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Globalization and Technology: The Dual Discussion

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ABSTRACT

Globalization and Technology: The Dual Discussion

Michael Boyle

In recent years there have been two important changes among the myriad of political and policy initiatives that occur throughout the world. First, we have entered a new era in which national and foreign policy is no longer dominated by attention to monolithic Cold-War style opponents. This has brought about a new form of "globalization" and a push to engage the nations of the world as trade partners. Second, many commentators have noticed the ubiquity of advanced communications tools, most notably the internet. For the most part, however, these two new discussions rarely intersect in meaningful ways.

In fact, however, the drive to globalization is being fueled by the sorts of economies that are possible in a world in which such advanced communications tools exist. Likewise, the companies who have invested the most in building these communications tools also have a great interest in spreading their ubiquity: thus promoting globalization to an extent not seen in earlier portions of the century.

This paper has as its broadest aim to investigate how the two discussions are related. Making reference to the current popular and scholarly literature about the internet and about globalization, the essay describes how both discussions are weakened by the fact that although they supposedly describe revolutionary change, neither does so in a satisfactory manner. It is through the study of these two discourses and their relation to one another that the revolutionary potential of recent developments can be assessed.

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Introduction

The study of society, politics and policy has recently been profoundly influenced by the ascendance of two important ideas. It seems as if two previously marginal issues now dominate practically all discussion, on any issue. Whereas in the past, discussions on such things as social policy were only tangentially related to issues such as the balance of power or military preparedness, in the 90s two issues have achieved a significance such that they seem to colour all discussion on practically all political topics. The two important issues at hand are globalization and the influence of ubiquitous communications technologies: the internet. That they are twins, however, separated at birth but still necessarily attached to one another, seems to be set aside all too often and all too easily.

On the one hand, there is the constant attention that is paid to globalization. In enacting any policy or considering any position, political actors or groups must always consider whether or not the policy or position contributes to, or detracts from, the global competitiveness of their area of responsibility. There is no longer a vacuum in which issues are discussed without reference to the effects of decisionmaking on global issues. As well, international and other bodies are increasingly attempting far more intrusive regulations and protocols around issues that were once considered purely national or local policies. So, when the question arises about closing a hospital, building a school or revisiting labour policies, it is inevitable that

positions will be proposed with the simple aim of improving global competitiveness. Whereas once these issues could be discussed on their own merits, perhaps that is less so today in a world under the sign of globalization.

On the other hand, there is the constant focus upon technological questions in the discussion about issues of every sort, from education to trade policy to cultural politics. Technological innovation is seen alternatively as a panacea, a cure-all for our woes as individuals and societies, or as a demon that bends society out of shape to such an extent that it can never be set straight. Of course both views are unrealistic: technology is ever-present and ever-changing, but there is nothing inherent in technology itself that is either good or bad. That is itself a part of the problem that shall be discussed in the following pages: that the increased profile of technology in society has meant that technical and technological solutions are proposed for social or political problems, while it is obvious that social problems require social solutions; there is no panacea. Likewise, however, there is not necessarily a hand of the devil guiding the technological change we have been witnessing.

An important issue has arisen since these two discourses have begun to exert greater influence on the political realm, however, and that issue is the focus of this paper. It seems that most of the scholars and pundits who write about globalization don't often provide a specific account of how technological change influences and affects such political shifts. From another point of view, those writing about technology and its influence on society in

recent years rarely include any significant political or theoretical depth in their work, leastwise concerning global political issues. This was not always the case: Jacques Ellul, Marshall McLuhan, Harold Innis and others were all explicitly political in their writing. But more recently that political and theoretical component has been all but lost.

The problem is obvious, however: globalization and technologically-advanced communications systems such as the internet are two sides of the same coin. As political issues, one cannot be properly studied without reference to the other. That this has not, or rarely, occurred to date is an important issue that must be addressed in the discipline, for it is forced to rely on texts that date back about 30 years now—an era ago in this discourse.

The structure of the argument will be as follows. To begin, a discussion about the idea of sovereignty and the state and how it is being assailed will be engaged, to set the terms of reference for that side of the issue and to investigate it in some detail. Following that will be a theoretical investigation into the problems that are apparent in the current writing on society and the internet; cyber-theory, as it were. This discussion will pay specific attention to how the concentration on a purely technical revolution, not a social or political revolution, has influenced (or more correctly deformed) the discourse. In this section, as well, the terms of the debate from that side of the coin will be reversed, which is the beginning, in many respects, of appropriate cyber-theory.

Since much of the discourse about the internet and its impact upon society has focused on the internet's revolutionary aspect, following the section on the popular theories of the internet will be a section that revisits revolutionary theory in an attempt to frame the discourse on broader, more fundamentally and theoretically sound principles. Through the lens of sound revolutionary theory, then, the issues that attend both globalization and the rise of the internet take on a different sort of significance than they might otherwise, and this paper will engage these issues in a manner that has not yet been fully investigated in the literature, shedding light on how the historical uses of the recently developed technologies have already had a profound influence on our ideas of sovereignty, the state and will continue to do so in the future.

State, Nation and the Idea of Sovereignty

Sovereignty, the state, ethnic nationalism, self determination, self-government, national liberation—all of these political terms share a common heritage in the discourse of liberalism and the Enlightenment. Terms such as these describe concepts that have been used to different ends and by different groups and peoples for roughly 350 years since the Peace of Westphalia in 1648. Although these concepts are European in origin, their application has become global as the hegemonic culture of Europe and later North America spread itself to all corners of the world and succeeded in setting the terms of debate among social and political constructs that existed earlier. Aiding this viral spread of liberal concepts throughout the globe is the fact that, as political concepts tend to be, liberalism purports to be universal in its applicability and appropriateness for any political organization in any situation. Consequently, the world is organized such that the state is commonly seen as the lowest common denominator; there is no alternate way of mediating the relationship between groups outside the purview of the state system.

At the moment, however, the situation we find ourselves in is one in which the liberal state is an increasingly untenable single unit of analysis. People in many different fields are questioning the wisdom of the universalist doctrine of statism. In a succinct and widely applied definition of the state, Weber said that: "...a state is a human community that (successfully) claims

the monopoly of the legitimate use of physical force within a given territory" (78). To deconstruct the statement as a philosophical exercise is simple: to do so as a matter of political reality, to reconstitute the state in a way that will take the realities of world communities in hand in a genuinely constructive fashion, is very difficult. Likewise, to assert that political or other groups that are not states have a status similar to or equal to that of sovereign states in many respects is relatively simple to assert and to document with reference to history, especially the history of very recent days, but much harder to do as a theoretical principle around which to organize political structures in the world.

Yet it is increasingly clear that such a reconstitution and reconceptualization of nations and states must occur. Cultural boundaries fall daily as communications technology and the regulatory aims of states worldwide succumb to the persuasive promises of digital technology. State boundaries have always purported to be more static and impermeable than cultural boundaries, but the ubiquity of advanced communication technology has meant above all that people *en masse* have become increasingly aware of the differences between states, as between people(s). Whereas science has long since dispensed with the idea that it is a totalizing discourse, and no matter what economists might say it is apparent that economics and politics are inseparable from ethics and from theoretical concerns. Most to the point is that since the tools of information and data-processing that were once solely

in the control of élites have slowly filtered down to a broader range of people, those people now expect their beloved political institutions to live up to their word—their promise of equality, fairness and liberty for all—and are finding that not only do they not do so but that they cannot do so.

The aim of this section is to cast a critical eye upon the political discourse that has reigned supreme for so many years and to begin to develop a set of principles around which a new political discourse might focus. To put it another way, is the state-sovereignty lens the only one through which the issues that concern people worldwide in the 90s might be engaged? More importantly, it will be shown that a new set of principles has already begun to be asserted and has become dominant in many ways, which in turn sets up a situation in which potentially revolutionary conditions are set in motion. This is not speculation on the future, rather it is a theorization of past theory based upon changes that have already begun to occur, and that will continue to occur as time passes.

To begin answering these questions, I will enter into a broad discussion of the challenges that are currently faced by states and the state system, challenges that come from both the "supra-state" and the "sub-state" levels. The hope is that it be understood by the reader that a new conception of the state does not necessarily mean that an alternate utopia will result but that refocusing the debate will fundamentally change the platform upon which issues are dealt with, a platform that better allows for solutions that are both

reasonable and practical.

Before beginning this discussion, it is worthwhile to devote some space to propose working definitions of the terminology that will be used here. Words such as "state" and "nation" are political/theoretical constructs that, unlike "umbrella" or "dog" do not have a universally agreed-upon meaning. In this paper, I make no attempt to redefine the terms of the debate, but I do use the terms in a rather specific way. "State" I have already defined to some degree: I mean the Weberian liberal, rational political unit that exerts exclusive control over a specific territory within a legal framework established by a governing body. This is the meaning that we commonly ascribe to "state," and it is the political unit that international organizations tend to use as their basic institutional component (Gottlieb 131n2).

"Nation" on the other hand is a much more fluid term, commonly referring to similar units as states, but here referring more exactly to a cultural, linguistic, ethnic or other group of people who define themselves as a distinct community with relatively cohesive and consistent goals, at least including the goal to face the issues of the future together. Nations usually have a traditional homeland, although that they live in that traditional home is not a requirement of the definition I will use here, as will become important in the argument presented here. This definition is necessarily vague: the problems that we now confront stem from the fact that nations as distinct political organisms are barely recognized internationally except as expressed

within the context of a state. Nations exist within states, nations exist that are states as well, nations exist that have no state as such.

