Canada's Three Mute Technological Critics

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In Martin Heidegger's 1953 lecture "The Question Concerning Technology" (1977), and Herbert Marcuse's 1941 article "Some Social Implications of Modern Technology" (1998) one finds expressions of philosophical critiques of technology that emphasize the intimate relationship between technology and everyday human practice. Around the same time that Heidegger and Marcuse were forming their groundbreaking perspectives on modern technological civilization, three pioneering Canadian technology theorists, Harold Innis, Marshall McLuhan and George Grant were also developing critical practice-based understandings of technology. In Innis' concern about "the mechanization of knowledge" expressed in his 1948 address to the Conference of Commonwealth Universities at Oxford, McLuhan's concept of the medium as message first presented in 1951 in *The Mechanical Bride*, and Grant's discussion of the effects of technology on "all the forms of life" in his 1955 address to the Annual Couchiching Conference, one finds practice-based understandings of technology, which emphasize the danger that technology poses to our civilization. Over the course of their careers each of these three thinkers also argued that our ordinary involvement in technological practice can create a dependence on a technological approach and that meeting the ethical challenges of technology must involve an appropriate awareness of this kind of dependence.

Arthur Kroker's seminal work on these three figures, however, emphasizes the dissimilarities of their positions on the ethical implications of technology (Kroker 1984, 18). According to Kroker, McLuhan is an optimistic herald of the new information age, Grant is a dark prophet of technological society, and Innis is a practical-minded intermediary between these two visions of our technological future. John Goyder, on the other hand, argues that there is a certain similarity between the perspectives of Grant and McLuhan, but that this shared perspective results not in a critical attitude towards technology but "a state of fascinated ambivalence" (Goyder 1997, 239). The following investigation, in contrast, argues that a greater fundamental unity can be found in the varied responses to the ethical challenge of technology of Innis, McLuhan and Grant and that their general ethical approaches to technology are significantly more critical of

technological development than either Kroker or Goyder acknowledge.

Innis, McLuhan and Grant are generally acknowledged as constituting "the foremost group of 'technological critics' in Canada" (Goyder 1997, 239). Unlike some intellectuals, they did not avoid involvement in public life. According to Daniel Drache,

> More than any other Canadian scholar in recent times, Innis's prodigious writings on political economy shaped the views of his contemporaries, from Donald Creighton, one of Canada's most eminent historians, to Marshall McLuhan, a world figure in communications theory. As a leading university administrator, Innis was a moving force in the founding of the Social Sciences Research Council of Canada and a key figure in public life while dean of graduate studies at the University of Toronto. Throughout much of his adult life, Harold Adams Innis was Canada's pre-eminent thinker and theoretician. He had the stature of a Galbraith in public policy; governments beat a path to his door for advice and counsel. (Drache 1995, xvii)

McLuhan played the role of public intellectual and "was a worldwide celebrity by the late 1960s, an overnight sensation created by the same forces that his work described" (Rawlinson and Granatstein 1997, 231). Grant wrote books for wide public audiences in Canada, such as *Lament for a Nation* (1965), which was highly praised both by nationalist conservatives and members of Canada's new left movement in the late sixties. As a result, as Rawlinson and Granatstein note in their survey of Canada's most prominent twentieth century intellectuals, "Grant's influence on the public and the politicians was immense. Even today in a much more integrated North America, Grant's lament continues to rally the nationalist tories, the left-Liberals, and the social democrats" (Rawlinson and Granatstein 1997, 188). None of these three thinkers was a shrinking violet when it came to politics and public involvement, yet in all of their extensive writings on technology there is a strange silence about the practical matter of how to best go about making practical judgements about technologies and technological issues.

Carl Berger suggests that an impractical or even determinist approach to social and political issues was an integral part of Innis' outlook throughout his career. He notes that "for reformers, Innis appeared to dwell excessively on what men could not do. . . . He had an anti-reformist bias. . . He often seemed more

impressed—one might almost say overwhelmed—with the intractability of the forces at work than with the prospects for precise solutions" (Berger 1976, 103). And although Innis served on several commissions of the national government of Canada, "he tended to be scornful of those academics who were eager to serve governments at every opportunity. Scholars should teach and research, not be policy makers" (Berger 1976, 96). Philip Marchand similarly notes that one of the persistent forms of criticism leveled at McLuhan was "that he was complacent about the phenomena he described and indifferent to matters of social justice" (Marchand 1990, 191). Even a sympathetic colleague, Abraham Rotstein, could make observations like the following: "But the march of modernity in seven league boots to some imminent global unity was equally mesmerizing [to McLuhan].... But he offers no systematic social or philosophical critique beyond a present critical vigilance and a future benign anticipation" (Rotstein 1985). McLuhan is popularly held to have been one of the twentieth century's most provocative thinkers about modern communications technologies. And yet no practical program for dealing with the negative effects of these technologies is generally recognized as having emerged from his work. As Northrop Frye notes, "he has come down as a kind of half-thinker who never worked out the other part of what he was really talking about" (Frye 1992, 161). It has also been noted of Grant that while he was a severe critic of technological civilization, he was largely silent about practical responses to specific issues. Ian Box argues that "specifically, he offers little in the way of systematic criticism of technological civilization, and no constructive alternatives to our present disorder are put forward for consideration" (Box 1982, 504). William Christian, on the other hand, argues that one can at least find indications of "an implicit and positive teaching in his writings" (Christian 1983, 350). Others have noted in Grant's work a pervasive attitude of despair in the face of the problems of modern life, as can be seen in titles of articles such as John Muggeridge's "George Grant's Anguished Conservatism," William Christian's "George Grant and the Terrifying Darkness," Edwin and David Heaven's "Some Influences of Simone Weil on George Grant's Silence" and Dennis Lee's "Grant's Impasse."

