Unknown Knowers: Mediating Knowledge in the "Global Village"

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"We are unknown to ourselves, we knowers, we ourselves, to ourselves, and there is a good reason for this. We have never looked for ourselves, — so how are we ever supposed to *find* ourselves?" ([1887] 1994, p. 3)
— Friedrich Nietzsche, *On the Genealogy of Morality*

"Village people aren't that much in love with each other. The global village is a place of very arduous interfaces and very abrasive situations … Terrorists, hijackers, these are people minus identity." ([1977] 2003, pp. 265-266)
— Marshall McLuhan, *Understanding Me*

Introduction: We who Remain Unknown

We are today at a crossroads. Existing paradigms of identity, subjectivity, and knowledge are incommensurate with the demands of our networked society, the shift to the global village. Will we choose to foster new forms of identity that will allow us to negotiate conflicts in order to live, to learn, and to work productively together in the global village? Or will we choose to abdicate our responsibilities for coming to know, willfully yield to our ignorance, align ourselves with fundamentalisms of all kinds, and allow others to decide how best to deal with the problems and prospects ahead? This chapter considers changing epistemologies in the age of information, media convergence, and technoscience, tentatively proposing avenues for responding to some of the urgent educational challenges of our time.

Friedrich Nietzsche wrote the epigraph above well over a century ago. These words represent his sustained criticism of Cartesian subjectivity and epistemology, which assumes that we are subjects who know, knowing knowers. This chapter suggests that we have yet to digest Nietzsche's insights. Whether we consider his words as products of a visionary or a madman, they have only become more trenchant in the age

of the global village. We are, we remain, dedicated Cartesians. Perhaps it is for lack of visionaries, for our inability to imagine otherwise. And while we celebrate our many conquests, the truth is that we inhabit — through our imperious technoscience — a world in which it is no longer wise to believe that we are known or knowing knowers.

For René Descartes, nothing could be more certain than that we are subjects who know and are known. His famous maxim *cogito ergo sum* is foundational, a "first philosophy," which declares that every time I reflect upon myself, I can be certain that I am, I exist. This is both an ontological claim about what is, and an epistemological claim about what can be known, and known with certainty. The kernel of human identity, the "I", is characterized as *res cogitans*, essentially a "thinking thing" or "thinking stuff": "A thing that doubts, understands, affirms, denies, wills, refuses, and that also imagines and senses" (Descartes, [1641] 1993, p. 20). We know ourselves as subjects, according to Descartes, when we take ourselves at once, reflexively, as the objects of our epistemological inquiry. Nietzsche responds in terms that frustrate Cartesian epistemology; he states that we cannot be objects of our own knowledge because we cannot even "find" ourselves. Indeed, we have never even looked. But what would such a looking entail? Nietzsche asks, "What does man actually know about himself? Is he, indeed, ever able to perceive himself completely, as if laid out in a lighted display case?" ([1873] 2001, p. 1172). The whole business of looking turns out to be fraught. If seeing is believing, it is certainly not knowledge in any rigorous sense. Vision turns out to be mediated by expectations and conventions that are always already epistemic: a lighted display case, received taxonomies for ordering visual information as meaningful patterns, colors, motion…. The visual field is coded, multiplex, and saturated, informed by race, class, and gender…. Where — or better yet, how — shall we look if we hope to find ourselves? And is this question not more daunting in the global village, in a world that implodes on itself through global telecommunications networks and their live-feed, sleepless spectacles? If there is no return to Descartes, or even to the time of Nietzsche, how — in what ways, by what terms, and where — shall we find the truth of who we are?

The Global Village
Marshall McLuhan predicted that a potentially catastrophic identity crisis would affect the inhabitants of the global village. Most people, however, misunderstand what McLuhan meant by the "global village," seeing instead a place of interconnected utility, prosperity, and progress rather than abrasion and conflict. This is the Cartesian ruse, where technoscientific progress is believed to lead to the gradual enlightenment of humankind, the eradication of poverty and disease, the end of racism and ethnic violence — in short, a New Jerusalem, a utopia of affluence and happiness as the fruits of human reason. Clearly, this future has not yet arrived. While technoscientific

knowledge has allowed us to communicate and work and live together in ways that were unimaginable until very recently, the digital age raises new and serious challenges to us as a people, as a human community. In the most obvious sense, new technologies offer more than simply new ways to communicate and to work and to live; they offer us new ways to exploit, to enslave, and to annihilate the other — crimes that are all too often sanctioned in the pursuit of knowledge, progress, happiness.