Sovereignty is also a very difficult term to define. It has been used by different theorists and philosophers in different contexts over the years, although it has come to be so tied up in the definition of the state that it is now difficult to unpack the term "sovereign state" (which relies heavily on the territorial nature of "states" [Gottlieb 15]) from the concept of sovereignty itself. "Sovereignty" as used in this paper refers to the expression of a right to make decisions as a group which carry the force of law for a specific community of people. In some sense it is roughly analogous to expressing government power, but it goes further in that the right to make governmental decisions can be granted by another body: sovereignty cannot be. Sovereignty derives from the fact that the individual in community abstracts a certain portion of his "general will... as a citizen" (Rousseau 141-) to the community, which thus possesses the legitimacy to express that will in the interests of the group. Using Rousseau in this context is somewhat problematic in that his formulation relies fundamentally upon the Enlightenment's radical individualism and a certain amount of conceptual gymnastics which are no longer in vogue philosophically. However his notion that sovereignty flows from the individual is useful in one very important way: that it cannot be granted by another sovereign but must come from the group itself. As Kirke Kickingbird writes (as a Native American nationalist), "Sovereignty is

inherent; it comes from within a people or culture. It cannot be given to one group by another." (46) Note also that sovereignty here is an active principle, one that must be expressed to have meaning.

With these working definitions established it is possible to begin the discussion about the challenges to the notion and applicability of states as the sole unit of analysis in international affairs. The territorially based state system that dominates the international political discourse now faces challenges from larger, supra-state bodies as well as from sub-state groups, who are often nations but are also other groups and individuals within traditional state borders. Both challenges clearly show that the concept of the state as it is currently formulated is flawed, one that fails to deliver on its promise to communities within a state's borders or beyond. As the world grows smaller (figuratively), as industry grows larger and as the effects of local decisions are increasingly global in the area they affect, it becomes increasingly important to deal with these issues in a manner that includes all states and to ensure that such local decisions are not reached to the detriment of others. Soviet (now Russian) nuclear power regulation, Brazilian (de-) forestry decisions, Japanese monetary policy and African or Chinese population control efforts are all issues that affect virtually everyone in the world, and it has been recognized (to some extent) by the international community that to allow such decisions to be taken without reference to their international implications is shortsighted in the least. Thus, to take such issues

in hand, international organizations have been convened in which to discuss and mediate between the interests of local decision makers and international states' interests. Although the success of these institutions (the UN for example) is debatable, their efforts point to the fact that there are no purely local decisions, that the state is not the only germane locus of decision-making.

The challenge to the State as the unit through which sovereignty is to be expressed is coming from international institutions most remarkably (ironically perhaps) in Europe. The gradual development of the European Community has lead to discussions within that framework that fundamentally challenge the notion of sovereignty as a "State-only" concept. Two forces converge in Europe to create a union that is strikingly different from the one that we knew, and one whose political principles are instructive. On one hand, the nations and regions of Europe are seeking and gaining local control and less centralized methods of solving local problems. On the other hand there are the EC proponents of a Federal Europe who regard the states and their claim to sovereignty as an obstacle to achieving their goal.

These not insignificant forces are joined in a common venture by the principle of subsidiarity "which requires that the Community and its institutions stay clear of decisions that are better taken at the local level and at the level of member states" (Gottlieb 16). New and constructive arrangements in each of these states often place a nation or region in the position of primary

decision-maker on an increasingly wide range of issues, primarily those concerning industry and trade, but also including such issues as education. Although the "United States of Europe" may be an exaggeration of the potential of such developments, anyway it is beside the point. Rather, Europe may soon be regarded as an area comprised of "multi-national organizations" where sovereignty does not necessarily correspond to their territorial or state boundaries on all issues—it is beginning to look like it is not a zero-sum game.

Subsidiarity is a principle involving the delegation of what people tend to think of as the sovereign prerogatives of a state to other groups, whether they be geographic regions or nations. This delegation of prerogatives is not complete—it occurs on a negotiated, piecemeal basis. Subsidiarity cannot be properly understood as the transferal of sovereignty to another body but rather as the supplementation of the sovereignty of states with a different kind of administrative unit. In the interests of promoting the supra-state group, in other words, we find that nations or regions gain sovereign-like decision making abilities, significantly affecting the concept of sovereignty in the states that make up the supra-state body that oversees the new jurisdiction.

Although the principle of subsidiarity is important, the main point to be raised here is that, as mentioned above, a significant form of autonomy of regional groups has been approached in the western European context. This is

different from the force of sovereignty as described above in that it is granted by the still-sovereign states that make up the community whereas sovereignty as such can only be recognized, not granted. It may be that granting limited sovereignty in one instance may grow or deepen into a fuller sovereignty as it becomes "natural" for a group to express itself in a certain manner and not through the state; it is unclear at this point how it might grow. What is most important about the European example is that the notion that the state (as sovereign power) is the only proper location of decision making is being assailed, due mainly to the practical opportunities provided by the larger community and certain geographic specificities. There are other challenges to the idea of the state as we know it as well, an important one coming from within states.

At the sub-state level, nationalist movements of many different stripes have been trying for many years to gain a voice of their own on the international scene, to varying degrees of success. In some cases success has come grudgingly, and partially, such as on the shore of the Baltic Sea where Latvians, Estonians and Lithuanians only managed to secure their voice—importantly, as states—with the utter collapse of the state under whose auspices they were subsumed for fifty years, the Soviet Union.

In other cases, success has been more difficult to achieve, for example in the case of the Indian nations in Canada, formerly sovereign and legally recognized as such historically (Alfred 195n6), but whose status as nations

that express sovereignty has been constantly eroded in the last centuries. The challenges posed by Native nations in Canada and the United States are beyond the scope of this study, but these too pose difficult challenges for the discourse of statism to deal with. In still other cases the potential for success has been opposed by mass deportation and genocide (now euphemistically referred to as ethnic cleansing). Even in the successful cases, however, issues of nationality remain that are impossible to consider in the context of statism and for which new solutions would be welcome.

A recent treatment of this subject, perhaps the best to date, is Losing Control: Sovereignty in an Age of Globalization by Saskia Sassen of Columbia University. Professor Sassen identifies three components of what she calls the new geography of power.

First, a new type of territoriality has developed. This new territoriality is characterized by two principles: the dispersal of the markets and business functions of firms; and the concentration of management enabled by electronic communication. The new territoriality is evident in that large areas have been set aside that are outside the normal regulatory regime of states, such as the case of the *maquiladora* zone in northern Mexico (8). Her point is somewhat different than the one made above regarding subsidiarity, however. For Sassen, states are not becoming irrelevant or secondary to other bodies under the sign of global capitalism. Rather, they are active participants in the development of the new regimes. Although states are altered in the process of

developing the new regimes and new geography of power, their role as catalysts and enablers of the change serves to reinforce their current position.

Subsidiarity involves the development of new layers of administration, hence a new calculus of power, within specific regions for the most part. What Sassen proposes is somewhat distinct from the idea of subsidiarity. It is not so much a question, for her, of instituting regions that straddle state boundaries who self-administer on certain issues. Rather, for Sassen the situation is one in which states create zones in which the regular laws of the territory do not apply in the name of the global economy. There is no mention of any special administration other than that dictated by the demands of the firms who use such zones.

Second has been the development of new legal regimes that enable the exponential growth of international inter- and intra-firm trade (12ff.). Sassen makes the critical point that what is commonly called 'deregulation' is actually a case of grafting new, business-friendly legal principles onto older national structures. It is not simply a case of removing legal requirements but of supplementing them with legal practices that energize international commerce. Most obviously under this category would be General Agreement on Tariffs and Trade (GATT), it's successor the World Trade Organization (WTO) and more recently the Multilateral Agreement on Investment (MAI).

The third component of Sassen's new geography of power is the

specific influence of the virtualization of economic activity. Foremost among these are the international currency markets, in which trades amount to over US$1 trillion every day (Sassen 21), far outstripping any national bank's ability to control rates of exchange. It is also clear that this third aspect pervades the other two—it is impossible to centralize the management of global companies without highly sophisticated communications systems.

What is most interesting about Sassen's study is that it takes into consideration elements of both supra-state bodies (such as the WTO) and sub-state actors, not in the form of 'nations' but corporations. It is this aspect of her work that is of extreme significance in the context of this paper: that these two levels of political actor in effect complement one another. Changes at one level influence and presage changes at another as individuals, groups, nations, states and other organizations adapt to ever-fluid circumstances.

There is another force that substantially weakens the case for territorially-defined states exerting sovereign control over the people who live in the territory. In fact, in many ways these changes are those that allow the influence of the changes noted above to occur in the first place. New communications technologies: computers as communications devices, satellite television and the like serve to allow corporations, individuals, communities and other organizations to determine their sources of information and communication flows independently of state regulatory bodies. These changes are still nascent, but it is clear that if states' power is expressed by their ability

to develop policies that have the force of law within their territories, any method by which that ability is so fundamentally challenged is politically significant. As described above, the concepts of sovereignty upon which modern states tend to be based rely on the delegation of a certain part of an individual's will to a government.

In the case of the development of new media of communications, I and my community have the opportunity to decide for ourselves what policies we wish to abide by, just as corporations have been able to do regarding their capital flows and management functions for years. Thus, it is possible to express my sovereignty as an individual directly on some issues, to make the choices I would make in actuality, not in some imaginary original position.

This is important in that it erodes the sovereignty expressed by the state in which I live. Concurrently, it also allows my self-selected community to (potentially) express a sort of sovereignty parallel to that expressed by the state. In the case of groups who are not self-selected (such as nations), it is even more evident that this is a significant change—this sort of expression of sovereignty is especially visible and (again, potentially) leads to unique possibilities for developing the culture of a group independent of the mainstream of society. Now those possibilities exist on a much wider scale than they used to, which fundamentally affects the status of state sovereignty, both as a concept that is useful in the world and as an actualizable reality in the late twentieth century.

It should also be noted that the growth of accessible communications networks has only recently trickled down to the level of individuals, but large organizations have enjoyed these tools for years. It is important that research be done into how the use of such tools is similar in both cases and how it is different. For if the changes (or threats) to sovereignty that arise from individual use of these tools are anything like those that have occurred since their application at the macro level, it demands close analysis.