Why should three of Canada's most notable twentieth century technological critics, who were generally not reticent about publicly expressing their views, seem so reticent when it came to making practical suggestions for how we should go about making choices concerning a subject which came to dominate their academic work? In his later work Innis shifted his interest from economic history to the dynamic of technological change. In particular in these later works, as Drache notes, "the point he repeatedly emphasized was that everyone

had to be conscious of the contradictory potential of each new technology" (Drache 1995, li). Grant came to see technology in Heideggerian terms as the "endeavour which summons forth everything (both human and non-human) to give its reasons, and through the summoning forth of those reasons turns the world into potential raw material, at the disposal of our 'creative' wills" (Grant 1974, 88). Or as he puts it elsewhere, technology is the merging of two fundamental types of human activity, "knowing and making," in which "both activities are changed by their co-penetration" (Grant 1986, 13). For him, technology is more a process than product, and this process is most fundamentally concerned with "the domination of man over nature through knowledge and its application" (Grant 1986, 4). For McLuhan dependency involves a "subliminal and docile acceptance" of technology (McLuhan 1977, 103). This attitude is a result of a distinctive form of unconsciousness that he thinks attends most of our technological activities. The problem is not one of false consciousness or false needs, but a lack of consciousness at all of the changes that technology rings in oneself and society. The result is that "a man is not free if he cannot see where he is going" (McLuhan 1977, 103).

While each of these thinkers was known for having severe misgivings about the course that technological civilization was taking, none of them undertook to describe anything in the way of a systematic approach to responding to the kinds of ethical challenges that technology can present. Their silence in this regard is a mystery worth considering. It could be suggested that they were simply detached ivory-tower academics. However, their willingness to participate in public debate seems to belie such a claim. My counter hypothesis is that for them, the challenge of technology was located in the very nature of technology itself, as a distinctive form of human activity, and that this perspective explains their refusal to advocate a systematic response to the challenges of technological civilization. I will argue against the claim that these three prominent Canadian intellectuals generally advocated a neutral or ambivalent position on the issue of technology.

At the core of the silence of Innis, McLuhan and Grant is a shared understanding of the technological phenomenon as encompassing all formalized and systematic problem-solving practice. Technology is any kind of formalized practice we can habitually engage in, whether in the form of a technique or technique and artifact, to respond to commonly encountered difficulties. Each sees proper awareness of this aspect of technological practice as being essential to our proper understanding of technology. They share the position of rejecting a search for a systematic ethical or political approach because such a search can too easily turn

into the very kind of habitual technological response they wished to put into question. Each dealt with this realization in a different way. Innis began to refuse work on public commissions or to serve governments as a policy consultant (Creighton 1957, 110-111). After the publication of *The Mechanical Bride*, McLuhan publicly renounced what he called "the error of critical moralism" (Fitzgerald 2001, 78). Grant refused to act as apologist for the political programs of either the left or the right (Reimer 1978, 49-60).

We can see the first glimmerings of Innis' understanding of the centrality of habit for technological practice in his address, "A Critical Review," presented to the Conference of Commonwealth Universities at Oxford University in 1948 and later published as *The Bias of Communication*. The following is his introduction to that address:

> I propose to adhere rather closely to the terms of the subject of this discussion, namely, "a critical review, from the points of view of an historian, a philosopher and a sociologist, of the structural and moral changes produced in modern society by scientific and technological advance." I ask you to try to understand what that means. In the first place, the phrasing of the subject reflects the limitations of Western civilization. An interest in economics implies neglect of the work of professional historians, philosophers, and sociologists. Knowledge has been divided to the extent that it is apparently hopeless to expect a common point of view. In following the directions of those responsible for the wording of the title, I propose to ask why Western civilization has reached the point that a conference largely composed of university administrators should unconsciously assume division in points of view in the field of learning and why this conference, representing the universities of the British Commonwealth, should have been so far concerned with political representation as to forget the problem of unity in Western civilization, or, to put it in a general way, why all of us here together seem to be what is wrong with Western civilization (Innis 1951, 190-191).

For Innis, the assumption of conference organizers that an academic conference on the future of the university should be structured along the lines of academic specialization was a manifestation of the kind of technological mindset he wished to combat. William Westfall notes that for Innis the university in the post-war period had "become synonymous with specialization and departmentalization"

and that "with a professionalised university we have succumbed to the very pressures that Innis had worked so hard to oppose" (Westfall 1981, 45). John Watson sees Innis as a tragic figure because "the sad truth is that the continuing struggle he waged against specialization in the social sciences and for an authentically indigenous school of scholarship has largely been lost since his death" (Watson 1977, 45). The influence that ingrained beliefs, or bias as Innis called such beliefs, was to become the essential focus of Innis' understanding of technology.