There is thus a danger inherent in "naturalizing" technoscientific progress, to imagine it as an evolution, in the Darwinian sense. With natural evolution, species undergo a process of natural selection and change over time. Those species that flourish are the ones that best adapt to their environments. Often, we mistakenly think of this adaptation as "progress." But more accurately, a kind of biofeedback loop is at work between the organism and its environment. It is almost like a self-improvement program, except there is no self, the process is not self-conscious — it is blind. In fact, it is brutal. Nature is "red in tooth and claw," as the nineteenth-century British poet Alfred Lord Tennyson wrote in 1850. In contradistinction, technoscience is not natural; it is the product of Cartesian subjectivity and epistemology, which are also not natural, in the strict sense of the term. We are and must remain responsible for our technoscience and its effects. We are not responsible for nature in the same way that we are responsible for human creations. Natural selection has a built-in inevitability; evolution is driven by brute necessity. If organisms do not adapt, they will go extinct. Nature is vicious but survival is at stake. For technoscience, however, there is neither inevitability nor necessity. We have a choice with our technologies. Where nature is blind and without moral values, humans (when at our best) are thinking creatures who have moral values. Thus, human "progress" in the social and moral sense is best understood as a *revolution*, rather than an *evolution*. We are creatures who revolt. We are creatures who clash with each other because our values are not natural and necessary but always open to question and interpretation. We clash over what counts as real progress. For instance, does the technoscientific superiority of one nation mean that its citizens are more "evolved" human beings? Does their technoscientific superiority give them the moral right to rule over others? To invade other lands? To exploit the inhabitants? To steal their resources? To colonize or enslave them? Here we begin to see the danger in taking technoscientific progress as natural and inevitable, as justification for a set of actions. History provides countless examples of colonization and exploitation promoted as "civilizing missions," self-righteously justified because those who were colonized and exploited were deemed "under-developed" or "less evolved" or "less civilized" — as if it were self-evidently true that rationalistic technoscientific superiority is synonymous with greater human progress, greater ethical progress, greater social progress, greater political progress, or anything at all.

These are some of the questions that our technoscience raises, but leaves unanswered and unanswerable according to its terms alone. In the global village, thanks to communication technologies we are brought face-to-face with the desires, the needs, and sometimes the desolate misery of others in distant parts of the world. They appeal to us through our televisions, computers, and in other communications media. But what does it mean to look into the faces of these others, laid out in the lighted display cases of virtual reality? Shall we look or look away? And how shall we, each of us, find ourselves in this world picture? How, and by what terms, shall we understand our responsibility to grapple with images and information as they are shaped into proximate knowledge, raw human suffering? The metaphor of the village is important: in a village we know our neighbors, we recognize the faces of those we pass on the street, we purchase our products in the local marketplace. In the global village, our neighbors are present electronically but often remote geographically. The faces that we see are the faces that are linked through our facebook accounts and through television and the Internet. They stare back at us, even if we have never met them in the flesh. And the products that we purchase and consume come increasingly from a global marketplace, plums grown in Peru, moccasins from Macau, computer chips from China. Seizing on the manifold possibilities of global networks of all kinds, techno-optimists declare a new age of love and global intimacy, a chance to reach out and to embrace the great beyond. Speaking in pentecostal tones, technoscience is heralded as the way to salvation. Consider the unbridled optimism demonstrated in the pages of NASA's website, where technoscience promises "to pioneer the future … to push the envelope … to do what has never been done before" (O'Keefe, 12 April 2006). These clichés are reassuring gospel for a secular world, suggesting that salvation is nigh, and not to worry because it is in the hands of scientists, those known knowers. To call this a secular religiosity is not farfetched when one distills the truth of NASA's "vision for the future": "Our mandate is: To improve life here; To extend life to there; To find life beyond" (ibid.).

The Dark, Atavistic Side of Technoscience
Rather than accepting the rhetoric of Life and Salvation, this chapter dwells on the "dark atavistic side" of technoscience (McLuhan, 1995, p. 247). Equating technoscience with unmitigated "progress" is a mistake. When McLuhan spoke of the "global village," he was not always full of hope and optimism. There is often dread and foreboding: "Village people aren't that much in love with each other." He continues, "The global village is a place of very arduous interfaces and very abrasive situations…. When people get close together, they get more and more savage, impatient with each other" (2003, p. 265). This abrasive hostility is a direct result of the new technoscience that brings us together in unprecedented ways, forcing us to re-evaluate what it means to live together, to share our planet, our precious resources. As our communities and their values shift in response to our inventions, we must learn new ways to make sense of our social and

political bonds. McLuhan argues that every time radically new communication technologies are introduced, a crisis occurs in the human lifeworld. The truth of technoscience is revolution; human and technoscientific revolutions go hand-in-hand.

We can get a better sense of our current revolution by analogy with earlier revolutionary crises in human history. According to McLuhan (1994) and Walter J. Ong (2002), the first major breakthrough in communication technology was the phonetic alphabet, which allowed humans to represent the spoken word of their oral cultures in visual form, laying it out in space, and preserving it through time. Before the alphabet, prehistoric or tribal humans were thought to have lived in direct communion with the world and with others, through sound and sight and smell and touch. With the introduction of the alphabet, humans stopped listening in quite the same way, and became more visual, detached, linear, quantitative, analytic, and logical. The alphabet changed our relationship to time and to place, thereby changing the way we interact with the world and with others. To take one example, in some respects we no longer enjoy a direct and embodied connection with the tree. Instead, we have different ways to symbolize trees, such as through the letters T-R-E-E, which can be written down and preserved, referenced, cross-referenced, and passed along. The word "tree" does not look or feel or smell or taste like a tree in any way, even if the paper it is written on comes from trees; you cannot climb it, build shelter from it, or burn it to keep warm at night. Consequently, McLuhan and Ong claim that the alphabet slowly eroded our collective identity and our sense of belonging in a tribal community; eventually, this collective consciousness was replaced by the individual consciousness of literate culture, the idea of a distinct rational self. Descartes is an exemplar of this subjectivity — a mind distinct from its body, while much of Nietzsche's writing seeks to return us to the truth of our body, to "re-tribalize" us, as McLuhan would say.

