OBJECT AS VORTEX: MARSHALL McLUHAN &
MATERIAL CULTURE AS MEDIA OF COMMUNICATION

by

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ABSTRACT

I am a student of Harold Innis and am carrying on his work.
Marshall McLuhan.

This dissertation explores contributions made by Marshall McLuhan to the study of communication in general, and material culture as media in particular. We investigate what McLuhan had to say about the "ground" of media, that is about material culture as a medium of communication. We will introduce a distinction between what we normally call media -- here we will call them explicit media -- and material culture writ large which we will call the implicit media. We will use this distinction to re-read McLuhan in the interest of sketching what his work might contribute for our understanding of our emergent material culture, our "lively stuff."

We, in the "First World," live in an age of unprecedented material diversity and abundance. Our material culture has become proliferant, pervasive, programmed and programmable, increasingly performative, and permutative (that is to say, semi-autonomous in some ways). If, as McLuhan said, our species has become the "sex organs" for our materiality, then what sort of "species" are we serving to reproduce and advance?

This study is "impelled" by McLuhan's ideas, but we will also need to explore the matters missed in what McLuhan said. We will turn to disciplines outside of main-stream communication studies to accomplish this -- specifically anthropology, consumer studies and the history, theory and critical literature on design. Having done this, we will return to our new technologies and see what

McLuhan's insights offer by way of tools for pragmatic personal and public deliberations on the place of our material culture in our past, present and future.

We explore *an* aspect of McLuhan's work. My own research, reported here, is based on the published McLuhan corpus, readings in related critical and interpretive literature as well as original documentary work done in the McLuhan collections at the National Archives of Canada in Ottawa.

PREFACE

Sometime in the mid- to late 60s, TV and periodical coverage of McLuhan's ideas attracted me to a career in mass media; a CBC *Ideas* series on Innis' analysis of the history of communication on the FM radio service in the late 70s drew me into scholarship. I returned to the university an "adult learner." The turn to scholarship came about in the firm belief that there was more to knowledge than a three minute item and the desire to engage what I then vaguely understood to be a uniquely Canadian contribution to scholarship in communication. Prior to that I had been variously a switcher, telecine operator, photographer, announcer, executive producer, an editor, writer, broadcast programming director and community animator. For a period of four years during my doctoral studies I was retained as a continuing studies programmer and adult educator in arts and design. As the writing of the dissertation began I had accepted a position as a director of TV programming and executive producer with British Columbia's public education broadcaster, the Knowledge Network.

Years in the mass media, as well as childhood and youth as a son of a landscaping architect and horticulturist, had taught me the importance of design in all projects and undertakings. I was surprised that the field of communication had little to report on design and welcomed an opportunity to examine its role in industrial and commercial applications for my master's work. When it came time to choose a doctoral dissertation topic, I elected to work within the Canadian tradition which, due to my studies in the School of Communication, Simon Fraser University, had come into much sharper definition for me. It was the absence of the designed material world, however, which became the question

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CHAPTER 1

Marshall McLuhan and Material Culture as Media of Communication

Stonehenge Much Older Than Thought

London - Stonehenge, Britain's ancient circle of stone blocks, could be far older than had been thought. The mysterious stones originally were thought to have been assembled between 2100 and 1100 BC.

Now a new method using more precise radiocarbon dating has pinpointed 2500 to 1600 BC as a more accurate date range for the world heritage site, its managers said yesterday. "For the first time, we are able to put a proper date on Stonehenge and we realize that much of the previous data had been wrongly analyzed," said Dr. Geoffrey Wianwright, chief archeologist. "All the information from previous studies was pure conjecture."

The new research also shows that most of the work on the monument was completed in about 50 years, indicating that ancient Britons must have lived in a more ordered and structured society than historians originally thought. The dating method was pioneered by scientists at Oxford University and Belfast's Queens University[1].

I

Marshall McLuhan (1911-1980) presented the world with one of the first full blown theories of the effects of media and technologies of communication and its broader implications in the Modern Age. Beginning his training as an English literary scholar and critic, McLuhan focused his attention on media which transmitted the work of human consciousness as expressed by means of language or words. Throughout McLuhan's work we find a great deal of attention allocated to the printing press, the radio, the telephone and television -- and of communication in primary and secondary oral societies. These media are all characterized by their self-effacement in the interest of what is being transmitted through them, a large portion of which is made up of language.

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[1]Staff. "Stonehenge Much Older Than Thought." *Vancouver Province* 1996.

As McLuhan increasingly explored the expressive/communicative aspects of media, the communicative properties of material culture also became ever-more apparent to him, and he expanded his own intellectual interests to reflect this: He wrote about clothing and cars, cigarettes and furniture, architecture and gadgets. Many of his critics pointed out that it seemed unclear whether McLuhan was interested in an account of media, technology, or all human artefacts. McLuhan himself had said from the mid-sixties that *all* artefacts were a kind of media but he never made explicit exactly how the communication scholar might approach such a vast domain. In other words while a "unified field" approach to media is implied in McLuhan's work, it is not made explicit.

Material culture as media of communication itself poses two questions. First, communication studies have paid little attention to the stuff of daily life as media form. Consumer studies, history, theory and criticism of art and design have much more to report on the communications potential and use of things. Yet it is clear, especially in the cultural studies stream within the discipline of communication, that there is a well developed awareness among communication scholars that material culture -- clothing, furnishings, the automobile -- is a medium of communication. Therefore, the question to be posed is: Where does the study of the artefactual world fit into media studies? We might call this an academic or scholarly question.

The second question, which is more pragmatic, returns us to McLuhan, if by a round-about route. The second question deriving from our material culture, *a fortiori* from the new emergent materiality, has to do with *its* implications to the

future of our civilization. This theme is by no means new. Concern about the impact of technology and then the proliferation of consumer goods is a relatively old one indeed. What makes it more compelling is that over the last two generations the changes within material culture indicate that it is a force that must be contended with; that individuals as well as social collectivities must have the tools by which to intelligently pose questions about the proliferation and permutations within our emergent material culture.

Unfortunately, much critical literature tends to approach technology (and, by extension, material culture) as either a blind force or a mere instrument. McLuhan's project was to find a way to provide a set of even-handed tools for personal and public deliberation in the interest of assessing the costs and benefits implied in technological proliferation and "progress." The intent of the project at hand is to bring this work of McLuhan together with what we currently know about material culture as media of communication - specifically in advanced market industrial societies.