Each of these examples of the manner in which the traditional view of territorially-defined state sovereignty is being assailed necessarily implies the others. A body beyond the state that, over time, affects the sovereignty of its component states requires that the sub-state nations or regions begin to make their own decisions in order to proceed efficiently. A nation within a state that wishes to express sovereignty does not exist in a vacuum, it exists among a community of other nations, states and other actors that play a role. This role only takes on greater significance when the state under whose umbrella the nation exists is diminished. Likewise, the mechanisms that are developing that allow communities to form their own policies after a fashion are being used within a larger context. All of these are issues are related in the sense that they all rely on the development of ever-increasing speeds of communication and of transaction. It is the dialogue between the different problems for state sovereignty that will produce a new philosophical vision of what sovereignty means to a community whether it be nation, state or another

group in society.

With these issues laid out, it is important now to engage in a study of the popular discourse about the internet. The relationship of the individual to the state is changing on an almost daily basis, as is the relationship of the state to other actors such as world bodies and multinational corporations. As such, there is a tremendous need for broad, philosophically sound discussion of the issues at hand. As the following section will describe, the current analysis leaves much to be desired.

The Popular Internet Discourse

The rise of the internet as a medium (or, more correctly, a group of media) that has attracted the attention of the public on ever-greater levels has been accompanied by a new and growing discussion among pundits and scholars, activists and geeks, politicians and capitalists of all types. Their writing can be found everywhere: in the New York Times and the San Jose Mercury News; in Canadian Business Magazine and Byte Magazine; in Nicholas Negroponte's Being Digital and Clifford Stoll's Resisting the Virtual Life. From the most conservative, old-school organ to the latest cyber-zine, everyone seems to have one subject to discuss: the internet.

For the most part, this discussion is not only poor but may actually be harmful to the development of an interesting, broad and challenging view of the implications of digital technology on society. At once the discussion spawns whole new sub-disciplines in academia (and, more aptly, blurs the lines between existing disciplines) and is being aggressively dominated by terms of debate that preclude any challenge to the (new) status quo, by those business interests that have not only defined the technology and used it for years but have themselves followed through with the debate they initiate.

As mentioned above, at the same time as this early discussion of the issues that are brought into focus with the rise of the internet as a commonly accessible, popular tool, there has been an ever-growing emphasis upon

"global competition" among both the governments who must enact policies and those writers and others who comment and (ostensibly) critique government in the interest of wide public debate. Nothing that governments do, it seems, is not coloured by their need to ensure that the "global competitiveness" of their jurisdiction is maintained and enhanced. The challenge of globalization has become the justification for any and all policy position, just as the Soviet Bloc (in the guise of Reagan's "Evil Empire") was in another time.

In the context the ubiquity of these two important topics for debate and the extent to which they now dominate much of the content of popular media, then, it is hardly surprising that the discussions about the "Information Superhighway" (a shockingly unfortunate term, as shall be discussed shortly) and "global competition" have overlapped to some extent. The goal of this section is to look at the foundations of a great deal of these intersecting discussions in the interest of developing both a critical stance regarding the shortcomings of this discourse and of charting a path towards what a more appropriate and useful discourse might "look like."

So, this is an attempt to engage a study of a new and burgeoning field, internet theory, in order to draw a stark contrast between that and the discourse that could, with care and deliberation, be brought to the fore. It is the discourse that exists in contrast with the issues that might be discussed that is the crucial issue. At the present time, there is a wide gulf between the

few interesting writers on the issues raised by the digital culture and the much more populous group of writers who have thus far attempted to come to terms with digital culture but who, in the words of the Duke of URL, "don't have a clue" (Anuff and Steadman). Although the last thing the world needs is a new Descartes or Newton who would attempt to develop a grand theory with which the entirety of this "new world" might be explained, the fact that virtually no one is even making the attempt hints at the poverty of the discourse. And it will be seen that this lack of theoretical depth points to a larger, more insidious problem: that the grand systems may have already been devised, and that most of the writers that work with these issues are (perhaps unwittingly) marching in lock-step to a drum that has been beating for many years.

This portion of the study will proceed in several ways. First, some of the more important tacks that have been taken regarding the repercussions of information technology will be discussed, not in order to come to any definitive conclusions about any individual writer's thought but instead to paint, with a broad brush, the current borders of the popular discourse. With this accomplished, I will continue with an analysis of the shortcomings of that popular discourse, with reference to two overarching concerns: that the discourse as it is currently framed trivializes and marginalizes the impact of the internet on the society in which we live; and that it overwhelmingly ignores the historical and theoretical context in which the digital world has

developed. Finally, an attempt will be made to show how a more appropriate approach could be framed, taking into account the historical and theoretical precedents that can lend a hand in the effort to develop a worthwhile and broad critical discourse on the subject of the internet and of the digital life.

The discourse about the digital life and its impact upon society is one that has been largely centered in the United States, and around a very few popular writers. In describing the current discussion upon issues that are raised by the internet I have chosen to focus on the popular literature for good reason. These writers have had a tremendous influence, in that the basis of the contemporary discourse is driven more by popular literature than academic literature. It may be tempting to simply not expect that the popular literature would contain the depth of thought of someone like Harold Innis or Friedrich Nietzsche, but to dismiss their work would be a dire error. After all, it is the popular writers who have taken airplane rides with US Vice-President Al Gore (as did John Perry Barlow) and who have the ear of Speaker Newt Gingrich, not (by and large) the academics or activists who deal with the same issues in a strikingly different manner.

The names to whom I refer are well-known and the points of view they promote have been accepted to a great extent as the cutting edge of thought about the issues that surround the internet since the first popular articles started being published approximately seven years ago, in 1990. People such as (but not, of course, limited to) John Perry Barlow (co-founder of the

Electronic Frontier Foundation and author of "The Declaration of the Independence of Cyberspace"), George Gilder (member of the Progress and Freedom Foundation, closely associated with Newt Gingrich; author of Telecosm), the ubiquitous founder of Microsoft, Bill Gates (in The Road Ahead), and Kevin Kelly (author of Out of Control, Executive Editor of Wired Magazine), have framed, to a great extent, the boundaries of the debate. Others such as Kirkpatrick Sale and Mark Slouka have presented dissenting viewpoints, along with Jerry Mander (In the Absence of the Sacred, Four Arguments for the Elimination of Television), Bill McKibben (The Age of Missing Information) and others taking a "broader" view. These writers have been joined by a plethora of people writing for all manner of publications since the internet has become popular, but the point to be made here is not that there are a great many different viewpoints or philosophies being discussed and developed, but that all of these are equally problematic. Whether Clifford Stoll is writing about catching a German hacker (as he did in The Cuckoo's Egg) or about how we must all step back and smell the flowers (as he revises his thought in Resisting the Virtual Life), he falls prey to the same (or very similar) mistakes in both cases, pointing not to a unique difficulty in his work but to the poverty of the whole manner in which the issues are viewed.

What, then, are the dominant boundaries of the current discourse about the internet and the implications of so-called information technology on

societies around the globe? It is a difficult question to answer properly, but notwithstanding that the popular writers seem to have a multitude of points of view, three features can be seen to form the foundation of most of the discussion that is currently taking place. These are: that the net signals a revolutionary change in society; that the development of the net will continue as it has begun for the foreseeable future, and although it may change in breadth and in technically advantageous ways, its essential characteristics have already been determined and agreed upon by all major players; and, finally, that information is the currency of the net and the flow of that currency is all-important. This is not an exhaustive list by any means, but most of the popular (and many academic) writers agree on these points, which informs the discussion about the global implications of networking in striking ways. I will very briefly expand upon each of these before continuing with a broader discussion of the problems that are manifestly evident, a discussion which will draw out further difficulties surrounding the current framework of the debate.

First, there is wide general agreement that the arrival of computer technology among the masses is a revolutionary development, signifying a clean break with past institutions that are ill-equipped to deal with the issues in an appropriate fashion. This "revolutionary" thesis is best exemplified by John Perry Barlow, whose articles all have to do with the spectacular disjointedness of trying to use old ideas and policies to regulate or come to

terms with issues that are now challenging the governments of the world. For instance, in his article "The Economy of Ideas: A Framework for Rethinking Patents and Copyrights in the Digital Age," Barlow makes an attempt to completely reframe the issues surrounding copyright and intellectual property in the context of digital technologies, an attempt that is quite excellent on its face but fraught with problems when critical consideration is brought to the work. Still, though, the idea that the technologies that now permeate certain portions of the globe are inherently revolutionary is one of the chief articles of faith among those engaging the questions at the current time, and is no longer (actually, it never was) the subject of much critical discussion in the limited context we are dealing with here.

The second idea, which flows naturally from the first, is that the revolution has already occurred in its essential forms: all that is left to do is to broaden the reach of current technologies (to promote access) and to further develop these so that the networks achieve sufficient technical superiority to enhance this broadening of scope both in terms of access and in terms of the material available to be accessed. Although there is much discussion of the differences between a coaxial cable network (i.e., cable TV) and a twisted-pair, switched network (i.e., telephone service), at base the discussion assumes that the networks themselves will continue to be symmetrical (i.e., allowing material to be downloaded and uploaded of material equally) under either (or any other) regime. Negroponte, for instance, writes about the dangers in being

stopped by the "bit police," regulatory bodies that would halt or hinder the further development of network systems (51-).

The third of the major arguments that are generally accepted (indeed, in this case it is also dominant in most of the "alternative" and academic works that I am familiar with) on issues to do with the internet and its impact upon society is that the key currency in a networked world is information and, consequently, that to "possess" information or to have access to information is to be rich in this newly-dominant currency. This might, on its face, seem to be the case, at least if statistics are to be trusted. In an early article on the subject, for instance, former US Ambassador to NATO Harlan Cleveland points out that although in 1955, 37% of the American workforce was engaged in the manufacturing, commerce and industry sector and 29% in the information, knowledge and education sector, by 1975 this distribution had already changed such that 29% were involved in manufacturing and 50% of the workforce were associated with so-called knowledge industries (186). Again, there is little discussion in the literature on the merits of the idea that information is king in a networked world—it is so fundamental to the discussion that it seems to be simply a bedrock assumption that is no longer worth discussing or questioning. This idea pervades all of Barlow's and Negroponte's writing, and in the case of the Progress and Freedom Foundation's "Cyberspace and the American Dream: A Magna Carta for the Knowledge Age," information is the core "good" that is supposedly at the

heart of all organization under their Tofflerian regime, just as land (for agriculture) was to the First Wave and industrial capital was to the Second Wave. Further, as a testament to the importance placed upon this last tenet, is that even those who would dissent from the dominant views and develop taxonomies of information in the interest of separating mere data from knowledge (or wisdom) are still so firmly within the tradition that they do not actually question the centrality of such issues, rather preferring to distinguish between and highlight the difficulty of acquiring truly "useful" knowledge as opposed to raw information or data.