The emphasis on the aspect of unconscious habit or bias in technology is common to all three of these scholars. Grant puts this point bluntly when he states "We are technique" (Grant 1969a, 137). Technology is for him a process in which all people participate so intensely through the actions of their "hourly existing" that it is almost impossible to conceive of them bringing this process under any kind of sustained ethical scrutiny. He comments that "every moment our existence is so surrounded by the benefits of technology that to try to understand the limits to its conquest, and also its relation to human excellence, may seem the work of a neurotic seeking to escape from life into dream" (Grant 1959, vi). According to Grant, the fact that technological activity has come to dominate the lives of most modern individuals presents them with a unique dilemma. Since this fundamental way of acting has become so second nature, when it comes to addressing issues that might suggest possible limits to this kind of activity, their tendency is to engage in this kind of activity rather than to consider its limitation. Or, as he puts this point, "We are at the mercy of the technological machine we have built, and every time anything difficult happens, we add to that machine" (Grant 1969c, 3).

McLuhan also believed that the intimate engagement of modern individuals with their technologies prevents a proper awareness of the ethical implications of these technologies. In his book *Understanding Media*, he describes at length how the intensity of the process of technological change can "numb" one's sensitivity to this process (McLuhan 1964, 41). The origin of this numbness is in the nature of all technologies as "extensions of some human faculty—psychic or physical" (McLuhan 1967, 26). In the same way that most people are normally unaware of thought when they are thinking, or of their hands when they are grasping, or of their mouths when they are speaking, they are normally unaware of their technologies in their regular use. In most natural and unmediated human activities one's focus is on the task itself and one's goals and not the means (the various parts of our body or mind) being used to achieve these goals. This means

that it is precisely the "tools" with which we are most familiar that we will be most blind too, in the same way that a medium of communication, such as a television, fades into the background when we are focused on the message it is conveying.

For McLuhan there seem to be two primary supports of this normal lack of awareness. The first is the result of the simple intimacy that is an integral characteristic of technology as an extension of oneself. His suggestion is that in our technological actions, just like in our unmediated actions, we are normally unconscious of the various parts of our functioning body and mind. He puts this point as follows: "The principle of numbness comes into play with electric technology, as with any other. We have to numb our central nervous system when it is extended and exposed, or we will die" (McLuhan 1977, 106).

As McLuhan suggests on many occasions, it is only when technologies have passed from normal use that they typically become objects of conscious appreciation, such as when they become objects in museums. It is for this reason that McLuhan compares most attempts at understanding the ethical impact of technologies to an attempt at driving a car by way of its rear-view-mirror (McLuhan 1967, 100).

However, there is another important source of a general lack of consciousness of our technologies and their effects. According to McLuhan it is also the habitual nature of most technological activities that contributes to the tendency to overlook these activities. As he puts this point, "It is this continuous embrace of our own technology in daily use that puts us in the Narcissus role of subliminal awareness and numbness in relation to these images of ourselves. By continuously embracing technologies, we relate to them as servomechanisms" (McLuhan 1977, 103). All technologies involve us in routine forms of practice. From the grain pounding mill of rural villages in developing nations, to the procedures of airways management of large airline hub cities in the developed world, routine procedure is the name of the game when it comes to technology. And this very routine-ness can, according to McLuhan, contribute to a lack of awareness of the implications of such practice.

Innis, Mcluhan and Grant are each concerned with understanding unconscious social processes. As Leslie Pal notes, "The subject matter which Innis retained for social science was habit or bias. [In choosing this subject,] Innis was suggesting that while some human activity is consciously and spontaneously

directed much of it appears to be the result of unreflective and ingrained behaviour" (Pal 1977, 33). Grant's fundamental philosophical approach to technology, as Philip Hanson describes it, was to become "a spectator, waiting and listening to the speeches, rituals, and strivings of a society dominated by technique" (Hanson 1978, 308). McLuhan writes that "man is not only a robot in his private reflexes but in his civilized behaviour and in all his responses to the extensions of his body, which we call technology" (McLuhan 1968, 19). They each look past the obvious and sometimes grandiose failures of technology to the nature of technological action itself.

They each saw a need to develop an approach to technology in which the character of technological action as habit is consciously examined. However, each also suggests that the deep-rootedness of a technological approach can even lead us to habitually seek technological solutions to this problem. Innis presents this dilemma in the following fragmentary note taken from his *Idea File* (Innis died at age 58 with a substantial part of his technology-focused work left unedited):

> Mankind is continually being caught in his own traps--[once specialist] language and systems [are] developed [they become] difficult to break down . . . . [The ancient] Greeks had the advantage of debating without control but the development of a written tradition [strengthened the power of specialist language and systems. An emphasis on] control [by way] of systems followed--[the legal code] used by [the] Romans [being one example]. [Early written] communication [was] limited to a small number--[resulting in a] hierarchy of philosophy--[Humankind's] egoism makes it more difficult to secure relief [from the tyranny of specialist language and systems because]--mankind's belief in his own contrivances [prevents him from questioning his commitment to these contrivances] (Innis 1980, 6.50).

As Innis points out, our dependency on technologies and technological problem-solving practice is further augmented by the fact that every technology is a source of power.