In what immediately follows we will find ourselves "toggling" between the two main threads of this exploration -- a strategy that we will pursue throughout this introduction. "Toggling," as will be later shown, is itself a feature of the tools or method at which McLuhan, at the end of his career, had arrived. We will be toggling between McLuhan and his method on the one hand, and the question of our emergent material culture on the other. In this we will be trying to follow another strategy suggested by McLuhan: a kind of intellectual montage in which sometimes related, sometimes unrelated things were juxtaposed in a unifying field.

The things that we will be putting together are not all that unrelated. Just as any printed page conveys information, so does any chair or door though they do so differently. It is our intent to show some of the particularities by which doors and chairs transmit information. To be sure, McLuhan was not all that worried about chairs and tables, but rather about more sophisticated forms of media and technology. However, our technological project, when understood in the context of its place in our social world, does translate into tables and chairs, precisely in their profusion and proliferation.

The title draws a parallel between objects, that is to say static things, and vortices which we understand to be dynamic movements of force. The idea of object as vortex, derived from McLuhan, is meant to convey the energy that McLuhan saw "nested" within the things that people make. McLuhan would elaborate this idea further toward the end of his life by referring to it as the "entelechy" of objects. As will be explained below, the "effects" of things, their "entelechies" were in-wrought and capable of generating new forces and energies that inevitably had a structuring effect on those that made, and made use of, artefacts. Artefacts were "outerances" of human intelligence and effort, palpable and dynamic "interactive" signs that focused and altered attention, intention and action.

The idea of entelechy poses the problem of "technological determinism" and capitulation to the "technological imperative." McLuhan, a very tricky thinker, would have accepted both as *sometimes adequate* descriptors of our relationship with material culture. At other times he would have denied that they obtain as either descriptions of our lives with our stuff, or of the dynamics that inform the evolution of our stuff. McLuhan's method could absolve McLuhan of

the accusation that he is a technological determinist. While McLuhan recognized that things did possess a force and a logic "of their own," *he always subordinated this force to the operations of the work of an awake, critical consciousness*. Admittedly he felt such a consciousness to be lacking within our societies. The point of his life's work was to provide insights that would lead to an "*integral awareness*" -- his term for this awake, critical consciousness. Integral awareness, that is itself a kind of "posture of mind," could provide a way out from the pernicious consequences of the play of the unrestrained entelechies of our material culture.

Is it conceivable to talk about the entelechy of inanimate things? Is the purpose of rocks to become houses? Hardly a topic for a doctoral dissertation; and yet . . . If we look dispassionately at the material world around us we realize that its emergent forms do suggest an evolutionary logic. Our stuff does become more complicated and better at doing things all the time. The greatest cliché within our society is "the new and improved." It is also clear that an object such as the automobile can have an enormous impact on the ways in which we organize not only our daily lives but the world in which they are set. Simply put, it is clear that many aspects of our urban environment are shaped or reshaped to accommodate our need, or love, of the personal automobility afforded us by our automobiles. The content of this reshaping is *our* desires; the form this takes is made of asphalt, plastic, iron, glass, mortar and brick.

Often enough our technological innovations cause unforeseen complications which then provoke the development of new technologies to resolve. The artefacts that emerge out of our desire to ameliorate problems generate new and unforeseen problems. To be sure, innovations emerge

because they become technologically possible (or sometimes "technologically sweet"), or technologies are developed in order to put what was previously unattainable within our reach. But there does appear to be an almost "internal logic" to the evolution of our material world. Increased capacities and greater tolerances accruing, inspiring and facilitating new and improved forms; these leading in turn to occasional breakthroughs and again chains of variations and improvements[2]. Even as McLuhan had observed in the late 1960s, it is as if the most significant evolutionary events since our immediate forebears appear to have taken place not in our biology, but in our technology[3].

From the mid 60s, McLuhan's critics observed that his account of media was "spongy:" Anything whatsoever could be soaked up into it. On occasion McLuhan was speaking about media (print, paper, TV, the spoken word) and so forth. On other occasions he was talking about technology. Throughout, though more so toward the end of his life when very few were listening anymore, he even talked about everything. This apparent lack of rigour was frustrating to his students and critics and remains a source of frustration into the present. Yet the sliding between orders of abstraction, description and even logical categories, was consistent with an approach that perceived the world as a "work of art." If you take art to contain artifice, our world is a work of art in so far as we live in an artefactual (or artificial) world.

McLuhan, a student of poetry and language, was only applying the formidable aesthetic and literary inheritance of the Western Humanist tradition,

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2George Basalla. *The Evolution of Technology.* (Cambridge: Cambridge University Press, 1988), pp. 208-209.
3McLuhan writes: "The extensions of man with their ensuing environments, it's now fairly clear, are the principle area of manifestation of the evolutionary process." Marshall McLuhan. *War and Peace in the Global Village.* (New York: Touchstone, 1968), p. 19.

torqued up for the occasion by the free-form poetics of English literary Modernism and the popular culture of the day, to the proliferance, the permutation, the intrusiveness, and awesome growth in the performativity of all the stuff that we have made for ourselves and inherited from previous generations. For McLuhan, this stuff, since its origins lay in the work of human consciousness, attention and labour, was a congealed outerance of that consciousness. An inscription, of sorts. "Outerance" was an utterance. Starting from the inscription of "spirit," consciousness, if you will, on the stuff, McLuhan came to include the stuff of daily life, material culture, into his account of media and communication *as a ground*[4]. Our first nature, he concluded, was biology; our second -- one yet to be explored -- was technology. McLuhan's generation saw some of its most awesome evolutionary steps.

The two historical discussions to follow trace the evolution of the media ("figure" in McLuhan's account) and our relationships with/through material culture (the "ground") over a period that can be called McLuhan's "memory envelope." Roughly between the beginning of the previous century and the latter part of this one -- some one hundred years -- the shape and much of the most important stuff of our modern world, came into being and got around. The stuff got to be more powerful and productive during the Industrial Revolution. But with the development of smaller formats, portable energy supplies, and the concomitant technologies, the nature of the stuff began to change. Encoding even rudimentary "mental" calculations and capacity for remote control added another dimension of change. Synthetic materials expanded the universe of

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[4] Ratios between the centre of attention or inquiry and its context played an important role in McLuhan's thinking. We expand on this at some length in Chapter 3. For development see: Marshall McLuhan, Eric McLuhan, and Kathryn Hutchon. *City as Classroom: Understanding Language and Media.* (Agincourt, Ont: Book Society of Canada, 1977).

stuff and its performance. Increasing complexity and performance, performativity, if you will, of technologies and science, opened even greater possibilities for increasing sophistication, complexity and performativity.