The story of the shift from oral to literate culture helps us to understand the shift that is currently underway — one from which we have less critical distance because we are in the midst of it. The literate culture that gradually replaced oral or tribal cultures is now itself being supplanted by digital culture. We are confronted with new ways of living and relating to one another. McLuhan writes:

> I believe that our survival, and at the very least our comfort and happiness, is predicated on understanding the nature of our new environment because unlike previous environmental changes, the electric media constitute a total and near-instantaneous transformation of culture, values and attitudes. This upheaval generates great pain and identity loss, which can be ameliorated

only through a conscious awareness of its dynamics. (1995, pp. 238–239)

Those of us born into this culture have begun to move away from that rational individual self that the phonetic alphabet gave us. Networked and connected in the global village, the identity of each individual is no longer the most salient matter. When we are emailing, chatting, or gaming with friends online, when we are sharing and downloading music or videos, we are another node or relay in a vast interconnected network. McLuhan claims that instantaneous electronic networks return us to oral modes of existence, transporting us "back into the bicameral mind, which is tribal, collective, without any individual consciousness" (2003, p. 265). Ong describes digital cultures as ushering in what he calls a "secondary orality," which is not a true return to origins, but "a more deliberate and self-conscious orality, based permanently on the use of writing and print" (2002, p. 136).

Shifting Subjective and Epistemological Paradigms

To begin to see how subjectivity is changing thanks to digital technoscience, we might look at how the concept of authorship — and by extension, proprietary selfhood and Cartesian epistemology — has begun to change in the global village. Once upon a time, we used to think of the author of a book as the unequivocal *source* of that book, and the content of that book as something that the author had individually produced. The author's identity is important in this model. Why should I trust what I read? Perhaps the author is a professor or has some other recognizable credentials on the subject. In the digital world, however, there is not the same author–authority connection, nor is there the same centralized system for verifying the author's identity (see, for instance, "Authors Analogue and Digital" in Poster, 2001). If we consider a Wikipedia article, it is impossible to point to one single author. Wikipedia entries are collaborations, from many contributors across the planet, and there is no easy way to verify the identity or the authority of the person who is writing. McLuhan used to say that books would become obsolete for just this reason. Similarly, with rap music we can point to an artist but not to an author in the traditional sense. Rap artfully blends together a mix from various other artists. There is no one single source of the creation: the music is collaborative over time and space, a mix of various people who are speaking and performing here and there. Their words and music are remixed and repackaged. There is less emphasis on the "true" identity behind an artistic creation; there is greater emphasis on the "brand" that is marketed.

Unsurprisingly, copyright law is ill equipped to deal with digital authorship. The law is Cartesian, based on the old-fashioned idea of a single author — a rational, known and knowable knower — who produces a single product, and who owns the

rights to that product. Copyright lawyers tell us that it is illegal to share music through Limewire or Napster or eMule, but to those who have grown up online, it feels like the most natural thing in the world to do — sharing it is just what you do as a node in a network, and "ownership" of something on the Internet strikes young people, especially, as silly. The digital world encourages the circulation and recirculation of these texts, whether it is a Wikipedia entry, a piece of music, an episode of *South Park*, a blog entry, or an amateur Youtube video. But given capital investments in the culture industry, it is not difficult to understand the legal crisis that arises when old and new values clash. Today a different paradigm is emerging, and the old legal paradigms just do not fit. McLuhan writes:

> the instant nature of electric-information movement is decentralizing — rather than enlarging — the family of man into a new state of multitudinous tribal existences. Particularly in countries where literate values are deeply institutionalized, this is a highly traumatic process, since the clash of the old segmented visual culture and the new integral electronic culture creates a crisis of identity, a vacuum of the self, which generates tremendous violence — violence that is simply an identity quest, private or corporate, social or commercial. (1995, p. 249)

Thus, McLuhan describes "Terrorists [and] hijackers…" as "people minus identity. They are determined to make it somehow, to get coverage, to get noticed" (2003, p. 266). Global terrorism is paradigmatic in many ways because it is a product of the mass media: today, to be somebody is to be on TV. The spectacle must be built into the terrorist act if it is going to be noticed (see for instance: Nacos, 2002; Niedzviecki, 2005). McLuhan, who died in 1980, predicted that media networks and satellites "will distribute terrorist paranoia around the world in living color to match each accelerating disruptive event" (McLuhan & Powers, 1989, p. 115). We might think of the second plane smashing into the World Trade Center and how this short and shaky amateur video clip has been burned into our collective consciousness. McLuhan also predicted the end of political democracy (1995, p. 260) and the rise of political leaders who are not "literate" men but who appeal to collective fear, who mobilize "the collective tribal image and the iconic image of the tribal chieftain" (1995, p. 261). It is difficult not to read our own age here, when a barely literate man has spent eight years as U.S. Commander-in-Chief. The value of literacy has become supplanted by marketing, propaganda, an image, an icon, almost a brand; the tribal chieftain can be a fool and a tyrant, as long as he is resonant with the global consciousness. Rather than leaders, we have collective identity, emotional connectedness, the end of privacy and the end of the "true self" as we know it.

