Word as club, club as word. It is not a question of opposing communication to technology but of the exterminist configuration which informs the *means* of social communication. Now that there is no outside to human action, the social dimension of technology can be seen in its materialized form. Nuclear weapons require a rethinking of the fear of otherness which leads technology to destruction. The romance of reason and power is at the root of our civilization.

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Nuclear weapons are both information processing and instrumental systems which integrate communicative and technological dimensions in a spiralling race to self-destruction. The fear of otherness motivates the search for technical perfection of weaponry; the desire to perfect technique motivates the portrayal of the other as an "evil empire." In the end, the perfection of technique in weaponry short-circuits the desire for security: Every technical innovation by one side to 'improve' deterrence leads to a response by the other, increasing the destructive threat and destabilizing existing relationships. The United States historically leads in this technological battle, through which it communicates its 'resolve'. Under the guise of defusing the nuclear threat by 'limiting' it through technically precise means of 'escalation dominance', the chances of escalating conflict are increasing. As the technology of empire proceeds apace, reaction time is minimized. Intercontinental nuclear technology establishes instant communication – unifying trigger, launch and target in the global village divided by Cold War. The Star Wars research program is an implicit recognition of the failure of deterrence as a strategy and a legitimating ideology – a failure which the proposed 'solution' threatens to make absolute. Star Wars is a vivid example of nuclear technology as ideology, of a technical solution obscuring a practical issue, *à la* Habermas. Yet there is also a further level at which nuclear systems such as Star Wars operate ideologically to obscure the relations of global domination which nuclear weapons both depend upon and enforce. Nuclear technology itself has practical origins; it cannot be simply constrained communicatively 'always after' the technology is posited as a fact. Star Wars represents the meeting point of these two conceptions of technology as ideology: the false promise of technological liberation from the threat of annihilation posed by imperial nuclear systems. Whether the Star Wars proposal is technically feasible is not at issue here; the more technically feasible it is, the more will the opposing empires be consolidated as antagonistic high technology systems. Nuclear technology appears as an ideological hall of mirrors: effective escape hidden by redundant false alternatives.

In order to investigate the ideological function of nuclear weapons themselves it is necessary to recognize that nuclear weapons are *already* 'in use'; their deployment accelerates geopolitical division and brings to the surface the extent to which we are, and wish to remain, within the American orbit. The theory of deterrence notwithstanding, there are no 'peaceful' uses for nuclear weapons. The weapons can only have one purpose: coercion, destruction and, ultimately, self-destruction. The 'use' of nuclear weapons is the consolidation of world-empires and the maintenance of a state of fear in the internal population which closes political alternatives under the rationale of 'security'. Consider the case of

someone with a gun who walks into a store and demands money. He may get away. The gun may never be fired, but it has been used. The threat of firing is enough to induce people to act in ways in which they would normally not act. A gun is an instrument of coercion even if it is not fired. It is the same with nuclear weapons: very few people really want to see them fired, but while still in their silos, they affect the current configuration of world politics. The gun is now at our heads. The population of the world is being held to ransom by the nuclear states. Our actions, expectations, and fears are altered and induced by their weaponry. They confirm the present division of the world and pressure us to limit our politics to acceptance of this division. External aggression and internal uniformity is the price of the weapons of Cold War.

From this perspective, it is important to analyse disarmament initiatives to see to what extent they go beyond 'negotiation between empires' and tend to advance local, regional and national autonomy. The international 'bloc' of non-aligned nations is significant in this respect. Disarmament ultimately requires dismantling NATO and the Warsaw Pact. There are several proposals and discussions at the present time which deserve consideration as short term objectives: 'No First Use,' Mutual Freeze,' and various Uni- or Multilateral initiatives. Without extensive analysis of the strategic implications of these proposals (which is crucial to a complete evaluation), the concept of empire as utilized by Harold Innis allows a basic observation pertinent to their assessment.<sup>8</sup> The control of some purportedly independent states by others has in the present age become a division of the world into two imperial 'spheres of influence.' Empire, which inherently expands into world-domination, has come upon its internal limit with the simplification of its 'other' to a single opposing empire. Cold War binarism is the *telos* of empire, which requires an external other, and materializes in nuclear weapons. This external other rebounds within opposing empires to encourage a repressive image of social consensus which assimilates criticism to subversion. Almost all initiatives presently being considered are based on negotiations between the existing superpowers, representing their 'spheres of influence.' Multilateral disarmament and the mutual Freeze clearly rest on the US and the USSR being able to agree on the necessity to reduce arms stockpiles. While such initiatives should be encouraged and pressured for, they remain within the orbit of the present distribution of imperial power. Trudeau's Strategy of Suffocation advocated at the UN in 1978, and his peace initiative of November 1983, are of this type. This was recognized in the Liberal Government's acceptance of Cruise testing. In other words, arms control initiatives do not question imperial division as such, but merely attempt to contain nuclear weapons within a margin of safety.