By the end of these 200 years a relatively static, stable, often Spartan but rarely completely ascetic, material culture transformed into a flux of new and improved details and services, projects and products[5]. It has become a diverse, heterogeneous and transitory micro-geography of daily life. Even as the stuff greets us, we already suspect that it is dated, that the next thing will be better. Consider our current and emergent materiality -- it is proliferant and it is pervasive. It is also increasingly programmed and programmable along with being ever more performative. And clearly, it is permutative (that is to say, semi-autonomous in some ways).

II

The expansion of our material culture exceeds that of any civilization on which the archaeological record reports to date. We also seem to be the first civilization to develop synthetic materials and use them through such broad ranges of our material culture. Harnessing electricity as a power source and the promise of flight suggest that our capacity to miniaturize and amplify the effectiveness of our tools and devices is also unmatched in the archeological

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[5]While conventional wisdom ascribes an asceticism to the Protestant burgers of the Reformation, Mukerji challenges this view which has come down to us from the work of Max Weber. Based on documentary evidence, Mukerji argues that the consumption patterns of these burgers also exhibited a love for luxury, even if it was understated. See Chandra Mukerji. *From Graven Images: Patterns of Modern Materialism.* (New York: Columbia University Press, 1983), pp 5-8 and passim. Mukerji's views are supported by what is now known about the lifestyle of Dutch burgers during the Reformation. For a developmental account of the shift in domestic culture from the Late Medieval period to the Renaissance and Reformation see Witold Rybczynski's *Home: A Short History of an Idea.* (New York: Penguin, 1986), pp. 15-75. See also: Peter Burke. *Popular Culture in Early Modern Europe.* (London: Temple Smith, 1978).passim and the Ewens' discussion of distinctions between the clothing of the employee and employer in Stuart Ewen and Elizabeth Ewen. *Channels of Desire: Mass Images and the Shaping of American Consciousness.* (New York: McGraw-Hill), 1982.

record. If material possession is an indicator of progress then we are the most progressive society that we have any record of to date. The ever accelerating evolution of our technologies since the early 1700s also suggests that the tempo of the expansion of this material culture and the diversity of its forms are also "something new under the sun," especially when we take into account the fact that millions of more people have access to much more stuff than ever before[6].

To an extent this proliferation is positive. Our species seems to be on the brink of overcoming at least one of our great scourges -- hunger. This in itself is tied up with our ever better stuff: Better farm instruments and techniques; better fertilizers, food processing and refrigeration; better, faster, more efficient distribution to retail or other allocation points, and better and more efficient kitchens and domestic techniques for feeding ourselves. The same might be said for clothing and shelter. If by shelter we also include our quality of living and our health, here too the stuff makes things better: better medicines, better understanding of bodily techniques which advance and foster health, better access to wider ranges of recreation and self enrichment experiences. The stuff makes it better; *and* the stuff makes it worse.

Changes in the stuff have begun to accelerate, and this acceleration shows no indication of diminishing. When time is thought in historical terms, then the acceleration of technological change is a relatively recent but an intense phenomenon within human experience. Change of this order is

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[6] I am here referring to what William Leiss has called the "high intensity market setting," a socio-economic formation in which more goods and/or greater varieties are available to more people more often. See: William Leiss, Stephen Kline, and Sut Jhally. *Social Communication in Advertising: Persons, Products and Images of Well-Being.* 2nd ed. (Scarborough, Ont.: Nelson, 1990), p. 51.

disorienting. New things have to be learned and we have to learn how to work

the new things[7]. The stuff also intrudes on, structures, and disciplines daily life

more than ever before. We adapt ourselves to bus routes, to mechanical time.

The telephone intrudes into our daily lives in thousands of pleasant and

sometimes unpleasant ways. By the industrial revolution it was already

understood that the machine could displace certain functions of the worker. As

we move into an increasingly technological future, might we arrive at the

question of what is to be done with a large unemployed populations?

Besides intruding on life and accelerating in tempo of change, our new

lively stuff exhibits a number of other characteristics. The essential ones might

be as follows: Our lively stuff has become proliferant and pervasive, it is

permutative. It is programmed and performative. These taken together

characterize our lively stuff, and in some essential ways, separate it out from all

the stuff we had before. We have always had and liked stuff. Food, clothing

and shelter are listed as bare necessities. All three are constituted by stuff. We

cover our bodies with things. Our calorie and vitamin intake takes the shape of

vegetables or grubs and various form of drink. The counter-environments[8] that

we create for habitation are also things that are assembled just and so. In many

previous societies however, some people had most of this stuff and more had

less; now more people have more things, diverse things. The stuff is

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[7]There are a number of sources that would support the assertion that change is disorienting. In the historical context, Mukerji suggests that the new world of goods that arrived in Europe with the Age of Discovery implied that people had to learn how to implement the new things and ideas. Chandra Mukerji. *From Graven Images: Patterns of Modern Materialism.* (New York: Columbia University Press, 1983), p. 20-22. We should note that Edmund Carpenter, McLuhan's colleague through the 50s and 60s, had studied the arrival of new technological configurations among "stone age" peoples in the Canadian North and Micronesia. It is exactly the "dislocation" created by having to literally "learn new things" that McLuhan meant to ameliorate with his "method." For the influence of the "anthropological" vector in/on McLuhan see: Edmund Carpenter. *Oh, What A Blow That Phantom Gave Me!* (Toronto: Bantam, 1974). The choice of photographs supporting the text is a commentary on the encounters with new media.
[8]Marshall McLuhan. *War and Peace in the Global Village.* (New York: Touchstone, 1968), p. 66.

proliferant. There is literally more, and more of it, both as the things we use and things of refuse[9]. Everybody knows there is more of that. That the stuff is pervasive is the case for all urbanized societies (urbanization continues to be a global trend).