For Innis, any new form of technological capability creates a definable group who will benefit from the application of that capability. These "elites," as Innis calls them, have an interest in maintaining a situation conducive to the development and continued use of the technologies that benefit them. The term

"elite," as used by Innis, is not meant to carry the notion that such groups will necessarily be privileged minorities. His use of this term is meant, instead, to suggest, in a manner similar to the work of Foucault, that any new technology always results in the creation of a definable group that gains an advantage from the use of a technology and also a group that does not. Technologies must, according to Innis, inevitably set up distinct bodies of individuals, ranging from immensely large to immensely small, which can come into political conflict. Whole nations/linguistic groups, for example, are said by him to have emerged because of their commitment to certain technological conventions, such as when he states that "the Dutch language had an existence separate from Germany because it was fixed early in writing" (Innis 1951, 125).

Innis' later work focused on what he called "monopolies of knowledge," which he describes as "channels of thought" and practice that emerge in civilizations through the adoption of new technologies (Innis 1951, 4). Arthur Kroker suggests that "long before the French philosopher, Michel Foucault, said that *power* is the locus of the modern century, Innis in his studies of neotechnical capitalism had already revealed exactly *how* the power system works: by investing the body through capillaries of diet, lifestyle, and housing" (Kroker 1984, 120). Innis uses the term "monopoly or oligopoly of knowledge" to describe any situation of a specific group of people benefiting from a technology (Innis 1951, 64). New technologies unleash changes in societies because they disrupt existing knowledge monopolies. As new challenges arise which cannot be addressed by existing elites, new technologies and new groups arise to address these new challenges. These new groups, however, inevitably support the creation of new knowledge monopolies, which help give rise to new forms of rigidity and disequilibrium in society in the face of changing circumstances. These strains in the social framework create the need for new technologies. McLuhan describes a similar process when he suggests that:

> It is the accumulation of group pressures and irritations that prompt invention and innovation as counter-irritants. . . . physiologically, man in the normal use of technology (or his variously extended body) is perpetually modified by it and in turn finds ever new ways of modifying his technology. (McLuhan 1964, 46)

Watson argues that Innis' later work focuses almost exclusively on

> an examination of how a different dialectic [than that of Marx], the

> dialectic of power and knowledge, was played out in human history using communications systems as a focus for analysis of this process. . . . The effect which Innis predicted was a tendency away from critical thinking and towards following orders on a mass scale (Watson 1977, 58).

One reason that critical thinking can be threatened by the ordinary process of technological practice, according to Innis, is because seeking to manage this process as a whole can itself become a source of power. He notes that "constant change in capitalist society--compels administration to keep constantly alert to protect themselves against and to take advantage of any particular change" (Innis 1980, 5.20). Professional innovators, facilitators of innovation can become engaged in the project of "development" and in this way be considered to constitute a technological elite with an interest in encouraging and directing technological change in general. Such a broad conception of technology's influence obviously puts the ability to think freely about technology at an extreme premium, on Innis' analysis.

Innis felt that the university was the only place from which to expect any understanding of the influence of bias to emerge. He believed that it was the only place dedicated in principle to producing authentic social criticism of the application of human knowledge and creativity. As he puts it: "[The] Place of learned class [and] universities [is] to prevent domination of various groups -- church, army, state -- [universities should foster] appreciation of [the] necessity of limit[ing the] power of groups" (Innis 1980, 2.17). This belief in the university as a special haven for critical inquiry is perhaps why "some of his choicest epigrams of dispraise were reserved for those academics who, far from retaining a tentativeness about their subject bred of an awareness of limits, proceeded to expound final solutions" (Berger 1976, 103). Innis knew from personal experience how tempting it was for social scientists to accede to "appeals to utility and immediate application" to the detriment of the ceaseless task of understanding the nature and implications of such action (Creighton 1957, 130).

Grant explicitly asks the question of how one can make judgements about technology that are not biased by one's practical dependence on a vast array of technologies and the general approach of technological problem-solving in his discussion of the "will to technology" in his book *Technology and Empire* (Grant 1969, 31-32). He develops the idea further in *Technology and Justice* when he

examines the comment of a computer scientist colleague that "the computer does not impose on us the ways it should be used" (Grant 1986, 19). He uses this comment to illustrate how difficult it is for even thoughtful people to avoid an unconscious bias towards adopting a technological problem-solving approach to most problems, including ethical issues. According to Grant, most people simply believe in the dogma that "all human problems can be settled by technical skill" even when "some of the dogma's formulations are shown to tend toward immoral practice" (Grant 1959, iii, vi).

In response to his colleague's remark he points out the simple fact that computer use is dependent on the existence of investment-heavy machines that require large commercial institutions for their production and hence "at the simplest factual level, computers can be built only in societies in which there are large corporations" (Grant 1986, 25). Also, computers have certain operating constraints, one of these being the need to classify data, and as Grant suggests, "It is the very nature of any classifying to homogenise" (Grant 1986, 23). He concludes that contrary to what his colleague would have him believe, computer technology does impose on its users how it should be used because it imposes a certain "destiny" on any society in which that technology is used. One cannot have computers without countenancing a certain kind of industrial development and one will, in using computers, necessarily become involved in actions of classification. The computer scientist's remark that the computer "does not impose" reveals that he is either ignorant of these social implications or that he believes that any difficulties, ethical or otherwise, that might arise can be dealt with without having to ethically question the uses of a computer. In either case, the remark illustrates an unquestioned faith that further technological activity will be sufficient for dealing with any difficulties that might arise from the application of computer technology and that technological innovations do not, in any meaningful sense, increase the burden of moral judgement that people must bear.