In a recent newspaper editorial, the Canadian philosopher Mark Kingwell dramatizes the clash between literate and post-literate modes of knowing and relating. He gestures to the obsolete notion of authorship and individual responsibility in relation to plagiarism at the university. We teach our students that when they write an essay, if they use someone else's ideas or words, then they must take care to document their sources according to some standard conventions. Just like the music industry, here too juridical principles are meant to shore up a sense of personal responsibility. But the conscientious student panics: Are we meant to document every last detail? From where did the ideas come? There is no way for us to remember. Much like the Wikipedia article, our own essays are collaborations from many sources. We should stop pretending, Kingwell writes, that there is any such thing as original work. We should give up the idea of "the single-author, my-brain-on-paper essay," and opt "instead for collaboration and group evaluation" (2007). Of course, it is difficult to imagine this being implemented any time soon. But we must at least begin to acknowledge that the old-fashioned concept of the single-author as the source of his or her essay is a bit of a myth. Essay-writing and examinations have been around for a long time, and we have only just begun to imagine the kind of evaluation systems that would replace them. Something *will* need to replace them and the literate truth that they represent, but until then, there will be a struggle between the old and the new (or emergent).

In the health sciences, too, we find the knowing, individuated subject in crisis, thanks to advances in technoscience. To take just one example, in recent years, digital imaging technologies have become so good at capturing images of the brain that presumed foundations of our legal system are being challenged. Remarkably, in some legal cases in the United States (Rosen, 2007), evidence from technologically advanced neuroimaging has been used as a defense against murder charges. In a nutshell, neurologists are able to show in a statistically significant way that there is an increased likelihood of homicidal behavior if certain portions of the brain are physically enlarged. While we cannot conclude definitively that brain shape *causes* murder, it nevertheless looks like brain shape is an influential factor. If the link can be proven, is Mr. Smith still responsible for murdering his wife? Or is Mr. Smith's *abnormal brain physiology* responsible for murdering his wife? What would this mean? Does it even make sense to speak in this way? The old-fashioned view would be that Mr. Smith is a *person*, that he is the sole rational agent or *author* of his actions, and that we must hold him responsible for what he does. But technoscience demonstrates that the complex relation between Mr. Smith, his brain, and his actions is very fuzzy indeed. In a tradition that privileges Cartesian subjectivity and epistemology, the law utterly discounts the physiological dimension of Mr. Smith, inventing instead Mr. Smith the autonomous person, the singular actor, the moral agent. If, for a moment, we speak only of written texts, the post-literate or digital view would be that there is *no* single author — and this is difficult

enough to grasp. But what crisis is unleashed when we start to think of brains and bodies and persons in this way? In legal and ethical terms, who is responsible? Is Mr. Smith a node in a complex neural, corporeal, and social network? Could we put Mr. Smith's brain on the stand? Could we *punish* Mr. Smith's brain for the murder of Mrs. Smith, without punishing *him*? Technoscience raises seemingly unanswerable questions concerning the "truth" of subjects who are presumed to know.

Crisis

We are at an epistemological *aporia*. Our legal system presumes that Mr. Smith is a person, a moral agent who is the sole rational author of his actions, and so on. Similarly, the education system is forced to assume that each one of us is the sole author of the essays that we write. And if we look a bit further afield, we begin to see that the whole system of democratic capitalism assumes that we are acting rationally and making free and informed choices when we purchase a product. And yet, all advertisers and political parties know this is untrue, they know that we are motivated by factors such as emotion, a sense of collective belonging, prestige, sexual desire, and myriad factors that have nothing to do with the consumer being the single-author source of his or her decisions. The problem is, once we admit that there is no such person behind our actions — then what? We will have to overhaul the entire legal system, we will have to overhaul the entire education system, we will have to overhaul the entire political system, and so on. The truths of technoscience have surpassed and outstripped our literate capacity to find ourselves in their web.

We began above by stating that technoscience does not "evolve" in Darwin's sense, and that if we "naturalize" technoscientific advances, then we are entering dangerous territory, socially and politically, because we risk sanctioning crimes in the name of historical progress, knowledge, and necessity. Perhaps these assertions were no more than Cartesian conceits, an undetected humanism, as if we had some kind of moral upper hand? After all, it seems that technoscience does have a life of its own, that these advances have run away from us, and that we cannot make sense of the sometimes monstrous implications they carry in their wake. Judging from the questions above, technoscience is marked, arguably, by its own necessity, its own inner logic, even a kind of inevitability. This is a familiar theme in science fiction. If we concede that technoscience is both evolutionary *and* revolutionary, then perhaps we will be forced to abandon our Cartesian conceits and to embrace a posthumanism. We are not subjects who unequivocally know and control the effects of technoscience any more than we can control the weather; on the contrary, the few anecdotal examples above suggest that survival in the global village will depend on a revolution in subjectivity and epistemology. Nietzsche criticizes Cartesian modes of knowledge with characteristic rancor and wit:

this intellect has no additional mission which would lead it beyond human life. Rather, it is human, and only its possessor and begetter takes it so solemnly — as though the world's axis turned within it. But if we could communicate with the gnat, we would learn that he likewise flies through the air with the same solemnity, that he feels the flying center of the universe within himself. (2001, pp. 1171–1172)