Material culture in the form of urban geographies and the concrete conditions of habitation, recreation and work, is pervasive in that it defines the very idea of urban life. There are buildings, and things and roads, and rules. What is different is the degree to which certain aspects of our stuff have come to colonize even that other place that we refer to as "Nature." To keep nature intact we create protected shelters for it and call these parks. Coca Cola or its just-younger sib-competitor, Pepsi Cola, meet us at almost anywhere in the world. We encounter used Styrofoam cups out on the high seas; there is now a ring of space exploration program refuse around our planet[10]. The stuff proliferates and becomes more pervasive -- there's more of it wherever you go (so much so that those who can afford it, try to escape from all of it). If the sheer and growing quantity of the stuff alone gives pause for wonder; its qualities even more so. What seems to truly differentiate our stuff from all our previous

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[9]Franklin's wry observation about the precedence given things in our rhetoric of planning a progress is germane here: We express concern about the impact of the exponential population growth of human beings on the global ecology, yet we hardly note the exponential "population" explosion in the world of goods, things, devices and machines. Consider that a century ago there were no cars. The zipper is a recent invention, and when taken in the context of the history of the species, even the button is very recent. See: Ursula Franklin. *The Real World of Technology, CBC Massey Lectures.* (Montreal: CBC Enterprises, 1990), pp. 29-30. Further commentary on this from Gordon and Suzuki who note that:

> "The world automobile population has been growing faster than the human population. It has increased from 50 million vehicles in 1950 to more than 400 million today, almost a ten-fold increase in 40 years. Projections of global numbers place almost one billion cars on the planet by the year 2030."

Anita Gordon and David Suzuki. *It's A Matter of Survival.* (Toronto: Stoddard, 1990), p. 196-7.

[10]It is unclear if representations of Earth need to approximate Saturn as yet, but a ring of space debris made up of parts of space vehicles and satellites, techno-mechanical refuse and even toothbrushes does orbit our planet. Not a few of these cast-offs represent a threat to orbitational navigation. See: Edward R. Tufte. *Envisioning Information.* (Cheshire, Connecticut: Graphics Press, 1990), p. 48.

stuff is the way in which our stuff is programmed, how it performs, and how it permutates.

The term programming takes its root from the Greek term denoting something written in advance. When we talk of something being a utility, we mean that it is useful for something -- say an axe for felling a tree. An axe, is programmed to cut wood. Some axes, are programmed for felling trees. The iron and other minerals are programmed to have a heft and a specific bevel of edge; the shape is programmed for this function, and the wood handle also programmed by the acts of selecting a certain kind of wood, with a specific weight and length and a kind of tolerance matched with a certain capacity to absorb a shock. Buildings are programmed in as much as they are planned hallways, flow of human traffic etc. The shelves of goods at the local supermarket are programmed and manufacturers compete for better locations in the programming. Our traffic signals are programmed as are the various routes in our cities. Television programme directors even programme aspects of our evenings. Material culture has always been programmed -- animal breeding is a record of our first efforts at biological programming, this along with diversification of our diets. However with small, reliable and portable energy sources like electricity and silicon-based operand systems, the programmed aspect of our material culture takes on a new order of being.

The ATM and the automobile industry are two examples of this new order of programming. My generation experienced an automobile culture in which any "Joe" with some pals, maybe some help, and a basic tool kit, could do most of what needed doing on his '57 Chevy. Customizing was a popular "sport" of a significant population of adolescent males in North America. You could still

grind the sheet metal, chicken-wire and "bondo" it. You could mess with the engine, even go at the "carbs" if you had the talent and the skill. Try that on a 1995 automobile. The challenges are greater because the screw-driver alone will not help all that much. The engine contains sensors and various computer chips. We are promised complete voice recognition within the first decade of the next century. Doors that open to one's personalized "Open Sesame" await us in the not too distant future.

This programming, while making things better "conveniences," also expands our dependence on them, and on those who know how to service and repair them. For all their various utilities, things become increasingly transparent and simultaneously opaque, if you will. We know what we want our PCs to do (print this, process that, stir and shuffle the other thing); but very few of us actually could explain what happens between the command and the result. They become both transparent and opaque: transparent because we come to expect their presences and performativities in daily life and soon think nothing of them; opaque, because we increasingly know less about how they work. But their programmed nature, along with remote sensing and telematics, expand our reach and accommodate our comfort and convenience[11].

That which is programmed does not lend itself easily to things and activities for which it was not programmed. There is *bricolage,* but this is easier with simpler tools than with the sophistications of automobile engines and personal computers. Cubic centimeters, suspension, transmission tolerances

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[11]Loss of "craft knowledge," (knowledge about how the things of daily life are made and work) would have a number of implications for the development of consumer culture and practice. See: William Leiss, Stephen Kline, and Sut Jhally. *Social Communication in Advertising: Persons, Products and Images of Well-Being.* 2nd ed. (Scarborough, Ont.: Nelson, 1990), p. 64.

etc.; size of memory, speed of processing, CD or not etc. Programming sets parameters. Not all programming is foolproof. The 80s gave us at least two outstanding examples: WIMEX[12], the USA's military computer network nearly declaring unilateral war against the USSR as discussed below is one such example. The other, still in the nuclear vein, is the Chernobyl disaster. Were we to prove that both were the results of human error or negligence, this would not diminish the impact of making the decision to turn the oxen-drawn wagon this way or that, compared to trying to maintain the energy of a nuclear bomb under manual control as you manipulate some cooling rods into place. With our programmed materiality, automation and sophistication, small decisions and gestures can bring sublime and horrific consequences. That is new in the history of our species.

If we list programming as a significant feature of our emergent materiality then we must also mention automation; this bridges between programming and performativity, our next major category. We will elaborate on automation presently -- but first we can carry the thread of performativity a ways. A candle provides light and a little heat. It takes a lot of candles to light and heat a modern metropolis. One nuclear power station will do the same thing with energy to store, sell and spare. The nuclear station is bigger, it takes more science to make and run, it is much more expensive, and it is more dangerous than a candle to boot. The nuclear reactor, like the Space Program, is more performative than the candle or the jet. Our material culture has attained a capacity for performativity that has been imaginable only in the dreams and fantasies of the past; accorded to supernatural heroes and Gods. To this

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[12]Lyall Watson. *The Nature of Things: The Secret Life of Inanimate Objects.* (London: Sceptre, 1991), p. 10.

performativity we might add the speed with which our materiality now processes and operationalizes information; the degree of "storability" afforded to foodstuffs through fast-freezing and chemical additives and so on. Add tolerances and conductivities, add reliability. In all cases our stuff can do more, and do it faster than before.

Our emergent materiality is also increasingly permutative. This is a relatively simple idea though it does have some very far-reaching implications. By saying that our materiality is permutative, I have in mind, that things tend to lead to other things -- sometimes better versions of themselves and sometimes related things made needful by the ones that we have started with. Invention and innovation, rarely, if ever, spring up *de novo*. They emerge out of sometimes longer, lately shorter, periods of tinkering, improvements and variations on established technological and mechanical themes and principles[13]. The pressure of the continuous expansion of markets and intensification of competition as more and more producers enter the field, leads to intensification in the "tinkering." Things themselves are relatively quick at demonstrating their limitations to us -- their poor design or unwanted trade-offs in performativities. As Raymond Loewy once said, "Never leave well enough alone." Things can always be improved. Witness the automobile.