But Grant also insists that it would be a mistake to think technology is just the purview of technicians such as his computer scientist colleague. For him technology is a process in which all people participate through a multitude of everyday actions. The result is a "package deal" as he puts it (Grant 1986, 33). He questions how anyone can be expected to make judgements about technologies if one is so continuously engaged in the process of technological development. Grant expresses the dilemma that arises from this situation as follows:

> The result of this is that when we are deliberating in any practical situation our judgement acts rather like a mirror, which throws back the very metaphysic of the technology which we are supposed to be deliberating about in detail. The outcome is inevitably a decision for further technological development (Grant 1986, 33).

If the general approach of creative technological problem-solving itself becomes a standard and habitual way of responding to the problems created by such action, what practical action can be undertaken to face this problem that will not simply exacerbate the problem? According to Grant, in the process of bringing technology into ethical consideration one can even slip into a search for new technologies or techniques to address the problem of slipping too easily into a search for new technologies or techniques.

Like Grant, Innis also points out that an uncritically positive attitude towards a technological problem-solving approach has come to dominate in Western societies. As he puts it, "The form of mind from Plato to Kant which hallowed existence beyond change is proclaimed decedent. This contemporary attitude leads to the discouragement of all exercise of the will or the belief in individual power" (Innis 1951, 90). But he does not outline a programmatic way to address this problem. Innis' approach to communications studies simply attempts to make his reader aware of the possibility for such bias. Or as William Westfall describes Innis' approach to scholarship:

> The fact that one studies bias does not make one immune from it. Consequently, Innis incorporated into his analysis of bias a study of the specific context in which the observer existed and in which scientific analysis took place (Westfall 1981, 44).

But does this reluctance to make practical suggestions for dealing with technology and technological bias imply that it is completely impossible to escape their influence? As Grant attempts to put the problem succinctly, "technique is ourselves" (Grant 1969b, 137), or as he also describes our predicament, "All of us in our everyday lives are so taken up with certain practical achievements, in medicine, in production, in the making of human beings and the making of war, that we are apt to forget the sheer theoretical interest of what has been revealed" (Grant 1984, 37). Practical action tends to occlude the possibility for theoretical reflection and the result is that "we are called to understand technological civilization just when its very realization has

radically put in question the possibility that there could be any such understanding" (Grant 1984, 34).   McLuhan describes this fundamental predicament of modern life as follows:

> Man becomes, as it were, the sex organs of the machine world, as the bee of the plant world, enabling it to fecundate and to evolve ever new forms. The machine world reciprocates man's love by expediting his wishes and desires, namely, in providing him with wealth. (McLuhan 1964, 46)

How can we respond to the threat of technological dependency if the approach of developing a specific ethical or political program for offsetting its inherent tendencies is to be avoided?

What Innis', Grant's and McLuhan's analyses of technology seem to suggest is that there is a way of responding to any issue brought about by technological change that does not simply fall into the pattern of technological dependency. One must seek a proper balance between novel technological practice and the critical ethical suspension of one's participation in certain forms of such practice. In other words, when we are "deliberating in any practical situation," as Grant describes this fundamental choice, we can either choose the route of "technological development" or we can critically reject some form of technological development in which we are participating. McLuhan suggests that such a fundamental choice is always a possibility when he states that "we can, if we choose, think things out before we put them out" (McLuhan 1964, 49). Innis seems to describe such a fundamental possibility when he notes that "civilization [is] a struggle between those who know their limitations and those who do not" (Innis 1980, 5.33). Their analyses of technological dependency all seem to indicate that when seeking to respond ethically to practical problems in which technology has played some part the *choice is always between innovation and discrimination about innovation*. Their critical theories of technology argue for a more balanced application of these two fundamental approaches.

The source for this fundamental choice is in the inherent nature of the technological process to create new problems, or "irritants," and new forms of disequilibrium in power. Since it is impossible, according to Innis, McLuhan or Grant, that a state of technological completion can ever be achieved, any new technology will always bring with it a certain amount of harm in addition to the benefits it brings, harm that will also be distributed unevenly in a society. Thus the technological process perpetually creates new technological issues that can be

responded to either by seeking some new form of technological power or by way of the critical rejection of some problematic technology. Or as McLuhan describes this dynamic:

> Response to the increased power and speed of our own extended bodies is one which engenders new extensions. Every technology creates new stresses and needs in human beings who have engendered it. The new need and the new technological response are born of our embrace of the already existing technology—a ceaseless process (McLuhan 1964, 183).

The ongoing potential for bias toward technological action to respond to novel problems is based in this dynamic. Since we are talking about two fundamentally different categories of possible response to any practical difficulty in which technology plays some part, unless the human capacity for action is unlimited, then one's life will always have to consist of a certain ratio between these two kinds of action. But it is obvious that without some conscious effort to maintain this ratio at some appropriate level, the ratio could skew dramatically in one direction or the other. And the strongest tendency will be towards the technological side because technological activity always involves us either in habitual ways of acting or in the intense pursuit of such ways, which itself can become a habitual response. And technological action not only creates an ongoing need for such action it can, by its very nature, help denude one's ability to engage in thoughtful reflection on, and judgement of, such need. All technological action can involve a largely unconscious self-reinforcing tendency in virtue of the fact that such action always involves its own distinctive way of resolving the problems that it helps produce. Thus, this way can compete with alternative ways of addressing such problems, such as the simple rejection of specific technological actions.