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The disarmament movement is a crucial factor in the present crisis of civilization. The existence of nuclear weapons on 'both sides,' caught in an escalating spiral, tends to escape Cold War ideology. It doesn't matter who pushes the button first. In order to develop a Third Way, the disarmament movement must, despite important qualifications, see *similarities* in both sides. The account of the reduction of politics to administration in Critical Theory provides a basis for comprehending a totalitarian closure of political options in both empires.<sup>9</sup> Internal repression in the East is further facilitated by the interpenetration of state and media institutions which influence more comprehensively than in the West the specific knowledge available to the population about the nuclear issue. However, the term 'totalitarianism' does not necessarily imply police and military repression, but rather specifies a closure of discourse about political alternatives. Without claiming a complete convergence of interests, or suppressing the socio-historical foundations of their respective systems, both the US and the USSR are primarily concerned with the maintenance and extension of imperial power.<sup>10</sup> Increasingly, the communist and liberal-democratic legitimations of their systems are becoming merely rhetorical devices. The secrecy and elite decision-making employed in nuclear allocation and development exacerbate this tendency. While embarking upon a massive increase in defence spending, the Reagan administration has seized upon arms control as a form of symbolic 'peace politics,' emphasizing rhetoric and procedures over substance. The ease with which these developments appear to be accepted, or at least not effectively resisted, in the greatest democracy on earth, suggests that nuclear technology and Cold War ideology operate powerfully in favour of totalitarian closure.

These insights take us beyond the Cold War version of the nuclear era, which focusses only on *external* factors. The goal of military technology was supposed to be security for the communist or liberal-democratic versions of Western humanism. But the development of imperial communications systems and destructive technology has eliminated the goal it was to serve.<sup>11</sup> Extension of imperial power in the post-War period has meant the denigration of the ends to which power was to be applied in both communist and democratic-capitalist political thought. Once power is separated from moral-political justification, legitimate discourse and criticism is confined within the parameters of existing institutions. In this sense, both East and West exhibit totalitarian tendencies which confine questions of the good society to choices within the imperial division of the world. These tendencies are exacerbated by the unprecedented destructive potential of nuclear armaments: instant communication through mutual annihilation.

In an age of nuclear empires in collision, it is essential to forge and protect political alternatives and alignments that take us beyond the Cold War. In Canada, concern with security has a great deal more to do with forging alliances with other 'peripheral' states, especially in Eastern Europe and the Pacific nations (and also with resistance to the extension of American imperial claims in central America), than with participation in a policy of nuclear confrontation designed by the U.S. and rubber-stamped by NATO. We have argued that public discussion of disarmament, due to the ideological functions of both the mass media and nuclear technology itself, has tended to confine legitimate debate within the parameters of the Cold War. Characterizing both sides as expansionary empires with totalitarian tendencies begins to reformulate these parameters, and to open a new agenda for disarmament perspectives in Canada. Indeed, we will have to rethink the foundations of our own contemporary society, in order to begin to disengage from traditional acceptance of our peripheral status within the imperial division of the world. With the testing of the Cruise missile, and the extensive implications for Canada of the 'Star Wars' proposal to militarize outer space, we have come to a crucial point in our international alignment. Only once, since the Second World War – in the Bomarc controversy in 1963 – have we in Canada had the chance to rethink the basis of our acceptance of the current world division.