The first mass car was the Model T that Ford gave the world. From the 20s onward, the car began a long process of permutation. First it was a

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13Basalla, noted above, applies aspects of Darwinian evolutionary theory to account for the development of increasingly sophisticated mechanical forms. Among other things, Basalla's point is a critique of the "hero-designer-genius" and a rupture-driven account of technological development. See: George Basalla. *The Evolution of Technology*. (Cambridge: Cambridge University Press, 1988), pp. 208-209. Arnold Pacey, on the other hand, does not employ the evolutionary metaphor to his account of technological development, but tends to come down on the same side as Basalla. Arnold Pacey. *The Culture of Technology*. (Cambridge Mass: MIT Press, 1986), pp. 28-34.

buckboard with a motor on it -- today it looks like a cosmic bean that is ready to take us in its air-bagged[14], sculpted womb-like interior, off into another spatio-temporal dimension. In between it has looked like a tear-drop, a wagon, a fighter airplane, a rocket -- it comes in as many colours and interiors as can be imagined. The technical configurations are legion -- 4 cylinder, 6, V8, standard, automatic, "cc's", and "hp", etc., etc.. The thing is there for getting you from here to there safely, comfortably, and reliably. But the permutations of this simple formula, through the lens of presentation and performativity, appear inexhaustible. The permutations of the automobile, its proliferation and pervasiveness have all led to permutation of material culture in the larger context -- our cities, for example. Expanded suffrage of drivers leads to an amplified demand for roads and better roadside services along them[15].

Even the humble bicycle, cousin of the early airplane, has gone through its permutations[16]. Once the "safety" bicycle appeared, racing variations were soon developed. Touring and racing bikes permutated to a new level of performativity with the development of gears. The "3 speed," and more sophisticated "10 speed" of my youth have since permutated into a variety of options, tire sizes, gear ratios, light alloys, handle-bars. The bicycle today demands a helmet (for safety of the rider) and a better quality lock (for the

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[14]Air-bags, which were promoted as life-savers, have returned to public debate as they have been found to open with too great a force leading to the injury of the driver and or passengers. The automakers have agreed install air bags that open more slowly than the current ones which inflate at a rate exceeding 200 miles per hour.

[15]For a representative account of the elaboration of the American road-side see John A. Jakle. *The Tourist: Travel in Twentieth Century North America.* (Lincoln: University of Nebraska Press, 1985), pp. 120-145. Commercial visual thickening began well before the proliferation of the internal combustion engine, see John Barnicoat. *Posters: A Concise History.* (London: Thames and Hudson, 1972), pp. 183-204.

[16]Kern offers a very useful account of the impact of the bicycle on popular conceptions of time, space, person, leisure and mobility at the end of the 19th Century. See Stephen Kern. *The Culture of Time and Space: 1880-1918.* (Cambridge Mass: Harvard University Press, 1983.), p. 111-113. For the relationship between bicycle and airplane, also see Arnold Pacey's *The Culture of Technology.* (Cambridge Mass: MIT Press, 1986), p. 86.

security of the bicycle). There are special shoes and special gloves, and special wear to go with the bicycle and activities associated with it. Permutation, if this means that one thing contributes to another, here and now it means that one thing leads to others and faster.

Innovations are also born of the encounters between one form of materiality or technology and another. McLuhan reported on many examples of this in his *Gutenberg Galaxy*. These were examples of the tendency toward hybrids. The movie met the radio and produced TV, as it were. TV met the oven (bridged by TV foods, no doubt) and produced the microwave oven. It doesn't quite happen like this, to be sure, but the process does exist and is at work especially now as we witness the implosion of all the media into the multimedia teleputer -- still emergent though eagerly awaited and cultivated in some sectors of society[17]. Hybridization, along with innovation and improvements to extant forms all lead to the unfolding chain of the permutation of our material culture. To this we might also add the growth of science (itself assisted in no small measure by the continuous improvement of technology) and the increasing productivity of improved materials and machines.

To these issues and examples of the permutative nature of our material culture and emergent materiality, we need only add automation and what appear to be tendencies toward semi-autonomy. While we will address both issues at greater length later on, here we need to note that automation and

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[17]The literature here is enormous: The periodic press and promotional machinery are themselves almost overwhelming. The tone of enthusiasm that one finds with popular science in the earlier part of this century has now been transferred to the computer and "tele-puter." By way of comparison see the popular scientific imagination in: Howard P. Segal, Howard. "The Technological Utopians." In *Imagining Tomorrow: History, Technology and the American Future*, edited by Joseph J. Corn. (Cambridge, Mss.: MIT, 1986., pp. 119-136) and *TIME's* spread on science and society in Michael Krantz's. "Technology: 64 Bits of Magic." *TIME* 1996, 43.

semi-autonomy go hand in hand. It is exactly the quality of automation that gives technology the feel of being animated or "lively". We plug it in, throw the switch, and *it* gets on with it -- conditioning the air, putting caps on newly filled bottles, sorting data, brushing our teeth. When we hear talk of the "technological imperative", we are beginning to accord even greater autonomy to our stuff. "We should, as collectivities, undertake such and such projects because the technology *suggests* it." However repulsive this may seem, there is a grain of truth in it. We not only condition the world through our artefacts, our artefactual world conditions us. A child's voice on the CBS recording of *The Medium is the Massage* repeats: "we change our tools and then our tools change us[18]."

<center>III</center>

In what follows I am interested in what we might call the advent of the age of the "lively stuff," and what McLuhan made of it -- another toggle. McLuhan viewed the coming of this new dynamic materiality with suspicion. Even while he was being hailed as the high-priest of pop-cult and a technological prophet (positively disposed to technology in that guise), he himself was at pains to point out that he was uncomfortable with change, did not much like the stuff he saw emerging, and felt that the whole of our material modernity was flawed. During the 50s and early 60s, McLuhan did believe that the new electronic media would return society to a more holistic consciousness -- a consciousness not unlike that of an enlightened mind of say the late Middle Ages or the Renaissance. But by the late 60s and until the end of his life, his view grew progressively darker. Before his death he felt that the new media would usher

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[18]Marshall McLuhan and Quentin Fiore. *The Medium is the Massage*. 1989 ed. (New York: Simon & Schuster), 1967.

in an age of renewed tribalism played out in a global village. The neo-tribalism and world-shrinkage into a very large village, however, were not utopian visions; If anything, this vision was dystopian. McLuhan saw exactly the negative sides of both phenomena as front and central in the civilization that might emerge from the advent of the new media. A world of petty, small-minded, easily influenced, humanoids who made it their business to have their noses in everyone's business: McLuhan's "last men" were even less charming than Nietzsche's blinking humanoids, but McLuhan's were on a mission: These were the sex organs of their machines[19].