According to Grant, the activity of reflecting on the ethical import of our technological choices can therefore be increasingly excluded from a life dominated by technology. As he puts it, "as an end in itself, [technology] inhibits the pursuit of other ends in the society it controls" (Grant 1959, vii). There is a very simple reason for this tendency. According to Grant, technology involves such a tendency because it cannot itself encompass contemplation and deliberation about ends. It cannot encompass these types of activity because it is the active pursuit to satisfy specified ends, taken as already given. It can be coupled with the activities of contemplation and deliberation about ends, but it need not, and this inherent possibility of disjunction means that not only can it

potentially escape ongoing ethical scrutiny, it can displace such activity.[i] Innis describes this inherent tendency as follows: "Constant changes in technology . . . increase the difficulties of recognizing balance let alone achieving it" (Innis 1951, 140). Or, as he notes about writing in particular, "absorption of energies in mastering the technique of writing left little possibility for considering implications of the technique" (Innis 1951, 9). McLuhan cites in at least five places Alfred North Whitehead's statement: "The greatest invention of the nineteenth century was the invention of the method of invention" (McLuhan 1962, 45, 176; 1995a, 187; 1995b, 383; 1968, 15). Coupling this notion with his understanding of the inherent nature of all technologies to escape our critical awareness indicates that he felt it equally important to be critically aware of our use of the technological problem-solving approach.   For all three of these Canadian critics of technology it would appear that if one were unwilling to question one's commitment to habitual forms of technological practice, including the general approach of technological problem-solving, one would fail to fully meet the ethical challenge of technology.

In line with their call for greater skepticism about innovation, it is not surprising that they eschewed calls for novel ethical approaches to meet the challenges of our technological future.   They suggest instead that we might already be equipped well enough with appropriate ethical tools and that what is lacking is simply a willingness to put these tools to use in the restraint of specific technological activities. Perhaps this emphasis on the strength of tradition is why many commentators have considered them to be impractical when it comes to saying something to address the questions of our technological future. The following citations from various commentators certainly suggests that this was a common disappointment with their work: "Innis never believed in an easy dissolution of such biases, especially as he perceived more clearly their operation in our own time, nor did he advance any special vision of the future" (Crowley 1981, 240-41); "What McLuhan never saw from looking at television was what he once knew perfectly well . . . the mechanical bride marries us to the power of the state and its industrial economy. But McLuhan preferred not to lift the veil [of power]" (O'Neill 1981, 13); Grant "ultimately refuses to follow through on the hard implications of his philosophy" (Kroker 1984, 49); "Grant has been charged with providing few solutions to the profound problems he raised. To 'lament,' after all, is to imply that it is already too late to do much . . . One might wish that he had been able, or had been more inclined, to couple his deep analyses and profound faith with plans for action" (Babe 2000, 205-206). According to these commentators one should expect some kind of innovative

theoretical approach to the ethical and political challenges of technology from such reputedly insightful critics of our technological age.

That no such novel approaches were proffered has puzzled some commentators, but the programmatic silences of Innis, McLuhan and Grant make sense in light of their discussions of the dangers of technological dependency. Part of their message might be that we should be cautious about experts and skeptical about the promises of novel ethical or political reform programs and simply get on with the task of making conscious ethical choices about the technologies in our lives with the ethical resources we already have. As Arthur Kroker has pointed out about McLuhan, "Over and over again in his writings, McLuhan returned to the theme that only a sharpening and refocussing of human *perception* could provide a way out of the labyrinth of the technostructure" (Kroker 1984, 64). As Grant puts it, "those of us who at certain times look to grasp something beyond history must search for it as the remembering of a negated tradition" (Grant 1969b, 137). Whereas Innis writes:

> It is to be expected that you will ask for cures and for some improvement from the state of chaos and strife in which we find ourselves in this century. There is no cure except the appeal to reason and an emphasis on long-run considerations--on the future and on the past. (Innis 1977, 5)

The implication of the ethical critiques of technology of Innis, McLuhan and Grant is that one should not avoid actually making choices about one's technological actions because one is preoccupied with the development of improved ethical or policy tools.

This idea is exemplified in the lives of Innis, McLuhan, and Grant. They practised what they preached. As one commentator notes of Innis:

> His own bias, as he so often stated, valued a culture characterized by balance, order, and the oral tradition. His analysis of the problem and his attachment to these human, non-technological values set a course that a number of Canadian nationalists would follow. He beheld the decline and fall of a meaningful culture, and he was bitter as he faced defeat. One can hear the echoes of his lamentations in the work of George Grant, Donald Creighton and Dennis Lee. (Westfall 1981, 47)

Innis could make comments like the following because his stance towards

technology encourages not only innovation but also the possibility of the critical rejection of some innovations:

> Mass production and standardization are the enemies of the West. The limitations of mechanization of the printed and spoken word must be emphasized, and determined efforts to recapture the vitality of the oral tradition must be made. (Innis 1950, 168)

It is possible to see in Innis' work strains of determinism, and therefore, the rejection of any possibility of actively seeking a balance between the various technological forces that allow for the stability of empires (Duffy 1969, 16). It is also possible to see in his work a call to create novel technological forms in an attempt to achieve the type of balance he felt could be found in the civilization of Byzantium (Innis 1951, 117). Both these perspectives fail to fully capture the position of Innis because his position also encompasses the possibility for the critical rejection of technologies, such as the rejection of print in favour of face-to-face discourse. As Dennis Duffy observes, "his own bias, he proclaimed, was for the oral tradition, which he saw involving 'personal contact and a consideration for the feelings of others'" (Duffy 1969, 16).