The problems that arise due to the dominance of these three founding principles upon which so much of the discussion is based are many, and to develop a discourse which has any depth at all it is critical that these problems be well-identified and the ideas well-refuted. This refutation will progress along two distinct lines of attack. First, these foundational ideas will be discussed on their own terms, by looking at the important shortcomings of each of the three. Second, it will be argued that there are overarching difficulties that pervade all three, difficulties that both testify to the weakness of the current discourse and point to an ideological and theoretical foundation that prevents the current consensus from ever developing into a truly useful and worthwhile discourse on a global scale. In fact, it will be argued that it is useless to the point of danger if this consensus view were to continue to form the boundaries of the discourse on anything but a North American scale.

On the subject of the first of the foundational principles upon which much of the thought about the internet is now based, the idea that the development of the net is revolutionary and therefore must be approached in new and unique ways is not problematic due to the fact that it could not be the case, rather it is untenable for the simple reason that it has been neither well or persuasively argued. In fact, just the opposite is true: it seems that any questions that could form the basis of any theoretically important discussion of revolution in this context have been systematically discounted from the work that currently forms the basis for so much of the thought on these issues.

To discuss revolution is a difficult proposition, and although it might be easily argued that a revolutionary *technical* change has occurred—Barlow has argued that the connection of computers to one another in a way that allows a seamlessness of communication that is unparalleled by any other device or technique since language itself ("Is There a There in Cyberspace"; qtd. in Solomon)—that is a far cry from discussing social or political revolution.

What is it that is lacking? A contributing factor to the poverty of the discourse that currently exists is that almost every argument or criteria that must be made in order to claim that a revolution has taken place (or is taking place) is missing. In most revolutionary thought, reference is made to the historical context of revolution, to the contributing factors that precede or prompt revolutionary action, and to the manner in which the activity that is proposed can be seen as "revolutionary." Of course, revolutionary thought of

the sort I refer to here is fundamentally concerned not with changes in technique themselves but in the relationships between groups, individuals and organizations of many kinds, and the changes in relationships and structures that such changes make necessary. The lack of description or explanation of how technological change relates to societal change is the chief weakness of the current popular discourse, a weakness that is accompanied by important problems both conceptually and in terms of the implications of the evident weakness.

Certainly the point has been made that technology has changed, as stated above. However, it is clear that there is a fundamental conceptual problem surrounding the use of the term "revolution" in this context. This conceptual problem exists in that by relying on pointing out the technical changes that have occurred, those aforementioned proponents of the digital revolution engage in a strange sort of reification. Reification not in the usual sense, but in the sense that the real and demonstrable changes in technique are such that they are (appropriately in this limited sense) described as "revolutionary," language that is then used without question in the entirely different context of social revolution. That a technical revolution might signal or accompany a social revolution is certainly possible, as Marxist literature attests, but it remains that the argument regarding revolution must take pains to explain and describe the process by which a technical change has effects upon society that can properly be called "revolutionary." I will undertake

such an effort later in this paper, but in this literature, the dogma about the revolutionary character of the technical changes that have occurred must be taken purely on faith.

Such an error in equating a change in the communications technologies that are in common use with a more profound social or political revolution is not, in my opinion, simply an innocent case of some writers overstating the case for the technology or engaging in technological fetishism, although it manifests itself as such. In fact, it is possible (even probable) that it is not at all innocent but is instead a calculated, if subconscious, effort on the part of an entrenched power structure to co-opt the revolutionary discourse in such a manner that it can pose no real threat to that power.

That the new technologies are themselves the revolution might be a conceptual problem, but at the same time the very use of the language of revolution (and of frontiers, but that is a distinct case) supports the power structure to the extent that any further discussion is effectively silenced before it can properly begin. Especially in the American context, using the word "revolutionary" is to use perhaps the most extreme language available to describe a phenomenon. Thus, since the popular literature constantly refers to the "digital revolution," discussion begins from a seemingly extreme position that makes further and more in-depth and theoretically prescient work marginal at best.

It is for this reason that at the level of theory, the close identification of technological change with a social revolution that avoids any of the arguments that would be required to support such a thesis might be more appropriately thought of as an anti- or counter-revolutionary position. It is a position that supports the ruling hegemony to the extent that it not only arranges the discussion in ways that ask few questions of the élite but also channels the discussion in ways that can only serve to increase the strength or position of this ruling class. One only has to notice the striking fact that in the popular literature (and even in the Critical Art Ensemble's excellent book, The Electronic Disturbance) there is little question that the radically isolated, Cartesian individual is the only germane unit of analysis within societies, or that nation-states will continue to be the *de jure* unit of analysis politically, to understand the fundamental weakness of the "revolutionary" discourse as it exists at the present moment.

The second foundational principle of the popular literature on the subject of the implications of the internet on society follows closely upon the first. The idea that the revolution has already occurred in its essential form and must only be broadened so that it permeates all societies to the same extent that it does North American society is, then, problematic due to the very difficulties that are evident following the discussion of the weak concept of revolution that underlies most of this literature. There are other problems with this second principle though, problems which again point to the inability

of the current discourse to suggest appropriate solutions to the issues that are brought to the fore by the development of digital technology.

The most succinct arguments that are made in this regard are the proposals of the Canadian Information Highway Advisory Council, released in September 1995, and echoed in Johnston, Johnston and Handa's Getting Canada Online: Understanding the Information Highway. On the whole, the argument is begun by statements such as this:

> The information highway will unquestionably change how we function as a society. It can enrich the lives of all Canadians. It can strengthen the entire Canadian economy. Domestically, it can improve the efficiency and service delivery of businesses and organizations. Externally, it can boost Canadian businesses to expand their markets and increase their competitiveness nationally and globally.... (14)

There are so many assumptions contained in this statement that it is difficult to settle on one particular point to begin a critique, but such utopian comments are legion in the literature on the subject of the development of the digital life both in the local and the global context. The issue at hand is that the discourse seems to hold that the current form of the internet is the one that will be the focus of all development in the future, worldwide. For to be able to be engaged by Canadian businesses to enhance their international markets, the network that will be known as the Information Highway must be one that interacts with that which currently exists: an open, symmetrical and universal

network that spans the globe.

On the surface this poses few problems. Open networks, in theory, allow any and all developers to engage the hardware for their own purposes and to their own ends without discrimination, a laudable goal that seemingly allows for a remarkable freedom of application development—a network that can used by individuals at their own discretion. In fact, though, there are two distinct problems with the view that the current networks must only be expanded in order that the great benefits we (in North America) have accrued might take root elsewhere, one theoretical and the other practical. The first problem is that the universalism privileged by the view that if networks are only extended throughout the world in the way that they have begun to extend throughout North America is such that it prevents other ways or methods of engaging the technology based upon other, more local principles. In the light of the weakness of the revolutionary ideals that I described above, this is indeed shocking.

The second difficulty is a more practical one: it is not immediately clear that the network architecture that is currently available will in fact become the Information Highway of the future; indeed there is significant evidence pointing to the fact that it will change fundamentally if legislation that is being considered in Canada and in many states in Europe becomes law. The case of the United States must be instructive in the context of any discussion of the internet— and it has already passed legislation that paves the way for

business combinations never before allowed, the Telecommunications Act, 1996. American communications companies have always been strictly regulated regarding ownership and public oversight, as is the case throughout the world. In that context of heavy regulation they still managed to become some of the most profitable firms in the world. Now that their resources can be legally pooled to strive for common goals, it is clear that caution is the watchword of the day.

The first problem is one that is best joined with reference to the idea (presented above) that the current power structure is the real beneficiary of the fact that the "revolution" is defined and explained in such a theoretically poor manner. For if the power structure in North America is strengthened by the narrow definition and understanding of what the digital revolution entails, it follows that extending such principles globally is first and foremost an effort to promote a system that will ensure that the North American élites who have defined that revolution must continue to do so in every other area of the world as well.

Thus, if all that is required in order to reap the rewards of the information age is to extend the networks to all corners of the earth, along with it must be extended a North American, consumer-driven social, economic and political structure that takes little into account but the continued dominance of those already holding power and the complicit institutional structure that nominally organizes that power. Since the

"revolution" that is to be extended can be seen to be profoundly counter-revolutionary in light of the fact that few of the questions raised by the advent of digital technology are actually dealt with, the extension of the networks in such a manner will ensure that an alternate discourse not arise anywhere else in the world either.

The second, and more immediate, issue is that it is not at all clear that the Information Highway that will be developed is one that is similar to the closest example we now have of it, the internet. In practice, the American legislative agenda has clearly been one that is interested in shutting down the potential for the systems to be symmetrical and open, as shown by the well-publicized attempts by legislators to enact decency laws that would apply to the internet (such as the recently-overturned Communications Decency Act, part of the Telecommunications Act of 1996) and to control the dissemination of information (i.e., the International Trade in Arms Regulations that prohibit the export of cryptography software, algorithms and information, or Canadian content regulations) on the network that may be contrary to "national interest." There is a synergy between governments who take a paternalistic attitude towards their citizenry and advertisers who must guarantee that their product is viewed by a quantifiable, predictable number of consumers, a synergy which could profoundly affect how the networks develop. If the definition of what the networks involve and how they functions shifts in North America, the fact that it is primarily a North American discourse that is

the basis for the development of the global dialogues ensures that these too will shift.