What McLuhan made of the emergence of our new materiality and technology was of deep concern to him. He believed that the effects of new technologies could be best understood by using the "shock" metaphor that he had derived from the work of Hans Selye[20]. New technologies, new stuff, had a disorienting effect on people. We tended to understand the new in old terms. It took a period of time before we had gotten the hang of a new technology. By the time we did, the technology had already altered our perceptions and expectations. And, to complicate matters, the technology had itself changed. We could not see the effects of our new media until the effects had been realized. Because of this, we "marched backward into the future," and were prone to see the future "through a rear-view mirror." We were never quite able to foresee the long terms effects of the application of our innovations. What was needed, McLuhan felt, was a kind of inoculation that would protect us from the rear-view approach to our technology; a palliative for the numbing effects of these new technologies, media and things.

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[19]Friedrich Nietzsche. *Thus Spake Zarathustra: A Book for Everyone and No One.* Translated by R. J. Hollingdale. 1961 ed. (Harmondsworth: Penguin, 1892), pp. 45-7.
[20]Marshall McLuhan. *Understanding Media: The Extensions of Man.* (New York, 1964), p. 42.

The first part of McLuhan's intellectual career was based on working out the effects of media on human consciousness and developing an understanding of how those effects manifested themselves on the broader stage of history. Studies in the nascent media theory laid out by Innis, and then further work in the anthropological literature with the help of Edmund Carpenter, as well as work in visual communications with Harley Parker, were to be great aids in these explorations. Following his "meteoric" and short-lived rise into celebrity, he sought to bring together his insights into something that could work as a kind of inoculation. The disease, however, was of the perceptions and not the physical body -- thus from the early 70s until his death, McLuhan struggled to integrate the various strands of studies into what I will be calling a "method" (for the lack of a better handle).

McLuhan, it is said, was a technological determinist. He was not. Or, more precisely, we should say that McLuhan embraced the technological imperative in order to ultimately overcome it. McLuhan continually injected his favourite formulation into almost every text that was published between *The Mechanical Bride* and his death: "Nothing is inevitable as long as people are" -- and then insert one or more of the following -- "willing to think," "are awake," "willing and able to ask questions." McLuhan believed that technology and materiality did possess a logic that was compelling; he also believed that we need not be numb to its effects. Quite the contrary. The trouble, he claimed, was that most people were unprepared or ill-prepared, some completely unaware, that such effects could, and would exist. What was needed was a way to introduce an awareness of what effects innovations might have. In other words, what was needed were mental tools for informed personal and public

deliberation about the potential consequences of innovation and the emergent "new." Thus he brought together a way of perceiving, a body of knowledge, and a mental posture with four questions which, taken together and internalized, were to produce just such a palliative. If McLuhan was a technological determinist, then his mission was to provide the means for seeing his own species into extinction.

The system of thought that McLuhan constructed was supposed to provide the tools for critical deliberation about the consequences of our innovations and the emergence of our new artefactual universe. The first part of what is to follow deals with this question at greater length. Since McLuhan entered the question of our emergent materiality through media theory, we will examine McLuhan's method against a background of the emergence of the new media. As we noted at the outset, however, our second question has to do with material culture as media, and here McLuhan emerges as a different kind of problematic because of what he does not say. McLuhan said a lot of stuff, but there are missing matters in that discourse, and the second half of the dissertation will deal with these.

Reported here is the advent of the age of "lively" stuff, what McLuhan made of both *advent* and *liveliness of the stuff,* and *what significance this has for the study of communication.* By lively stuff I mean the convergent implicit and explicit media and their apparent growth in animation, autonomy and intelligence. We begin the excursus by tracing the development of McLuhan's ideas in their setting of the evolution of the explicit media. From there we explore McLuhan's method. Having established the key constituents of his critical approach we address the matters implied in his work, but never made

explicit. Our excursus ends on a description of the realm of our lively stuff and what it implies for the future of our civilization. Throughout, whether directly, or indirectly, McLuhan will be our guide.

CHAPTER 2

McLuhan and the Explicit Media

Whereas mechanical forms extend the limbs and organs, electric technologies
beginning with the telegraph extend the nervous system and the conscious and
unconscious in one or other manner or degree[21].

I

When you look at the materiality of the new media, the explicit media

appear to be nothing at all. For the most part their materiality is secondary,

invisible, implied. What is the "objective" physical presence of the unplugged

television set or the unconnected VCR? Sculpturally uninteresting and finally

useless unless plugged in, they bring the enormity of the video and broadcast

archive, as well as any "covered" live event, into the room and allocation of

attention. In short, their function is transparent in the interest of a disembodied

presence. The radio becomes a disembodied friend, this being particularly the

inspiration and consequence of the evolution of "side by side" communication

formats first developed in the advertising and then generalized through the

mass media[22]. "Soaps" become the new source of gossip, therefore a window

on a community in which one is an emotionally involved fly on the wall[23]. The

keyboard and screen become an extension of the "mind net" which connects

hundreds of thousands of consciousnesses, in pure disembodiment mediated

only by alpha numeric display and image on a screen and sound from

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[21][Marshall McLuhan and Eric McLuhan. *Laws of Media: The New Science.* (Toronto: University of Toronto Press, 1988), p. 117.

[22]Marchand provides a very useful account of the development of commercial communication formats and the influence of advertising on editorial presentation. See: Marchand, Roland. *Advertising the American Dream -- Making Way for Modernity 1920 - 1940.* Berkeley: University of California Press, 1985., pp. 53-87.

[23]See Ihde's discussion of the perceptual response to informatic and art objects in Don Ihde. *Existential Technics.* (Albany: SUNY Press, 1983.), pp. 61-63.

speakers. What is explicit in the explicit media is the message; the medium "self effaces."