We are not known and knowing knowers; we find ourselves in the midst of and distributed in a globalized world, without fixed identity, "like an exposed spider squatting in a thrumming web" (McLuhan & Powers, 1989, p. 95). It is true, however, that we have not yet begun to think through the subjective and epistemic crises that have been precipitated by technoscience; but such ways of thinking and being will have to emerge in the midst of what is happening today.

The question, of course, is how to foster a revolution in human thinking. The challenges are monumental. In citing from the NASA website above, we suggested that technoscientific progress is often cloaked in religious rhetoric — filling us with the promise of a time to come, ostensibly leading us toward prosperity, happiness, and human enlightenment. But pious faith is antithetical to epistemology, let alone any "transvaluation of values," as Nietzsche has called it. One additional challenge in our globalized world is that corporations are the televangelists of technoscientific salvation. Through a vast media network owned in large part by the corporations themselves, these corporations promote the technologies that they sell for-profit, creating technologies and then creating the needs for which that technology is the apparent answer. It is a form of religious fundamentalism because it mobilizes fear and desire; and politically, it is totalitarian in nature. Not only are we forbidden from asking questions, but worse, we are losing the ability to *formulate* questions of meaning in the first place. If we ask how we might begin to *find* ourselves, we may find that we are incapable because self-identity is mediated through images and in terms that our not our own. If we perceive ourselves, as if laid out in a lighted display case, then by whose lights — and according to whose terms, whose images — shall we see the "truth" of who we are?

In what ways can we foster a critical resistance to the technoscientific fundamentalism that seems to have evolved beyond our capacity to control or comprehend it, and that has been co-opted at times by corporate ideologies? We would like to point to two ways that resistance has taken shape. Both of them are disastrous. Moreover, neither of them seeks to understand what it means to live in the global village, and how a true revolution would involve a revolution in thinking that does not

reject technoscience outright, in a reactionary vein, but that builds toward a critical posthumanism. First, then, are those who resist technoscientific fundamentalism by various forms of old-fashioned religious fundamentalism. This is a retrogressive response and it is ultimately hopeless because there is no dialogue: fundamentalism prohibits us from asking questions — and worse, it condemns us morally and spiritually for asking questions. Religious fundamentalism demands obedience to a word that is taken on faith as fundamentally and universally true. The global village will always be a place of arduous interfaces so long as there is fundamentalism, so we must work to find other ways to satisfy the human needs that fundamentalism seems equipped to satisfy. Second, there is the Luddite or conservative resistance to technoscientific fundamentalism, a resistance which is wholly reactionary. The conservatives say that we should abandon technoscience or at least find a way to understand it in terms of the old, literate value system. In other words, they tell us that we should return to the idea of the single-author, the rational agent, the individual self who is responsible and supposed to be free. One problem with this position is that we would have to abandon some of the insights that science and technology have given us, while ignoring the very real questions that they raise. If we once again consider Mr. Smith's brain, and we learn that neurophysiology influences murderous behavior, then we are ethically and intellectually remiss if we jettison this piece of knowledge because it does not fit our desired models of the human person or legal system. Instead, it means we are now responsible for finding new ways to accommodate this knowledge, and this will mean a paradigm shift in what we accept as true.

A Call for Media Literacy in Education
Perhaps there is a third way to resist technoscientific fundamentalism while accepting that we are, for better or worse, global villagers who live in the midst of a new subjective and epistemological paradigm. It does not mean retreating into another form of fundamentalism, nor does it mean regressing to the nostalgic values of an earlier time. In response to rising fundamentalisms everywhere, the task will be to offer other ways to satisfy the needs that fundamentalism seems able to satisfy. And in response to the conservatives who call for a return to the old values, the task will be to offer new values that will honor, rather than undermine, the insights of science and technology. We must make the most of our distributed intelligence, to try to imagine together new ways of living with others. It means that we must learn to tap into the tribal consciousness of the digital age, we must make use of our emerging collective identity, our emotional connectedness, and our creativity. The revolution in thinking and being calls for thinkers and poets and artists who will work together in our networked communities to struggle to invent new ways of thinking, new modes of living together — a new politics, and a new education system. If we are to survive in the global village, we must find the ways in which thought, poetry, and art will foster an openness that

resists fundamentalism and that works creatively toward a new set of values. In McLuhan's words, "the function of art is to produce some livable distance" (1989, p. 87). "Without the artist's invention," McLuhan writes, "man merely *adapts* to his technologies and becomes their servo-mechanism" (McLuhan & McLuhan, 1988, p. 98).