Likewise, there is a tension evident between the interests of individuals who would use networks and the corporations that control them. As mentioned in the first section of this paper, these large firms have used advanced communications networks for many years—they are a large part of what has driven globalization itself. Although the fact that individuals can now use networks in many of the ways large firms have, there is nothing to support the idea that such companies are interested in having individuals and small groups do so. In fact, as will be described in detail in a following section, this is perhaps the primary cleavage around which the discourse will develop in coming years.

The third of the contentious issues that acts as the foundation of much of the popular discourse on the challenges and opportunities posed by the development of the internet involves the very nickname it is given (The Information Superhighway) and the resulting weight placed on one aspect of the technological developments which give rise to the whole debate: the question of information as the currency of the digital world. The primacy of information to the current discourse is generally unquestioned, and everyone seems to speak of the Information Highway without any thought to what the implications of such language might be. According to the popular literature (and in Canada, the official policy documents), what this so-called revolution

is bringing to the fore is the development of a knowledge economy that will supplant the older industrial or agriculturally-based societies. In Getting Canada Online, the authors mention that one of the great achievements of the current attempts to develop the networks of computers that form the internet is that great amounts of data are being stored (as they have been for years) and furthermore that these databases will be available for wide use, thus providing Canada with important economic benefits (32).

There are tremendous problems with the idea that knowledge or information itself holds such value that will have the effect of accelerating or providing the impetus for a revolutionary change in society. These problems have mainly to do with the weight given to information at the expense of its twin sibling, exchange, but also to do with the fact that the inordinate weight given to information serves to obscure some of the most important and interesting issues that could have important impact upon the development of an alternative discourse regarding the digital life and the networked world. That the obscuring of the issue that arises when information is privileged seems to be closely related to the lack of context and the lack of a proper historical accounting of the history of electronic communications simply strengthens the idea that information itself cannot and should not be given the priority it has been given when theory is brought to bear upon the questions with which we are trying to deal.

The connection between information and exchange is a question that

has been raised well by Barlow. In his article "The Economy of Ideas," he makes the point that information only has value when it moves, that idle information is essentially valueless. He even goes so far as to state that "information is a relationship" (89), which is an interesting and important point to understand. To comprehend information as a relationship, for Barlow, is to do away with the idea that the production of knowledge is valuable in the same sense as manufacturing steel adds value to the raw materials. Knowledge cannot, unlike steel or other manufactured goods, be tangibly assessed except during an exchange, so the relationship is the only "space" in which the value of information can properly be seen to exist. On the surface, then, it would seem that in this case the popular discourse has made strides towards an important re-definition of the principles upon which the new world of digital exchange will be based.

The most important problem with his point, however, is that it does not go far enough in rethinking the attribution of value in a so-called "knowledge society." Barlow says that information is a relationship; one might turn that around and say that relationships are information. It is with this turn that the most interesting issues arise, and it is these that are the critical ones to develop if a theory of the societal and global impact of the internet is to be developed. It seems trivial, but the implications of stating that relationships are information go quite deep, in that in Barlow's formulation there is still an emphasis on providing discrete bits of information for another to consume, as

it were. Rather, if a relationship is information, there is no producer, no consumer; there is only the process. Thus, it is the process itself that must be maintained and improved above all, which is important in that the communication that results require that the network take on certain characteristics, ones that are not necessarily present when a relationship between a producer and a consumer still obtains. Exchange can occur right now with great efficiency over certain networks—cable TV springs to mind immediately. In exchange for a certain program (or menu of channels) you give the provider of the service a certain amount of money. A relationship exists, even in this case, but it is hardly what one would call a relationship that will shake the foundations of society.

On the other hand, if relationships were at the forefront of the discussion not the information that they rely on, it becomes far more interesting: a situation arises in which both parties must have the ability to communicate freely with the other, on their own terms. In this case, then, the interesting and critical fact is that relationships must be studied in order to come to any policy or theory regarding the internet, since it is these that form the most vibrant site of action and thought divorced from old producer/consumer contacts. Thus, information itself is not nearly as interesting as the relationships that occur, and theorization would be more appropriate to the task of dealing with the networked world if this were explicit.

There is another issue that should now be raised regarding the

development (or the lack of development) of a vibrant discourse about the internet and its impact upon society. In the critiques of the dominant discourse presented above, it is clear that the very foundations of that body of work are ones that bear serious investigation and critique if one is to attempt to move towards theory that deals with the questions at hand in a manner that exhibits greater theoretical depth. However, even engaging the critique of the fundamental principles that seem to form the basis of the popular discourse in the North America in the manner attempted here is perhaps to make a similar error to that made by those who have defined the revolution in the narrow terms described above. The problem that was identified was that the theory that is currently dominant is theory that equates the technological change (the internet) with a social revolution in a broader sense, a conceptual problem that can be assessed by dealing with this popular discourse on its own terms, so to speak. It is possible, though, even probable, that there is a whole other level of questions that arise not out of studying the principles that found the debate on those terms but rather rethinking what is the significant technological change that gives rise to the questions in the first place, and more importantly asking what is the context (historical and theoretical) of networking both in North America and elsewhere. There are several and diverse theorists and academics who seem to be doing just that, after a fashion, and in so doing are dealing with the issues in a way that the popular discourse cannot even approach.

This approach to studying the issues that seem to be on the tip of everyone's tongue is interesting in that it refuses to accept as real or true the conclusions that seem to be so easily reached in the popular discourse, because before reaching any conclusions there is an attempt to develop interesting threads of meaning that have nothing (or little) to do with the obvious technological change, having more to do with those questions mentioned above, such as the relationships that exist between people and the world they live in. Also, if relationships are important, it becomes critical to remember to study the similarities and differences that can be seen among people in different places or localities.

The historical context must also be considered in every case, but without nostalgia for a time disappeared. In this particular case, the ascendance of the internet, the context tends to be seen in very limited terms, for most people dating back only to the prehistoric (in terms of the internet) days of the late 1960s when the research project that spawned the entire network began. In fact, though, as I have stated a number of times in this paper, it is very important to remember that personal networking is a latecomer to electronic communications. Banks and international organizations have used networks of different kinds for years.

What are the different impacts of that fact upon the situation in which we now find ourselves? Can this contribute to a description of a "revolutionary" situation that takes more into account than one technical

innovation? What changes in society have occurred since the development of a similar sort of technology to the one that we now consider? Although we may have decided that it is a mistake to confuse purely technical revolutions with social and political revolutions, that does not mean that they are insignificant, just that care must be taken to ensure that the broad story behind the societal changes that are evident be considered in relation to those technological changes. Other interesting questions that must be asked have to do with such issues as class and race and nationality, especially since McLuhan (who is largely ignored or paid only lip-service) thought that we were on the way to a global village, while the evidence points to a markedly different reality.

To conclude this section, it has been shown that although it is true that there is a lot of discussion about the issues that surround the internet and its impact upon society and the globe, that when one looks closely one can see that the discourse is one that at best ignores most of the significant questions before us in favour of the most recent and most "magical" changes in technology that we now have at our disposal. That such a focus may perhaps be not only too short but also be a focus that actively supports a ruling hegemony is only rarely discussed, if at all. As we have shown, this conclusion is one that can be reached without a tremendous amount of difficulty, however, to do so is to gaze into a mirror whose reflection is not always flattering. It is nevertheless true that what the mirror reflects must be

accounted for, whether in word or in deed. If a more theoretically significant discourse cannot be developed we are all the poorer for it.

Revolution Revisited

Theories of revolution provide an especially relevant contextual framework within which to discuss the changes that confront us in the late 90s. It is clear that the traditional theoretical foundations are insufficient to explain either the new economies or the course of the change itself. How, for instance, can theory which begins from the idea that people naturally pursue their rational self-interest (or the closely related variations on this theme) hope to explain an economy in which my selling of something doesn't deprive me of its later use, as Barlow has argued? Further, it is clear that it is not merely "change" that is occurring. Although technical development does not itself signify revolution, it can go hand in hand with such a phenomenon—and so the social and historical context must be investigated within a sound theoretical framework. If the relationship between the individual and the state is being completely overturned, as has the relationship of states to one another and to other global actors, then how and along what lines this change is occurring is most germane. It remains that theory can inform the discussion; however, it is only with theory that specifically attempts to deal with revolution that this is worthwhile.

Although many of the problems that exist for liberal and other modern theory exist also for much of revolutionary theory, it remains that these theories, in placing emphasis on flux rather than stability, are a much more appropriate starting point for theory in this context. In dealing with situations

where, as Hannah Arendt described it, "...the course of history suddenly begins anew, that an entirely new story... is about to unfold," (28) it seems inappropriate to use the foundational principles of the old 'stories' to explain events. Whatever revolutionary theories that we may use: whether they are the views of Hannah Arendt or Abbie Hoffman, Frantz Fanon or Antonio Gramsci they would be bound to inform a situation in which the most fundamental relationships in society are changing better than an alternate choice might. It is for this reason that we shall bring the Gramscian ideas about revolution to the fore as a way of engaging the discussion.

In his writings from a fascist prison in Italy, Antonio Gramsci contributed a great deal of fascinating and prescient thought to the Marxist tradition. In the writing of one man, we see a profound redefinition of the Communist Revolution, and we have the development of theory with which to understand revolution in a completely new light. Although a Marxist evaluation of current trends can be taken too far, this tradition is one that provides a great deal of insight into both the stakes of the decisions that are taken in the 90s and the specific decisions that might be made.

In reading Marx, it is problematic as to how, specifically, the revolutionary movement will develop. Marxist theorists, especially those writing at and around the time of the Second International, all tried, to varying degrees and with varying success, to develop this aspect of Marxist theory. According to Lenin, for instance, the movement must be marshaled by

a professional, central and secretive Vanguard. For Gramsci, a theorist who came to the fore a generation later than Lenin, the revolution cannot be led by a Vanguard Party or the spontaneously- and self-organized, politically-active proletariat (Rosa Luxemburg). Rather, although the party had to be strong (Gramsci was, mistakenly in retrospect, considered a Leninist), the main goal of the party was to challenge the chief method through which the ruling class cemented its domination.