In the interest of brevity we are restricting the following discussion to the previous 40 odd years. What we are omitting, however, is the history of the evolution of the explicit media from 1800 until 1950 -- this is regrettable. The richly textured tale of the emergence of the explicit media provides many insights into the communication ecology and mediascape we inhabit now. McLuhan was among the first to explore this domain -- and many have come after him to make contributions of detail and analysis. Among these we could list the work of James Sloane Allen, James Kern, Daniel Czitrom, Paul Heyer, Roland Marchand, Carolyn Marvin, Jeffery Miekle, Avital Ronnell, and Modris Eksteins[24], to name a few. We will have occasion to refer to some of them, but will concentrate the second half of the 20th Century -- the period in which McLuhan flourished.

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[24]The following works were consulted in constructing the historical framework grounding the project at hand. James Sloan Allen's *The Romance of Commerce and Culture: Capitalism, Modernism, and the Chicago-Aspen Crusade for Cultural Reform.* (Chicago: University of Chicago Press, 1983). Czitrom's detailed account of the development of media and their theorists is particularly useful. See: Daniel J. Czitrom. *Media and the American Mind: From Morse to McLuhan.* (Chapel Hill: University of North Carolina Press, 1982). Heyer's research on the role of radio and press in the "story" and "myth" of the Titanic provides detail in emergence of the unified field of material culture and explicit media in first half of the 20th Century. See Paul Heyer. *Titanic Legacy: Disaster as Media Event and Myth.* (Westport, Connecticut: Praeger, 1995). The role of radio and then the movies is given rich definition in the emergence of consumerism by Marchand. Of particular interest are his reports of the evolution of media formats and aesthetics across the media forms. Roland Marchand. *Advertising the American Dream -- Making Way for Modernity 1920 - 1940.* (Berkeley: University of California Press, 1985). Marvin and Miekle add to the rich history with their accounts of the electric light and industrial design respectively. See Carolyn Marvin. *When Old Technologies Were New: Thinking About Communications in the Late 19th Century.* (New York: Oxford University Press, 1988) and Jeffrey Meikle. *Twentieth Century Limited: Industrial Design in America, 1925 - 1939.* (Philadelphia: Temple University Press, 1979). as well as his. "Plastic, Material of a 1,000 Uses." In *Imagining Tomorrow: History, Technology and the American Future,* edited by Joseph J. Corn, 77-96. (Cambridge, Mss: MIT Press, 1986). Ronnell's dense study of the resonances and psychological dimensions provides a deeper understanding of the emergence of the telephone. Avital Ronnell. *The Telephone Book: Technology, Schizophrenia and Electric Speech.* (Lincoln, Nebraska: University of Nebraska Press, 1989). Ekstein's detailed work on cultural history, particularly his examination of the creation of mass media icons during the period between the two World Wars, elaborates the interlocking of media during the first half of the century. Modris Eksteins. *Rites of Spring: The Great War and the Birth of the Modern Age.* (London: Bantam Press, 1989). By no means an exhaustive list, but it does limn an essential outline of the growing literature on the years preceding the period of the research reported here.

By the Second World War the new media had already significantly

transformed understanding and experience of time and space[25]. With them

came altered conceptions and experiences of the limits of person, community,

and larger social aggregates and formations. It was the "*tele*" (distance-

bridging) dimensions of the new media, that so intensely influenced their

capacity to alter notions of time and space and person. Now all of time could be

made "present" in simultaneity. Visions of "this world" futures, conceived of as

better places to be, became common (faith in progress). The reach of the self

became ever greater. The immortality accorded nobility through oil painting,

was now available potentially to all through photography[26]. By means of these

new media one could extend oneself through time just as one could extend

oneself through space.

The notion of community had expanded to an imaginary level through the

emergence of the modern nation state[27]. In another way, new trans-national

communities evolved, as more broadly dispersed communities of interest and

intent could be formed through better expansion and elaboration of the new

media. Therefore, notions and experiences of person and relatedness could be

transformed, expanded, put into a flux, all through the emergence of the new

[25]While he makes little of McLuhan, Kern's discussion of the impact of new technologies on conceptions of time and space tend to support the thesis that new technologies urge and often lead to new ideas. Kern's discussion of the influence of the telephone and telegraph on diplomacy in the latter part of the pervious century and prior to the Great War is of particular interest: Stephen Kern. *The Culture of Time and Space: 1880-1918.* (Cambridge Mass: Harvard University Press, 1983).

[26]John Berger shows how photography came to supplant the European tradition of oil painting portraiture. See: Berger, John. *Ways of Seeing.* London: BBC & Penguin Books, 1973.

[27]Anderson ascribes a very large role to early print capitalism in the creation of conditions and markets conducive to the development and spread of ideas of nationhood. While his scope is more focused than McLuhan's, Anderson's work supports this one of the central theses of the *Gutenberg Galaxy.* Anderson, Benedict. *Imagined Communities: Reflections on the Origin and Spread of Nationalism.* (London: Verso, 1983), pp. 41-49, McLuhan, Marshall. *Gutenberg Galaxy: The Making of Typographic Man.* (Toronto: University of Toronto Press), 1962.

lively stuff. We are still speaking about tubes and transistors not tea pots and toasters. But it is this transforming world that provides the setting for McLuhan's intellectual project and his proposed method that we are trying to trace. We begin with the emergence of these explicit media forms because they are the first media McLuhan studied.

Many of the key figures in McLuhan's synthesis were readily apparent through the middle decades of this Century. Our inability to "see" the entelechies within our technologies was demonstrated in World War II and in the hybrids and intermedia wars being fought in the communication industries. In the decade just prior to the beginnings of McLuhan's synthesis, the stuff was apparently getting out of hand. Fifty-five million people would die as a consequence of the Second World War. In the first year of that war RCA first demonstrated TV at the World's Fair and the first experimental FM station went to air in New Jersey. These two media forms would contest over the ensuing decades. The war years saw the Valkeyries reappear in the new shape of the dive-bomber while the heavily armored and mounted shock troops of late medieval Europe would ride again -- in the form of the Guderian's Panzer Divisions[28]. The *blitzkrieg* invasion of Poland demonstrated the tank and airplane *led and coordinated by wireless radio* as the supreme tactical weapon. The emergence of this form of combined air and mobile artillery strike effectively put an end to the Episteme of trench warfare.

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[28] See the discussion of the use of sound as an additional presentative device for terror in Robert O'Connell. *Of Arms and Men: A History of War, Weapons, and Aggression.* (New York: Oxford University Press, 1989), pp. 114-115 and John Heskett. *Industrial Design.* (World of Art. New York: Oxford University Press, 1980), pp. 190-1.