As technologies converge and the pace of change builds momentum, media will increasingly saturate every facet of our lives. McLuhan saw that constant exposure to the mediated world has a numbing effect, inducing a kind of stupor, a "Narcissus narcosis," that leads to feelings of "alienation," "disembodiment," and "de-personalization" (Danesi, 2008, p. 114). He saw that those possessing the most efficient communication technologies tend to use them to anesthetize, dominate, colonize, and control others in order to further their own interests and ends (Murray, 2008; Tschofen, 2008). He diagnosed hostility as a symptom of the "quest for identity" (McLuhan, [1977] 2003, p. 266), and warned of increasing violence along the borders and frontiers between different media systems and cultures. He proposed education in media and their effects as the only remedy for the somnambulism induced by constant exposure to media, and for the violence that results from the forms of control that media exercise (Gibson, 2008a, 2008b). Education awakens us from the narcosis slumber and helps us to "momentarily step out of the system" to see the larger picture, to resist exploitation and abuse, avoid violence, and to nurture new subjective and epistemological paradigms in the age of the global village.

Retreating from society, moving off the grid, cutting ourselves off — these are not viable solutions. For doing so entails yielding to our ignorance and our status as unknown knowers. We must instead learn techniques that allow us to enjoy the advantages and pleasures provided by technoscience, and to simultaneously resist the poisonous effects that either paralyze and make us docile, or make us desperate and enraged. Becoming knowing knowers requires new forms of education; it entails learning how to be "in" the media environment and fully involved with it — but not "of" it or "for" it.

Many core assumptions, goals, and practices underlying education programs in place today have been rendered obsolete by the shift to new technologies and the transition to global media. We need to re-evaluate the programs that we have, rethink our educational strategies at all levels, and foster inclusive interdisciplinary and multidisciplinary approaches to media and information (Gibson, 2008a). As we build new collaborative models for work, play, and research, it is imperative that we acknowledge alternative points of view and recognize different modes of information literacy, so that everyone has an opportunity to acquire the knowledge and skills requisite to fluency in the processes of information organization, storage, and retrieval

across many disciplines, to play a role in producing new products or perspectives, and to contribute to the task of finding and implementing solutions that go beyond established boundaries and current know-how (Ontario Ministry of Education, 2002, p. 4). For only then will there be peace in the global village.

McLuhan recognized the problems and tensions created by shifts in communication technology and invented educational techniques and strategies that help to remedy knowledge gaps and negative media effects. He explained that media create "technological environments [that] are not merely passive containers of people but are active processes that reshape people and other technologies alike" (McLuhan, [1962] 1967, p. i). He viewed all media as extensions of our bodies and minds, intermediaries that connect two things — such as a sender and receiver — and through which some "system of 'signs' (pictographs, alphabet characters, etc.) for recording ideas can be actualized" (Danesi, 2008, p. 115). But the medium does not just sit between sender and receiver: it includes the sender, the receiver, and the message in a total system, habitat or environment (Strate, 2008).

The problem with media environments is that they "work us over completely." It is difficult to see beyond the system in which we are immersed. Environments are total, "invisible." "Their groundrules, pervasive structure, and overall patterns elude easy perception" (McLuhan, [1962] 1967, pp. 84–85). Humans have an inherent gap in our sensory perception that blocks us from grasping the total picture, and a perceptual bias that makes us tend to foreground certain contents and to ignore the background or environment upon which those contents figure forth. We can only perceive our environment when it is juxtaposed with an anti-environment.

Artists and their works create these sorts of anti-environments that generate heightened awareness, critical distance, and new modes of perception. Similarly, technologies can simulate the creation of anti-environments. Images broadcast from satellites make it possible for us to glimpse outside our system, and to achieve the critical distance that allows us to see our planet as a kind of "exhibit" or work of art. "Anything becomes a work of art as soon as it is surrounded by a new environment," that is to say, it becomes visible, "it creates attention; it creates perception." Indeed, the function of art is to "teach human perception" (McLuhan, 2003, p. 93).

More than ever before, we need artists and poets and visionaries to counteract our myopia, to open our eyes to new modes of perception, to teach us to see and to think and to know. McLuhan was just this sort of visionary. He created a "field approach" ([1962]1967, p. i) that concentrates on anti-environments, bringing to an examination of issues, questions or problems, repertoires of methodologies from

multiple disciplines under the framework of media and mediation. His writings are exemplars of this interdisciplinary approach to media research (Ontario Ministry of Education, 2002, p. 31).

McLuhan frequently warned that we are "blind to the character of the medium" and provided examples to bring perceptual lacunae to our attention. He incorporated an understanding of human perceptual limits into a technique for media analysis and created intellectual devices to compensate for our sensory shortcomings (McLuhan, [1964] 1994, p. 9). The first example was the figure/ground relation from Gestalt psychology; the second, the example of the jet airplane breaking the sound-barrier. The diagram of the figure/ground relation reveals how a dividing line mediates between two related fields: one field is foregrounded as the content, while the other is suppressed into the background. A shift in attention reverses the fields. This redirection of attention transforms the perception of the image as we suddenly become aware of the total environment that encompasses both. Similarly, the example of the airplane accelerating past the speed of sound makes apparent a shift in perception that turns the audible noise of the jet engines into a vision of waves on the wings. Due to the structure of our perception, we are able to perceive figure or ground, sound or vision, but not both at once. At the same time, there is on some level an awareness of the unity of the total configuration and environment. Discriminating one image from the other, or sound from vision, implies the whole relationship because perception maintains and locates the thing to be foregrounded out of the background and then suppresses and hides the background. The shift is a dissociation, one of two phases of a total act of attention in which each stage is complementary to the other and implies it.