It is here that Gramsci departs from contemporary Marxist theorists, for he had a much broader view of how the dominant class in society (the bourgeoisie) asserts this domination. For Gramsci, the potential for violence that the state possesses and simple economic alienation of the proletariat from the means of production are insufficient to explain the domination of the bourgeoisie. Instead, it is the fact that they control the language and the cultural, social and political expression of the entire population, that they define the hegemonic culture of the nation, that explains not only the domination of the class but the stability of the bourgeois state. Therefore, by redefining the ideological (cultural) context of the workers' lives in terms that are opposed to the reigning hegemony—by creating a counter-cultural hegemony—the party achieves revolution by dint of its very existence as a party engaged in revolutionary praxis.

It is clear that for Gramsci, although the revolution would occur of necessity (he was not a revisionist in this regard), the process by which this

would occur is of key importance. The process, in fact, may be seen as the key element of revolutionary activity. It was not enough to overthrow the political apparatus of the state, since if that were the focus of activity, the culture of the previously dominant class would remain; in other words, the substantive means of domination used by the bourgeoisie would continue to exert its force on society. The important activity of the revolutionary party occurs at a much deeper level than that of changing the state structure itself.

The revolution occurs as the counter-cultural group (Gramsci's modern Prince), "revolutionises the whole system of intellectual and moral relations..." (Prison Notebooks 133). To do so means to develop alternative means of communication, activity, behaviour and morality, because it is "...through concrete individual effort and not through a process of destiny extraneous to individual people..." (*Cultural Writings* 401) that a culture finds root in a society. And, in a characteristically roundabout argument, as the dominant class "maintain[s], defend[s] and develop[s] the theoretical or ideological 'front'" (389) that sustains it, so must the counter-culture actively promote the process of overturning that hegemony. Using current language, one might say that the counter-cultural organization must 'rewire' or 'hack' the fundamental relationships in a society as a precursor to dismantling the formal state apparatus itself. For Gramsci, this counter-cultural movement actually *is* the revolution in a profound sense. The state structure is supported by the hegemonic class to the extent that when that class in no longer

dominant, the state will wither away. This is an extremely important redefinition of the 'moment' of revolution, one that dispenses with the vulgar and simplistic notion of armed revolt in favour of a much more subtle analysis of how power is wielded and hence how it can be overthrown.

It is not terribly far-fetched to think of the current situation in Gramscian, revolutionary terms, and in fact to do so shines an interesting light on the philosophical and ethical aspects of the issues we are faced with. The revolution in which we now find ourselves does not strictly follow the Gramscian notion of revolution, in which one (communist) party develops a counter-cultural hegemony, in that there are two *competing* counter-cultural groups—notwithstanding the fact that one is much further along in the development of its hegemony. These will be described in detail shortly, but suffice it to say that the positions that they are staking out rest on fundamentally different ideas of the individual, of freedom, of the state and of the relationship between the freedom of the individual and the prerogatives of private property.

As Gramsci argues so persuasively, it is not precisely the relationship between the state and the counter-cultural group but the relationship between the group(s) and the individuals in society that is at issue. Both of the groups (classes) proposing their counter-cultural agendas in the 90s will (to depart from Gramsci, although this is a problem for him) act within the old state structures to varying degrees, but this is simply one aspect of their attempt to

get to the true heart of revolutionary change: the morality, ethics and habits of individuals worldwide. Just as an individual's ideology tends to be defined by the dominant class and therefore supports the state, it is when the ideology of individuals becomes revolutionary that the dominant class becomes obsolete and the old structures that supported it fall away. For the most part, the competing counter-cultural view(s) work within the state structure to the extent that such action can improve (and has been improving for years) their position those states.

Saskia Sassen (as described in an earlier section of this paper) makes powerful arguments based upon thorough research about the relationship between states and the global capitalists who, through the virtualization of capital have fundamentally altered the idea of sovereignty as it existed in an earlier era. Through the lens of Gramscian theory, however, it is evident that although states have been more than complicit in these changes, perhaps this is simply the latter days of a long counter-cultural revolutionary movement, and that the so-far complicit states are indeed more threatened than she concludes.

It is because counter-hegemonic groups have learned to use—and in fact rely on—the state structures that government structures in Canada play a vital role in the continuing development of counter-cultural hegemony even as they sustain the older hegemonic principles upon which it was originally founded. There are two specific forms that this takes. One, governments

mediate the relationship between the individual and the counter-cultural groups in their role as regulator; and, two, the government has a role in determining the direction of a changing national culture in their role as policy makers. Remember, however, that after Gramsci, culture takes on an entirely different significance in a revolutionary situation. Regulation (and all other) policy development takes on one character within the context provided by the hegemonic culture of a particular class. It is a peculiarity that the groups who now vie for the predominant class position have traditionally relied on the policies of the state for their position in society. But it is a peculiarity that demands much closer inspection when this policy development in effect defines the terms under which a fundamentally different state structure will grow. With this in mind, it is necessary to further define culture and to develop a notion of culture in this revolutionary context.

To define culture is a difficult proposition. It seems that to define culture, especially in Canada, is really to set out what it is not, rather than to propose a positive definition of what it is. We try to define Canadian culture in terms of what it is: the Royal Winnipeg Ballet or the Cirque du Soleil; Neil Young or Rita McNeil; the Two Solitudes or a cultural mosaic; Robertson Davies or Douglas Coupland; W5 or Street Legal; Saturday Night or Shift Magazine; Hockey Night in Canada or the Calgary Stampede. When we do this, however, we fail every time. American CD's consistently outsell Canadian ones, Garth Drabinsky is only really successful when he takes over

the Great White Way, and Roseanne is as much the voice of the Canadian underclass as American. So, we take the only recourse available: to define Canadian culture as "Like American, but Not American" culture. That this occurs with such regularity is based on two fallacies. The first fallacy involves defining culture in the narrow, institutional terms that equate culture with content. The second problem lies in thinking that culture can be tied down, defined and objectively identified.

That attempt at defining culture is not precisely what we are getting at here. Such a definition is an attempt to define one specific culture, not culture itself as an idea separate from one particular expression of culture. In defining one specific culture, what is really being defined are the cultural institutions of the hegemonic class (in Gramscian terms). It is clear that if we are in a time of revolution, in a time in which a new hegemonic class (and hence a new culture) is beginning to express itself as the dominant one, we must look at culture in a much different manner. Furthermore, such a turn is significant to the extent that the very shape of the changes that are being experienced themselves demands a different formulation. In an era when relationships as defined by the exchange of information are the critical ones in society, such things as culture are even more important. We must begin to look at culture not as a set of institutions through which the old 'truths' were defined but as a process by which individuals understand themselves and express themselves as active members in society.

There is support for this sort of definition in Gramsci's writing. He writes:

> I give culture this meaning: exercise of thought, acquisition of general ideas, habit of connecting causes and effects. For me, everybody is already cultured because everybody thinks, everybody connects causes and effects. [...] I'll make myself clearer: I have a Socratic idea of culture; I believe that it means thinking well, whatever one thinks, and therefore acting well, whatever one does. (Cultural Writings 25)

Everybody has a culture, certainly, but the specific form that thinking or acting takes is defined, in most cases, by the hegemonic group. Gramsci writes of action and thought in the broadest terms: all thinking and acting are cultural expressions. He writes of the theater: "the practical expression of the theatre as a whole is a means of artistic expression." (Cultural Writings 68) What he is getting at here is that organization and the ways that groups are organized—and by extension the ways that individuals in groups communicate with one another—is the culture of a society. The actual form that this takes is important, but it is a secondary issue. What defines the culture are the ways that people act in society, the ways in which they relate to one another. In other words, culture is best understood not in terms of its concrete expression—art, theater and music, for instance—but as the process through which these are made and the subsequent communication that results from such particular expressions of a culture.

Culture as a process, or culture as relationships, is a compelling way to look at the issues that are the heart of the Canadian policy discussions about the internet. Following Gramsci, it is less important to think about the artifacts of a culture than to think about what it is about these artifacts that is evidence of either one group's dominance or another group's ascendancy. Further, it is most interesting to look at how a specific cultural artifact (for instance, a television program) is an example of one particular definition of a national (or of a class, ethnic, racial, local) culture and how this is so. Culture is no longer a specific group of products that share definable characteristics but a process through which certain types and patterns of communication are both encouraged and sustained.

By separating cultural artifacts from the culture itself, the different definition or philosophical location of culture is made much more obvious. A cultural artifact is certainly a part of any culture—but it is not the entire content of a culture. Even if all of the cultural artifacts were identified and listed according to some canon, their sum would not be the culture, because a single individual act of communication—the exercise of an individual choice—is a significant cultural artifact in the sense we are interested here. This separation means that to discuss cultural policy only in terms of the artifacts of a culture is to narrowly define the concept, and is to end discussion before the really important issues are raised. A significant problem arises, however, quite quickly when the artifacts of a culture are separated

from the notion of culture itself. If culture is ineffable, as such a definition implies, then it is difficult to deal with cultural issues in any real, operational, policy terms. A discussion of the relationship between culture and cultural artifacts will serve to make this relationship, and the ways that we can deal with culture as a concept, both clear and meaningful for actual policy discussion.

Culture as process, the sense that is proposed here, is like calculus. In high school calculus, it becomes clear in the first lesson that a formula doesn't lead to a specific answer. Rather, the correct response to a calculus problem is that the equation approaches zero, or three, or whatever. Culture may be understood in a similar way. When looking at culture, a specific cultural artifact is interesting to the extent that it is an example of a specific cultural relationship—an organic, ever-changing process. If culture is viewed as a relationship, then it can only be defined tentatively, with the understanding that it is constantly modifying itself and being modified. The artifacts are significant to some extent, but it is, as mentioned above, the process through which these are developed and those that follow that are of key importance. Therefore, to discuss culture is to discuss how particular cultural artifacts in society contribute to a culture that is constantly changing and developing. The role of the policy making body is not to determine which specific cultural artifacts are to be promoted but to institute policy that will allow cultural relationships to continue to develop.