Understanding the roots of the Cold War as a collision of empires with totalitarian structures and tendencies transforms the category of 'fear' within which potential conflict is perceived. Exploding the ideological form of 'fear of the enemy,' it becomes a less differentiated 'fear of annihilation' as such. Even without discovering forces, conjunctures and strategies, fear of nuclear extinction due to the unprecedented conflict of world empires undermines the rationale behind nuclear weaponry. But while this fear is an entry into thinking beyond the Cold War and exploding the arms control perspective, it can itself be debilitating and encourage passivity. Fear must cease to dominate our actions if we are to create an alternative, and not merely bewail the present state of the world. The irony of our situation is that we must patiently prepare the future even while we know there may not be one. For this, laughter may be more important than fear. Even 'fear of annihilation' cannot be a major organizing principle for a genuine disarmament movement, since it is fear that constructs the 'Other' on which contemporary Cold War binarism depends. In concrete terms, this requires a re-evaluation of the *internal* pressures for nuclear deployment – a reflection on self rather than hatred of other. In both the US and the USSR there are institutional forces which flourish from militarism. Internal contradictions within each power – unemployment and draft refusal in the US; dissidents, a de-legitimized

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state, and paucity of consumer goods in the USSR – must be brought into the nuclear agenda showing how the imperial adventure demands resources from the domestic population.

The critique of civilization has become a practical issue. In public discussion of nuclear weaponry, the ideological function of the public sphere in reproducing Cold War binarism and the illusion of internal cohesion becomes evident. However, nuclear technology also functions ideologically outside the realm of mass media; moreover, this ideology is *inherent in* nuclear weapons, due to the socio-historical factors which are crystallized in them. Technology as ideology does not merely *distort* communication but *establishes* social interaction in an exterminist framework. Instant annihilation is perfect communication – nuclear technology is the unambiguous message of a divided world. Technology is the means whereby the complex of human purposes are constituted in social organization.<sup>12</sup> Dualistic separation of technology from communication consists in acceptance of the nature/society division fundamental to the modern project. It is precisely this division that has become untenable as the consequences of the domination of nature are unravelled with increasing ferocity.<sup>13</sup> In the name of freedom from scarcity and fear (security), Cold War technology is increasing the internal and external repressive apparatus of states and empires. The disarmament movement represents a chance to renew and extend the critique of civilization, by connecting it to a significant practical movement. The “nearest practical ends” which for Horkheimer and Adorno were the “most distant goal” have become again the nearest due to the failure to interrupt the logic of domination.<sup>14</sup> The extension of Critical Theory must bring these practical ends to theoretical clarity, a task which is not attempted here but whose starting-point has been formulated.

Marx turned to the proletariat for neither sentimental nor empirical reasons. It was the locus of a central contradiction in capitalist society – those who *create* the wealth in commodities of political economy but do not *enjoy* this wealth. The proletariat was designated a universal class because this contradiction expresses the essence of capitalism and also the possibility of transformation. Consequently, it unified short-and long-term goals that were later bifurcated into reform or revolution. We can distinguish ethical, economic and political aspects of this contradiction: loss of autonomy in the workplace, poverty in wealth, and the lack of bourgeois rights of association. The pervasion of the whole of society by a logic of domination based on scientific-technical rationality eclipsed the *contradictory* character of the proletariat. Its failure to be a universal class consists in its reduction to a less advantaged position within the hierarchy of domination. The emancipatory potential of the proletariat waned with the pervasion of society by an ideology of

administration based in scientific-technical domination of nature. If the project of emancipation is to be renewed, the domination of nature must be radically questioned. It is not merely a question of the 'use' the which technology is put. Technologies *are* objectified social relations; for a free society we must design new tools.