McLuhan was also willing to consider the possibility of the critical rejection of technologies. For instance, he states that "The technology of the photo is an extension of our own being and can be withdrawn from circulation like any other technology if we decide that it is virulent" (McLuhan 1964, 193). There is a desperate quality to the writings of McLuhan near the end of his life, well documented by his biographers. As Marchand characterized this state, in his last years McLuhan resigned himself to the "grim role of the seer who is sometimes derided, sometimes petted, but never heeded" (Marchand 1990, 228). But this desperation did not stop him from taking action to fight those aspects of modernity he disliked. As Marchand also notes: "He publicly opposed increased congestion in the heart of the city, whether in the form of new expressways or high-rise apartment buildings, which he particularly despised" and that he "disliked automobiles on principle" (Marchand 1990, 89). It is well known of McLuhan that he could sometimes present himself as an apologist for technological change (Marchand 1990, 169). However, Marchand suggests that "he was also in the habit of defending his intellectual flank by frequently insisting that his outlining the features of the new media ought to have inspired everyone with sufficient revulsion to avoid them" (Marchand 1990, 170). The apparent espousal of technological change has brought some of McLuhan's

followers to conclude that McLuhan favoured unrestricted experimentation with new technology. Derrick De Kerckhove, for example, interprets McLuhan as championing a form of techno-fetishism:

> Where other cultural observers might have cited forces of marketing, McLuhan saw in this phenomenon a purely psychological pattern of narcissistic identification with the power of our toys. I [De Kerckhove] see it as proof that we are indeed becoming cyborgs, and that, as each technology extends one of our faculties and transcends our physical limitations, we are inspired to acquire the very best extension of our own body. (De Kerckhove 1995, 3)

However, others besides Marchand have argued that McLuhan is perhaps more of an old-fashioned moralist, and even Luddite, than De Kerckhove is willing to acknowledge. As Sam Solecki notes about McLuhan: "He told one reviewer that he was a conservative and hated all change, but given that change was inevitable he was damned if he was going to let it roll over him" (Solecki 1981, 4). Such an interpretation of McLuhan means taking seriously his statement that "we can if we choose, think things out before we put them out." It means considering the possibility, as Marchand recommends, that some of McLuhan's seemingly more positive statements about technological change were meant primarily as rhetorical overstatements aimed at eliciting one's skepticism (Marchand 1990, 169). For McLuhan, stopping the use of a technology quite clearly does not commit one to the complete rejection of all technology but to an intelligent readjustment of one's technological choices. He states that the "amputation of such extensions calls for as much knowledge and skill as are prerequisite to any other physical amputation" (McLuhan 1964, 193). Rejecting a technology may mean filling the space left in one's capabilities with another existing technology or it may mean simply choosing to do different things altogether. "To resist TV," McLuhan writes, "one must acquire the antidote of related media like print" (McLuhan 1964, 170).

If the positions of Innis, McLuhan and Grant leave them open to accusations of vagueness and impracticability, this may be intended, for their positions point to the conclusion that the offering of a novel ethical or policy program is one of the least helpful things one could do for a society hooked on seeking novelty. Instead, we must look to what they refused to do to get a proper grasp on their approaches to charting a proper course into the technological future. We can see a critical approach to technology in Grant's ethical criticism of abortion and the

growing influence in the humanities of the scientific paradigm of research, and in his call for the recovery of ancient political philosophy (O'Donovan 1984, 73). For Innis, a critical approach can be seen in his misgivings about the expansion of "the price system" and his battles against the "mechanization" of knowledge and the increasing tendency of economists to become consultants to governments and business (Kroker 1984, 118-121). He frequently criticized social scientists for being too enamoured with "elaborate calculating machines" and "refinements in mathematical techniques" (Innis 1951, 86). He was skeptical about whether the new media of communication would contribute to improving human awareness and understanding, such as when he states in the following note from the *Idea File*: "Improved communication smothers ideas and restricts concentration and development of major ideas. Mechanization and sterility of knowledge [result]" (Innis 1980, 2.7). Innis, like McLuhan and Grant, had a certain degree of anti-reformism in his approach to technology. How else can one make sense of a comment such as this: "Belief in [a] prosperity cult [is a] part of increased advertising--[the] emphasis [is always] on [seeking a] better world and [the] avoidance of problem[s]" (Innis 1980, 2.3). The fundamental point each makes through his programmatic silence but willingness to engage in the critical rejection of specific modern trends, is that one's response to the challenges of technology should not become overly focused on finding some radically new way of ameliorating the effects of technological change.