In dealing with culture in this way, we may develop a strikingly different view of what cultural policy might be forthcoming and of evaluating the goals of current policy. Take the example of television, for example. If a Canadian program is one that fulfills certain benchmark characteristics (i.e., that it was produced in Canada, with Canadian funding, Canadian talent, a Canadian script, etc.), and it is the current policy that broadcasters will receive some consideration if they air that program, we can see that by producing a show that lives up to these characteristics, broadcasters will gain certain advantages (even if these are just meeting a quota, it allows them to keep their license and so is advantageous). It is implied by the policies that support this type of formula that this improves or sustains Canadian culture. Therefore, producing such a show is seen as 'good' in some sense by the policy making body and is promoted by them (in this case, the CRTC). This is not necessarily lead to the goals that are sought, though, as far as David Ellis is concerned. Even though a show meets the criteria of 'Canadian-ness,' he says, "content quotas have given us sham Canadian series like Top Cops, the American-style reality series..." (176)

Ellis stops short of proposing that Canadian culture (or any other culture for that matter) cannot or should not be defined in terms of its artifacts. If, however, we look at culture as a process instead of culture as a product, we see in the case of the television program that the traditional criteria for defining its cultural content not only do not work, as Ellis

suggests, but that they cannot work. Thinking about culture as a process implies that a particular expression of a culture cannot be either 'good' or 'bad'. Rather, each expression is significant in that it is both an exemplar of previous cultural processes an reference serving to contribute to the range and types of expressions that will tend to result.

As far as television is concerned, all programming confronts the viewer with edited, highly subjective material. The medium dictates that the viewer is free to judge the program on whatever terms she or he likes, is free to turn the channel or to turn off the TV. The viewer might bring a critical perspective to the program, or might lose him- or herself in the images and sounds as presented. The viewer confronts the cultural aspect of the material based not on the content of the program but on the entire process by which it was created and the means through which they may respond. Where policy becomes important, therefore, is not in determining what the viewer will watch but how it was produced, how they will watch it, and what means of expression are available to them after (and while) a particular program has been presented.

Notice that in the previous statements it is the viewer who is at issue, not the country of origin of the program. Television, as a 'passive' medium, implies subjectivity. No matter how hard the advertisers and music video producers (to use a redundancy) try, the viewers may still choose their reaction as they please. Likewise, culture as process implies subjectivity in

that it is the action of each person that contributes to the whole of the culture. Thus, it is not as important to judge the content as it is to judge broadcasting as a medium, as a process of communication itself. All communication results in a reaction of some sort. It is the reaction that is cultural, and to which cultural policy must be tailored. In the case of television, the problem is not too difficult: the medium of response is limited and is predominantly local (i.e., constrained to the living room) in breadth. Alternatively, the viewer may write a letter to the producer or distributor, or (more commonly) vote with his or her feet and not watch anymore. In this case then, the origin of programming is only culturally interesting to the extent that the reactions are made by Canadians, and what each of us does in reaction to programming, whatever the origin, is the culturally significant factor that must be addressed.

As Mark Surman argues very well, this is where policy has failed to engender a truly activist Canadian culture—for him, predominantly in limiting the access and importance of community access channels. Of course, it is doubtful that community access channels could ever challenge the large networks, but it is the fact that policy dictates who may broadcast and on what terms they may do so that is significant. For the viewer, policy that encourages Canadian content may be acceptable in that it dictates that a certain amount of the Canadian response will be towards programming that originates here. But true cultural policy will go further than that, in encouraging a different type of reaction, perhaps by giving priority to a Canadian media-literacy agenda, or dictating that letters to the producers of

programming are presented in a specific forum for comment and critique. In the context of television, these may not be deemed appropriate. After all, television still allows a relatively good deal of freedom of response, in that programming itself provides only a limited amount of reaction within the content of the programs themselves.

When the programming becomes interactive, a significantly different situation arises. This is that the programming begins to not only suggest but to constrain the appropriate reactions of the viewer (user). Whether it does so through buttons on a converter or some future Information Superhighway is unimportant; in any case, the response of the viewer is controlled by the producer of a program, and the specific trail down which those responses lead the viewer (user) of such a program ensures that the event is so individual that post-event discussion with other users will be limited. In this situation, the cultural significance of the programming is significantly altered, in that it is not through the diffuse reactions of private individuals that it contributes to culture but through choices that are limited in advance by the company who makes the program.

In a time when sweeping changes are occurring in the field of communications and in the type of relationships that communications technologies are fostering among individuals in society, it is no longer appropriate to deal with culture in a narrow fashion. At one time, as mentioned above, it may have been appropriate to deal with cultural issues in

a narrow, culture/product manner. It worked to some extent, and given the context (i.e., that the most important means of communication tended to be such media as broadcasting, publishing, etc.) it may have been the only policy option. Now, however, the situation has changed drastically. The media that are being introduced are such that they may affect the cultures of nations in ways that broadcasting never could. The choices that are made by policy makers are such that they will either ignore the deeper cultural significance of these changes (in which case the changes will still occur, but with no contribution from policy makers), or they will strive to take the important cultural issues in hand and provide some framework that serves to deal with the technological (cultural) changes in a realistic and useful manner.

As we shall see, in either case the role of the state and the options for future policy development will be severely limited. But by making an effort to mediate the direction in which the new technologies will develop, the policy making bodies will provide leadership that will have an impact on the most fundamental relationships between individuals in society. The next section, about the competing models of the Information Highway, will make it clear just what the choices may be.

Two Models of the Information Highway

The Information Highway has been proposed as the panacea of the information age. Its development has been embraced by governments and individual techno-fetishists, by activists and corporations, by environmentalists and industrialists, and by academics and marketing managers alike. Everyone, it seems, has everything to gain and nothing to lose as the infobahn grows and supposedly revolutionizes the possibilities for communication enjoyed by each and all humans worldwide. As stated above, however, and made apparent by the discussions of culture and revolution, it is necessary to take a critical look at just what the infohighway will look like, who is building it, and whose interests are being served as it is built. Looking at these issues will show very clearly that there is not one infohighway but two, and that they are now competing, in the sense proposed above of the competition between counter-hegemonic groups, to determine the course of this information revolution.

The two competing models of the Information Highway are very easily, and understandably, confused. The infohighway (a term we will dispense with soon) is still an infant. We can look at its parents, and we can listen for its first words. We cannot, see exactly what it will look like as it grows. We can also look at the developments in other, related fields (such as the use of networks by large companies) and use the lessons taught there to inform the discussion.

In any case, there are now two distinct groups who consider that they are developing is "the infohighway," and to understand and to realize the significance of this is critical at this point. Caution is advised, however, for with either vision of the infohighway, with either group hoping to attain cultural hegemony, the state as we know it will be changed in a fundamental way, as we have already seen has been the case regarding the drive to globalization. Whether what remains is a state retained for convenience, retained as the nexus of the cynical competition between radically disempowered individuals or a state that is simply the convenient home base for hyper-individuals who only need it to the extent their bodies need to occupy a small piece of real estate, what we now know as the state will cease to be.

Using the questions raised above, it can be seen that in the case of the infohighway, the two models yield strikingly different views of what it will look like. These are not just cosmetic differences, however. In the section on revolution, it was shown that change can be seen as revolutionary when the counter-hegemonic culture develops to the point that it becomes dominant. In 1997, although only one of the models that will be discussed has yet reached a level of development that could be properly called counter-hegemonic, the other group is probably in a position to attempt to develop such a hegemony as well. Which of the two choices that now face us will organize a newly dominant hegemony is the critical struggle to be played out. In one case, the

infohighway becomes a new sort of broadcasting, in the other it becomes a radically diffuse medium. In one case, it is the owners of the large communication and entertainment conglomerates who are building the infohighway, in the other it is a strange combination of academics, activists and employees of the media conglomerates who are building it. It can be looked at as a competition between the Virtual Class (following Kroker and Weinstein) and its inevitable Other, those who engage an alternative discourse of the state.

That this is a class struggle is an interesting way to frame the question of what the future will look like. As has been mentioned above, this is not a classic class struggle, but to think of it in those terms can be instructive. Both classes have different ideologies, different languages, different visions of the future. Both are in a position to significantly change the culture of the world that we live in, thus are revolutionary. The alternate visions of how the technological changes that have occurred (what is falsely identified as revolutionary itself by the cyber-pundits) might influence society and be mobilized among communities at large are strikingly, intractably incompatible. It is this incompatibility that provides the site of action in the foreseeable future.

On one hand are the owners of the post-capitalist means of (re)production. These are the multinational multimedia conglomerates and the communications monopolies, and the complicit manufacturing base of

trinkets, useless information and hardware. They have a vision of society that takes an important trend from North American late-capitalism, advertising, and reproduces it, recombines it and thus redefines the context in which we live. It grows by promoting such things as interactive programming, Push technology, "Disneyland in our VR suits" (Kroker and Weinstein 46), strict control of the content of programming, free trade and global competition, a state subservient to its needs. The crisis for late-capitalism, the moment that it mutates into a new sort of slavery, is the moment when these owners, as a class, realize that "if you build it, they will come" is naive, sentimental and critically dangerous to their guarantee to advertisers that warm bodies will be paraded in front of (and through) their content.

On the other hand, and a point that is easily overlooked given the overwhelming time advantage the first class has had to develop, is that there is a class developing in parallel to the virtual capitalists who also strive for dominion (of sorts) in the new world. These are the workers in the post-capitalist economy, the people who deal every day with the proto-tools of domination that are developed by the owners. These are the people who do the work, and more importantly these are the only people who know how the systems function. This is the class that has looked into the maw of post-capitalism and do not like what they see—and can do something about it. They are homeless people in Seattle and Ottawa who find identity only on the internet, whose only home is in the Netscape. They are programmers and

students who understand the paradox that "location" is both critically important and irrelevant at the same time. They are the developers and users of Pretty Good Privacy (PGP), "public key cryptography for the masses" (Zimmermann). They are the gun fanatic software developers, the pornographic gif-downloaders, who do not care a whit for the rights of a collective or Political Correctness. They also include the virtual communitarians who have effectively moved into cyberspace and rely on it for their business, their pleasure and have perhaps the most subtle, shaded views about the implications of the internet to individual lives. They are the Bad Ideas Collective, who, "...believe that having dreams and fantasies of a utopian future is integral to conceiving of an alternative radical politics." They are unquestionably fractured along many lines, but still potentially a revolutionary class.