Nuclear communication systems have no other use than the consolidation of totalitarian states and empires and the extinction of civilization. We can look at the three aspects of the universal class in the light of the disarmament movement. Ethical: empire versus national and regional autonomy. Economic: the massive proportion of the world's resources that go to militarism versus development based on human needs. Political: the increasingly secretive and repressive character of the 'national security state' – of which the Canadian government's new security measures are a surface manifestation – versus the democratic and participatory 'networking' structures of the disarmament movement.<sup>15</sup> Again, there is a possibility of unifying short and long-term goals, of situating arms control (reform) within a disarmament movement (revolution) through the critique of empire. The contradiction within contemporary civilization is most fully expressed in the conflict between this movement and its opponents. The possibility of civilized life is at issue. And if civilization is essential to humanity, the essence and meaning of humanity hangs in the balance. The universal contradiction is both global and lodged in the recesses of each human being: destruction and creation, barbarism and civilization are interlocked in the struggle of our time over freedom from scarcity and fear. If we cannot break with domination now, it will break us.

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#### NOTES

1. See Ian H. Angus, "Reflections on Technology and Humanism," *Queen's Quarterly* (Winter, 1984).
2. Max Horkheimer, "Traditional and Critical Theory," in *Critical Theory* (New York: Herder and Herder, 1972), p. 227.
3. Jurgen Habermas, "Science and Technology as 'Ideology'," in *Toward a Rational Society*, trans. Jeremy J. Shapiro (Boston: Beacon Press, 1970), p. 88.
4. We have pursued this analysis in an initial fashion in Ian H. Angus and Peter G. Cook, "The Media, Cold War and the Disarmament Movement: Reflections on the Canadian Situation," *Project Ploughshares Working Papers*, September, 1984.

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5. Stuart Hall, "Culture, the Media and the 'Ideological Effect'," in James Curran, et al. (eds.) *Mass Communication and Society* (London: Edward Arndold, 1977): 315-348.
6. An important connection should be made here to the pervasion of everyday language by computer-derived jargon: judgment is reduced to binary opposition, knowledge to information, discussion to feedback, analysis to problem and solution. See, for example, Joseph Weizenbaum, *Computer Power and Human Reason* (San Francisco: W.H. Freeman, 1976), and the review by Ian H. Angus in the *Canadian Journal of Political and Social Theory*, Vol. 3, No. 1 (Winter. 1979).
7. Max Horkheimer and Theodor Adorno, *Dialectic of Enlightenment*, trans. John Cumming (New York: Seabury Press, 1972), pp. 15-17.
8. The concern with empire is a fundamental theme in Canadian thought to which Charles Cochrane, Harold Innis and George Grant make significant contributions. In this case, it adds the international dimension to discussion of 'technology as ideology' which is absent from Critical Theory and is essential to a critique of nuclear weapons.
9. For the West, especially North America, see Herbert Marcuse, *One Dimensional Man* (Boston: Beacon Press, 1964). For the Soviet Union, see Max Horkheimer, "The Authoritarian State," in Andrew Arato and Eike Gebhardt (eds.), *The Essential Frankfurt School Reader* (New York: Urizen Books, 1978).
10. An important qualification is that the U.S. continues to retain technological and economic superiority, which is reflected in its military forces. Moreover, the lessening of American ideological and military hegemony since the 1960s suggests that the nuclear option may be utilized in a panic attempt to regain control.
11. Innis remarked in "Political Economy in the Modern State" that: "The growth of nationalism and the enormous extension of power in the modern state which has overwhelmed the social sciences have meant that *power is regarded as an end rather than a means*, and that the checks to centralization of power which strengthened the position of the individual have declined in importance." Harold Innis, *Political Economy in the Modern State* (Toronto: the Ryerson Press, 1946), p. 136.
12. This theoretical position is developed in more detail in Ian H. Angus, *Technique and Enlightenment: Limits of Instrumental Reason* (Washington, D.C.: Centre for Advanced Research in Phenomenology and University Press of America, 1984).
13. Parallel to the present argument, Joel Whitebook has pointed out that Habermas' conceptualizations are inadequate to formulate what is at issue in the ecological crisis. "The Problem of Nature in Habermas," *Telos* No. 40 (Summer, 1979).
14. *Dialectic of Enlightenment*, p. 42.
15. See Marcus G. Raskin, *The Politics of National Security* (New Brunswick, N.J.: Transaction Books, 1979); Robert J. Lifton and Richard Falk, *Indefensible Weapons: The Political and Psychological Case Against Nuclearism* (New York: Basic Books, 1982).