Innis, McLuhan and Grant each argue that such technological proposals for political action are not enough and that they can easily become mere public relations exercises that can distract us from wrestling with our own individual contributions to the technological causes of many social ills. Innis suggests that modern means of mass communication promote such a tactic when he states that "[modern politics is characterized by a] necessity of stressing continuous political and legal change as a device for dominating news" (Innis 1980, 5.24). Even guided by the best intentions, some calls for systematic political reform can have the unforeseen consequence of reinforcing technological dependency by deflecting attention from the need for individuals to re-examine their technological practices. What is required is that in addition to creating innovative political ways of managing the effects of technological change one must also consider the possibility of simply eschewing certain technological actions that one undertakes as an individual that contribute to the creation of certain social issues. As McLuhan expresses this dual ethical responsibility: "What we seek today is either a means of controlling these shifts in the sense ratios of the psychic and social outlook, or a means of avoiding them altogether"

(McLuhan 1964, 70). Ethically addressing technology should not only involve seeking ways to control the effects of technological change. It must also involve the critical analysis of the actual negative effects of one's own technological choices.

The life of renowned architectural critic, city planner, and environmentalist Jane Jacobs provides a good example of someone attempting to live a life in which technological action is properly balanced by action focused on the reconsideration of particular technological activities. Jacobs is perhaps more renowned for the actions she has rejected than those which she has endorsed. She was "instrumental in preventing the wholesale devastation of neighbourhoods [in Toronto] by various misguided crosstown expressway proposals" (Saunders 1997, C20), such as the Spadina Expressway.[ii] One commentator notes that she "rejected the prevailing credo of wide highways, big [housing] projects and single-purpose zoning" (Hume 1997, F5). As she herself recounts, "When David Crombie was mayor he consulted me about getting housing downtown. . . . One of the biggest problems we had to deal with was old bylaws" (Hume 1997, F5). She also has commented that "if the car has become a source of evil, it is because it has been made to fill too many niches." And as she goes on to recount: "I was born and raised in a suburb, when I went to New York at the age of 18, I was enchanted. I've never been tempted to go back to live in a suburb" (Hume 1997, F5). Her main impact has not been in espousing a specific political program but rather in rejecting and advocating for the rejection of specific technological practices. As Alan Littlewood, a Toronto City planner put it "Jane was never prescriptive. There were no formulas, no 'how-to' books" (Hume 1997, F5).

Innis, McLuhan, and Grant were most likely silent on the question of how to fashion public policy for the control of technology because their understandings of technology involve seeing such a project as most likely being a mere manifestation of technological habit. Their response to this conclusion is a case of the medium being the message. The message of their silence is that we should get on with the task of ethically questioning our technological habits. This conclusion suggests that the hope of those like Andrew Feenberg, who wish to develop some kind of "politics of technological transformation" or some "structural basis for understanding the operations in which the dominated might resist domination" (Feenberg 1991, 13, 73) might be at best naïve, and at worst, unhelpful.

In fact, Feenberg's discussion of the views of Heidegger, Marcuse, Foucault, and Ellul on technology, and his concerns about their "fatalism" and in particular the political "impasse" (Feenberg 1991, 73, 75) that he finds in Heidegger's work, seem to parallel my own analysis of the thought of Innis, McLuhan and Grant. The apparent pessimism to which these thinkers seem prone could indicate that they too may have held a belief that the thoughtful rejection of specific technological actions using the ethical tools one already had on hand could be an adequate response to the ethical challenge of technology. In other words, these other technological theorists might have agreed with Iain Thomson's suggestion to Feenberg that "the critical theorist of technology can learn much from the Amish, who are no 'knee-jerk technophobes,' but rather 'very adaptive techno-selectives who devise remarkable technologies that fit within their self-imposed limits'" (Thomson 2000, 208). Innis, McLuhan and Grant all point toward the need to include such limits in one's life. That they remained largely silent about how to respond systematically to technology's challenges indicates the extent to which one might have to go in controlling habitual technological response. One can find in their silence a demonstration of the clear alternative to the technological approach--the simple thoughtful rejection of a particular technological habit. Their analysis of technology suggests that a proper response to technologically originated issues, is to understand the limits of our ability to resolve technological dilemmas through technological problem-solving and to recognize the compelling moral necessity for people to also exercise personal responsibility when it comes to their own mundane technological choices. In other words, we should not always rely first and foremost on novel legal mechanisms, political programs, ethical theories or any other such "plans for action" to resolve the ethical dilemmas raised by technology, but realize that technology must also be responded to by the ethical judgement of human individuals. Such a position is similar to one increasingly suggested by some environmentalists in regards to certain environmental issues, such as climate change. Their calls for people to make radical changes in lifestyle echo the suggestion of Innis, McLuhan and Grant that there may be instances in which technology creates challenges that can only be responded to adequately by individuals also making moral judgements about their own technological activities.

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Notes

[i] As Grant states, "Perhaps [as moderns] we are lacking the recognition that our response to the whole should not most deeply be that of doing . . . but that of wondering or marvelling at what is, being amazed or astonished by it, or perhaps best, in a discarded English usage, admiring it" (1969a, 35).

[ii] McLuhan worked with Jacobs in the resistance to the expressway, which Jacobs recounts in *Who Was Marshall McLuhan? Exploring a Mosaic of Impressions* (Jacobs 1994, 101-102).