It should be cautioned that neither group should be understood as 'better' than the other. To do so is to make a critical error, the same error that is being made by policy making bodies who only consider a cultural canon, artifacts rather than the organic makeup of culture itself—the people who privilege information, not the relationships that grow by exchanging it. The difference between the classes is striking, but it would be a mistake to see it as a struggle between good and evil. The goal of the revolutionary praxis of both is in rewiring culture to their own ends, in constituting a hegemony in which society redefined according to the culture of the class.

For the virtual capitalists, the world is a place in which virtual slavery exists, to be sure, but virtual slavery is not all bad. For all its cynicism, to be a virtual slave is a cheerful fate, one in which entertainment comes cheap, and where labour is no longer alienated in the Marxist sense: how can selling your labour be alienating when your body itself has already been sold to an advertiser? Further, under the domination of virtual capitalists it is all that much easier to see yourself as free, in that the classes that exist under capitalism are all subsumed into a meta-class in which everyone is equal to the extent that the worldwide domination of the virtual class depends, as Kroker and Weinstein point out, on the fact that the product of post-capitalism is infinitely mobile—and human beings are tied to a location. Again following Kroker, the virtual class relies on the virtuality of capital, which will necessarily pit states (as they will still be known) against each other in the ever-downward tendency of labour-value. We all become equally poor who do not belong to the dominant class, and only rich to the extent that the it feeds us what is required to keep virtual capital liquid, mobile and growing.

As David Ellis attests, the virtualization of this group has already begun in earnest. He quotes Time Warner's annual report for 1990:

> On its own, no global corporation can have [the] same advantage in every country where it does business... the answer lies in strategic partnerships that allow a company to use its subsidiaries to form international alliances that make it a French company in France or a Japanese company in Japan. (209)

It is quite apparent that at some point the virtual capitalists are no longer beholden to any state, that they exist (virtually) everywhere. At that point, the states themselves become irrelevant. Notwithstanding Saskia Sassen's caution that the state is so complicit in the development of her new geography of power that it cannot be seen to be withering away (28), when her analysis is read alongside the revolutionary principles described above, it is clear that what this new geography of power configures is a new definition of statehood, which has profound cultural, and hence political/revolutionary, influence.

Under the imprimatur of the alternatively developing class, made up of the people who use the internet and electronic communication on a daily basis, the situation is not necessarily any better. The radical individualism that could develop if this class were to achieve dominant status is one that involves the ultimate contingency of individual action. The states themselves are merely conveniences to the individual techno-libertarian, places to hang their hat, as it were. If a major proportion of commerce exists outside the grasp of national revenue collectors, never reaching the state and the taxability that currently accompanies wages and money, then the development of this class could have effects at least as far-reaching as those we have already seen under the sign of globalization. The technological changes that make it possible to communicate without detection anywhere in the world also allows commerce to occur anywhere—that is nowhere—and gives a much

wider range of people the ability to conduct business in a similar fashion to how the very rich do now. With state revenues falling, the ability of the state to legislate and make policy is severely hindered, but this is secondary to the fact that those engaging in nowhere-commerce have little interest in state policies other than those that privilege private property and the communication infrastructure. They rely on labour in a way that the virtual class does not, but not in such a fashion that equates their nowhere-labour to the traditional production-labour. Furthermore, complicating matters is the problem of the theoretical sources of sovereignty in the first place. As mentioned at the outset of this paper, the modern idea of sovereignty comes from Enlightenment-era political theory, which proposes that states derive their sovereignty from the delegation of a portion of their citizens' free will to a government that can take care of certain matters better than the people it governs. In the case mentioned above, it's not a great leap to imagine the contract between state and citizen being broken.

It is now possible to do work over the internet in such a fashion that it can never be detected as a commercial transaction. When some enterprising banker in the Cayman Islands or Liechtenstein develops a totally electronic bank, with transaction information encrypted by the client and the bank, cash will never have to be transferred to any state-based bank—it can exist only virtually. As commerce develops, suppliers of food and staples will also be able to conduct transactions in this manner. Thus, the actual exchange of

currency, as far as that term applies in this context, never occurs within the grasp of the tax departments. States become convenient, but ultimately irrelevant. The relevance of the state will be brought into sharp focus whenever a state tries to enact policy that impinges on the radical individualism of the techno-libertarians.

We have seen this already: when the judge in the Karla Homolka trial tried to impose a publication ban, many people (especially Americans) were shocked and appalled that a judge in a democratic country would do such a thing. People on the internet, however, just shrugged their shoulders. The judge's decision was irrelevant to them, as they could get the details they wanted from any number of places, possibly encrypted, so the policy meant nothing, not even inconvenience. If people do not want a policy, they will hack it—they will accept the policy *de jure* while in fact, they do whatever they feel is right for themselves. There have been rare instances recently in which a government had to respond in such a way that it admitted that state policy does not trump an individual, personal decision, such as when Quebec and Ontario drastically reduced cigarette taxes. The state folded in this case, as we shall increasingly see if electronic commerce develops under the libertarian model.

That one model, one class, develops to the detriment of the other is clear. The virtual class cannot tolerate people expressing themselves freely, or living outside the context or outside the culture that they develop. This is

when it first becomes a truly counter-hegemonic force beyond what has already occurred in the realm of international finance and trade and when the virtual class touches down in specific states themselves. When the move occurs from lightly interactive hardware (TV) to interactive programming (such as Videotron's UBI—Universal-Bidirectional-Interactive system or WebTV), it is no longer tolerable that communication (and hence culture) develops beyond their grasp. Content must be provided by producers or they cannot guarantee advertisers the bodies they sell them. Thus, the internet as a medium of uncontrolled communication will be severely threatened at the moment that the virtual class decides that the peripheral class is gaining too much momentum. As mentioned above, the legal changes required to allow such decisions are already in place (at least in the US) following the signing of the Telecommunications Act, 1996.

On the other hand, the techno-libertarians and the counter-hegemonic culture that they develop has no place for culture that does not allow full interactivity. This is not programming as such, in that each person, each member of the class, makes their own programming. Their very lives are the only program that is acceptable, and being able to communicate that with others is the beginning of commerce, education, entertainment and indeed life itself. Consulting is the only business for which this is currently a reality.

As a consultant, I sell my experiences on my terms to whoever I want. The commerce that develops in this alternate model is similar in the sense that

it involves trading experience. Trading experience can only grow if all are able to upload their experience to others at will and on their own terms—to develop the relationships that presage truly significant changes along Gramscian lines. Interactive TV as it is being developed at the moment is unacceptable as it does not allow for individuals to be included in any commercially significant sense. Only fully symmetrical, bi-directional communications systems are sufficient to allow the further development of this class, although paradoxically the consciousness of the class character of these disparate groups might only be developed in the context of radically uneven and closed systems proposed by the virtual class. But the upshot is that the people who may make up this alternative to the virtual class are the ones who can use the tools provided in truly informed, profoundly subtle ways. They can, possibly, get around the constraints imposed by more closed systems in a similar manner to Marx's gravedigger's dialectic in the Communist Manifesto—that the very tools of domination provide the preconditions of the organization of the alternate class (93).

Conclusion

Throughout all of the previous discussion there is but one factor that remained constant: that technological changes have had social and political impact around the globe. The problem has been to analyze these changes, to look at what influence they have had to date and how that influence has been dealt with so far. In a world that is developing under the twin signs of globalization and technological innovation, it is important to ensure that theory takes both of these into account. This fact becomes more significant in the face of the idea that the two rely upon one another in an almost symbiotic, organic fashion.

The poverty of the discourse about the influence of technology on societies is a shocking deficiency in this light. Advanced communications networks did not begin and do not end with the internet, and by maintaining such a solid focus on only one aspect of this technological change, and by equating a purely technical revolution with a broader social or political revolution, the writers who have had the most influence do a great disservice to all who would attempt to develop theory on these critically important matters. This paper has attempted a broad study of these matters in the hope of drawing a wide boundary around the issues at hand, whereas the current discourse has been cripplingly limited.

In attempting such a broad study, however, it is has been shown that

there are political, geographic and historical markers that serve to delineate a more subtle, theoretically sound discourse with which we might analyze the impact of technological change and the globalization that has resulted. The changes that have been recognized by countless people around the world are not without precedent; they have not arrived fully-formed, free of a context with which we can begin analysis. Further, when these historical and theoretical issues are in fact investigated, it becomes clear that there are matters that do bear theoretical fruit. The revolutionary theory brought to bear here is certainly not the only theoretical lens through which these matters might be investigated, but doing so points to grave issues that have only barely entered the discourse.

It remains for tightly empirical analysis to be brought to bear upon the issues raised here. For instance, a critically important empirical study has never been completed on the question of how, when and to what extent multinational corporations mobilized electronic communication resources—the use of which has so fundamentally affected the very sovereignty of states. Saskia Sassen continues to do vital research upon certain important matters such as the amount and type of financial flows that occur worldwide as well as the global legal regimes under which these occur. Otherwise, there are very few who move from a theoretical standpoint with any depth and broaden that by doing the empirical research to support it in a way that might be taken into account at the level of policy development. In fact, in the realm of policy it

seems that the revolution may have already occurred in its essential forms with almost no oversight or critique from beyond those framing the discourse.

As globalization enabled by technological change has progressed, the political and social structures in which we live have most definitely changed. The influence has thus far heavily favoured the development of a single type of actor, however, who have had these technological tools at their disposal for long enough to work with them in a way that suits their interests and needs. As similar tools become available to individuals at large, though, these tools may indeed allow similar developments to unfold at a drastically different level, and so in a drastically different manner. If the people who have begun to use the newly-available tools have a desire to drive the changes in a reflective, conscious manner, then theory and the empirical research that backs it up must continue to be developed. This paper has been one look at how such theory might proceed.

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