The line that mediates between the two images in the Gestalt figure, the barrier that is surpassed when the jet accelerates beyond the speed of sound, these are models of mediation that help us to see and understand our perceptual patterns and processes. Observing how the line is a "medium" in the figure/ground relation makes it possible to envision the symmetry that binds the alternative fields together in a unity. Attending to the moment when the airplane breaks the sound-barrier makes it possible to grasp intellectually the total environment that contains both sound and vision. By shifting the focus of attention back and forth between ground and figure, form and content, sound and vision, we can mentally grasp the "Gestalt" and understand the "total configuration."

The key to resisting media effects is to avoid attending exclusively to the sensory data that are foregrounded, for these are mere appearances and "false resting places," as Plato cautioned long ago.

McLuhan was a careful reader of Plato. He synthesized ancient discussions of mediation with contemporary research findings, applying the insights from the figure/ground relation and the break-boundary to the analysis of media, the interfaces between media systems and cultures, and to pivotal points in history Involving shifts in dominant media systems — such as the current change from print to digital technologies. His aphorism, "the medium is the message," encapsulates the basic premise of this approach. Mapping the figure/ground relation onto the example of the televised newscast, we could say that the message is in the total configuration of the picture and sounds that appear before our sense perceptions as the six o'clock news. The medium includes the satellite and broadcast technologies, ownership of the channel and network, the television set, the cable box, the person sitting at the newsdesk, cameras, lighting, production techniques, employees, advertisers — all those elements in the background that allow the content of the news to be foreground. The content of the news refers to the way that the words and images on the program are organized symbolically. Thus, the "messages" are not communicated only or even primarily by the news content; messages inhere in the medium itself as the environment that grounds the content. So the message of the news is the total configuration of information that occurs through the interplay of form and content, figure and ground, sound and vision, operating simultaneously through the character of the medium. The real news message involves much more than what appears on TV.

We can use these techniques to analyze the interaction among the various shaping forces along the borders between two different media systems. Resistance involves refusing to hold our attention on one field while ignoring the other. To employ an historical example involving cultures dominated by different systems colliding on a frontier, we would decline to concentrate solely on the rhetoric of the Europeans who "discovered" and conquered the native peoples of the Americas. Instead, we would shift attention to evidence of the oral and tribal cultures that inhabited those worlds, their history, their traditions, their versions of events. We would alternate attention between the European and Aboriginal sides of the story, using as a point of reference the sites of the encounter to zones of mediation, examining hands, teeth, tongues, and eyeballs, and the extensions of these human body parts in words and weapons (Tschofen, 2008). The human body, and media as extensions of the body, are locations wherein the social and cultural processes associated with two different forms of power are made manifest, thereby exposing them to observation and analysis, to critique. It is this active process of directed attention and the concentration along zones of contact and sites of shifts that allows us to step out of the field or system of which we are part, and for a moment to mentally put together the two fields, to imagine the integral unity of the events that configured history during that time period, and to resist the bias that clouds our vision.

Similarly, the field approach can be applied to today's media environment, at the turning point in the shift from print to digital technologies. We should not attend solely to the content of the news and accept this information at face value. Instead, we would pursue a dialectic of attention, constantly questioning the information that is presented. How does ownership of the network influence the selection of the events that comprise the news for that day? And how are those news items presented? What commercial advertisements are shown during the news hour? How are these commercials edited and interspersed with the news? What products or ideas are being sold? What techniques do advertisers use to try to influence our perceptions and behaviors? What issues are foregrounded while others are buried in silence? How does the medium utilize rhetoric, seduction, stereotypes, and other components of media images, dialogue, and texts that establish conventions and formulas for themes, motifs, and manipulations? How is scientific research concerning human mental functioning enlisted so that vested interests gain access to our inner life in order to "work us over" at psychic levels below the threshold of conscious functioning and awareness? (Curtis, 2002).

When the news reports on the acts of terrorists or hijackers, we would shift attention to those acts, to those people, and we ask: Why have they sought coverage? Why are they trying to be noticed? What identity are they seeking? Further, we might ask how our technological environments and processes shaped these people and these acts: How did these particular people come to embody the collision between different media systems and cultures, and to serve as effects of media? And how are we ourselves — we unknown knowers — implicated and responsible?

To come to know ourselves, as ourselves, to ourselves and *for others*, we must engage in a search for ourselves. For Nietzsche is correct. We can only *find* ourselves if we look. We must learn to face our ignorance squarely, to stare into the display case, to see beyond the spectacle, the images, appearances, and false selves that have been imposed upon us — to clear away these obstacles to our vision and begin to reconstruct authentic subjectivities and identities that reflect the truth of who we really are, shifting, multiple, collective, tribal. This looking involves a conscious awareness of the dynamics of media, it involves a ceaseless questioning of images, information, events, and values. In the era of the remix, of digital manipulation of images, of disinformation and propaganda, this process of questioning is diametrically opposed to the unquestioning acceptance of fundamentalisms, of pre-fabricated ideas, values, and subjectivities fed to us by a relentless consumer machinery. Coming to know and "see through" the techniques and manipulations of media involves cultivating a critical awareness as the only way we can come to know, understand, and dwell within the new subjective and epistemological paradigms taking shape in the networked world. We

must all become artists, create anti-environments, new forms of education, new politics, new values, and new ways of seeing. Only then will we be able to "produce some liveable distance."

References

Curtis, A. (2002). *The century of the self*. BBC Two documentary.

Descartes, R. (1993). *Meditations on first philosophy in which the existence of God and the distinction of the soul from the body are demonstrated*, (D.A. Cress, Trans.), (3rd ed.). Indianapolis: Hackett.

Danesi, M. (2008). The medium is the sign: Was McLuhan a semiotician? In T. Gibson (Ed.), Marshall McLuhan's "medium is the message": Information literacy in a multimedia age [Special issue]. *MediaTropes, 1*, 113–126. Available at www.mediatropes.com.

Gibson, T. (2008a). "Double vision: McLuhan's contributions to media as an interdisciplinary approach to communication, culture, and technology." In T. Gibson (Ed.), Marshall McLuhan's "medium is the message": Information literacy in a multimedia age [Special issue]. *MediaTropes, 1*, 143–166. Available at www.mediatropes.com.

Gibson, T. (2008b). "Introduction." In T. Gibson (Ed.), Marshall McLuhan's "medium is the message": Information literacy in a multimedia age [Special issue]. *MediaTropes, 1*, i–xiv. Available at www.mediatropes.com.

Kingwell, M. (2007). The end of the single-author, student-brain-on-paper essay. *The Globe and Mail* [Toronto Edition], 13 October 2007, p. F8.

McLuhan, M. (1994). *Understanding media: The extensions of man*. Cambridge, MA: MIT Press.

McLuhan, M. (1995). Playboy interview. In E. McLuhan & F. Zingrone (Eds.), *Essential McLuhan* (pp. 233–269). Don Mills, Ont.: House of Anansi.

McLuhan, M. (2003). Violence as a quest for identity. In D. Staines & S. McLuhan (Eds.), *Understanding me: Lectures and interviews*. Toronto: McClelland & Stewart.

McLuhan, M., & McLuhan, E. (1988). *Laws of media: The new science*. Toronto: University of Toronto Press.

McLuhan, M., & Powers, B.R. (1989). *The global village: Transformations in world life and media in the 21st century*. New York: Oxford University Press.

Murray, S.J. (2008). Psychoanalysis, symbolization, and McLuhan: Reading Conrad's *Heart of Darkness*. In T. Gibson (Ed.), Marshall McLuhan's "medium is the message": Information literacy in a multimedia age [Special issue]. *MediaTropes, 1*, 57–70. Available at www.mediatropes.com.

Nacos, B.L. (2002). *Mass-mediated terrorism: The central role of the media in terrorism and counterterrorism*. Lanham, MD: Rowman & Littlefield.

Niedzviecki, H. (2005). Packaging the suicide bomber. *Tikkun, 20*(3), 67–69.

Nietzsche, F. (1994). *On the genealogy of morality* [Zur Genealogie der Moral.], K.A. Pearson (Ed.), C. Diethe (Trans.). Cambridge and New York: Cambridge University Press.

Nietzsche, F. (2001). On truth and lies in a nonmoral sense. In *The rhetorical tradition: Readings from classical times to the present*, P. Bizzell & B. Herzberg (Eds.), (2nd ed., pp. 1168–1179). Boston: Bedford/St. Martin's.

O'Keefe, S. (12 April 2006). *Pioneering the future: Address by the Honorable Sean O'Keefe, NASA Administrator.* Retrieved December 7, 2006, from http://www.hq.nasa.gov/office/codez/plans/Pioneer.pdf

Ong, W.J. (2002). *Orality and literacy: The technologizing of the word*. London: Routledge.

Ontario Ministry of Education (2002). *The Ontario curriculum grades 11 and 12: Interdisciplinary studies.*

Poster, M. (2001). *What's the matter with the Internet?*. Minneapolis: University of Minnesota Press.

Rosen, J. (2007). The brain on the stand: How neuroscience is transforming the legal system. *The New York Times Magazine,* March 11, 2007, pp. 49+.

Strate, L. (2008). Studying media *as* media: McLuhan and the media ecology approach. In T. Gibson (Ed.), Marshall McLuhan's "medium is the message": Information literacy in a multimedia age [Special issue]. *MediaTropes, 1*, 127–142. Available at www.mediatropes.com.

Tschofen, M. (2008). "Agents of aggressive order": Letters, hands, and the grasping power of teeth in the early Canadian torture narrative. In T. Gibson (Ed.), Marshall McLuhan's "medium is the message": Information literacy in a multimedia age [Special issue]. *MediaTropes, 1*, 19–41. Available at www.mediatropes.com.