Modern trench warfare had been born in the field of battle during the American Civil War (1861-1865). It was a response of fighting men faced for the first time with the witheringly accuracy and range of the colloidal bullet. The Episteme of the Ancien Regime which had dominated European warfare since the arrival of the musket disappeared. An elaboration on the phalanx of Greek Antiquity, this form of warfare called for deployment of men in opposing lines and exchanging fire. The smoke from the first two volleys as well as the "windage" of musket barrels quickly obscured the enemy line and accorded either combatant little accuracy. Indeed, arms doctrine for the musket placed an emphasis on rate of fire -- that is loading, firing and re-loading -- rather than accuracy. The rifled barrel, increasingly smokeless gun powder, wedded to a hunter's needs and guerrilla tactics of frontier combat with First Peoples, led to a weapon of deadly effectiveness -- the modern rifle, with its long-range accuracy[29].

In the Great War, the capacity of the rifle was amplified and accelerated with the deployment of machine guns. This did away with cavalry once and for all. A phalanx of men, mounted or on foot, out in the open was no match for a heavy Maxim machine gun. Machine guns, coupled with heavy artillery barrages, "implied" that one dug into the ground and hid there until there was a lull. One can only boggle at the experience of Innis' generation that fought that war. Part of the doctrine of that war still called for the bayonet charge. During offensives, waves upon waves of men left the relative safety of their trenches and met their death to rifle and machine fire in the horror of no-man's land. The

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[29]For implications of new weapons technology on modes of fighting see: Landa, De. *War in the Age of Intelligent Machines*. (New York: Swerve Editions, 1991), pp. 44-5.

tank was the British answer to the attrition of the First War, though it did not win the war, nor was it much understood nor deployed effectively[30].

The airplane as a weapon made its appearance in the First War. Metaphorically perceived as the inheritor of the Romantic ethos of the cavalry, the fighting plane produced a brief but colourful history of codes of honour and the fight of champions. There was a bit of Achilles and Ajax in the skies above the mud of the trenches. Canadian pilots, "colonial boys" who had no tradition of aristocratic cavalry to restrain them, as well as flying the dog-fights that punctuated the reconnaissance missions, began dropping explosives on German trenches. Besides limited anti-ground troop use and the enormous role played by the plane in reconnaissance, the application of airborne warfare had a larger impact on civilian populations than combatants -- the bombing of London and Belgium by dirigibles, for example.

The gasoline engine, the tank, the airplane, and the wireless combined at the outset of the Second war into a whole new doctrine of confrontation. Aerial bombing of civilian targets returned but now from fleets of heavy bombers. The biplane was transformed into a fighter-bomber which could deliver its payload with much greater precision. The lightning strike of the *blitzkrieg* was led from the air, hammered home by the mobile fire power of tanks, and then concluded by a mopping up by the infantry. Infantry supported and covered by tanks could flood enemy trenches and lines with apparent

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[30]The tank, in conjunction with the airplane, would become the quintessential weapon of the European Theatre of the Second World War. The strategic and tactical implications of the tank were never realized in the Great War. See: Robert O'Connell. *Of Arms and Men: A History of War, Weapons, and Aggression.* (New York: Oxford University Press, 1989), p. 265-7. Of particular note is his overall thesis about the relationship between weapons and weapon practices and cultural values especially in light of the idea of entelechy and conceptions of technological imperative and determinism.

impunity. Only the Poles attacked Guderian's tanks with cavalry. They proved not much less effective than did the impregnable Maginot Line shortly afterward as the war blossomed onto the Western European stage.

The war years, which McLuhan spent in North America, would see a freezing of most research and development on television. There would be no further research into applications of mass broadcasting, but the cat was out of the bag. Visual culture of the 40s was dominated by the movie and, wide-circulation picture magazines. Thus, with the film industry booming, and television around the corner, the printed word still played a significant role in mass communication. At the same time, the Forties would bring new colour print formats replacing the black and white formats of previous years. Glossy paper and better quality photographic reproduction would contribute to the evolution of a continuously stronger and more sophisticated visual culture in the mass media. In 1940 the Federal Court of Appeal, ruled that records purchased by broadcasters could be put to air, and the Journal Company of Milwaukee, applied for the first telecasting license. The following year, as the Germans invaded the USSR, "Citizen Kane" was released, one of the great masterpieces of the golden era of early American sound film. The film was a bleak commentary on empire and ambition, and is played out in the domain of publishing and mass communication.

The following year the American government identified morale on the "home front" an issue for concern. The motion picture industry, in an effort to shore-up morale, entered the Second World War, before America did. The degree to which the Second World War was a propaganda war cannot be

overestimated[31]. This should not take us away from the human condition and the suffering that was implied in 55 million deaths. But we also need to be aware that the possibilities afforded institutions and agencies through increasingly effective dissemination of new media, was not lost on either the governments nor the armies of the combatants. There is a general, and a particular here. The particular is that the new media and their promise lead to the evolution of a completely new infrastructure around those possibilities. This was a further revolution of the domain of "professional communication" that is the haunt of writer, copywriter, media relations, hack etc[32]. The general is that the new media enabled, or implied, perhaps to some extent impelled, a certain kind of organizational development and deployment. We shape our tools and then our tools shape us.

During the first half of the 40s propaganda was a doctrine pursued by all sides. The story of Goebbels interest in media war is well known. The Allies, sometimes rather more spontaneously also participated. In 1942 the commandant of the U.S. Marine Corps called on the J. Walter Thompson Co. to supply an advertiser to work in the interest of managing the image of the Corps. This initiative led to the emergence and proliferation of the PRO - the public relations officer[33]. The advertising industry in America, which was reaching a maturity in the twenties and thirties, was to receive yet another level of

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[31] The literature here is large. Both of the following provide a representative survey of the breadth of the sources. Victor Margolin, ed. *Propaganda: The Art of Persuasion: World War II.* (New York: Chelsea House, 1976), and Robert Edwin Herzstein. *The War That Hitler Won: The Most Infamous Propaganda Campaign in History.* (New York: Putnam's & Sons, 1978).

[32] While the PRO was a relatively recent phenomenon, the "vocation," or at least the modus operandi is quite old. Couliano, who has studied the social and cultural history of the magician in the Renaissance draws striking parallels between the means by which "magic" was effectively pursued in the 1500s and the activity of the modern PRO, and the "communication industry" as such. See, in particular Ioan P. Couliano. *Eros and Magic in The Renaissance.* Translated by Margaret Cook. (Chicago: University of Chicago Press, 1987), pp. 104-5.

[33] Paul Fussell. *Wartime: Understanding and Behavior in the Second World War.* (New York: Oxford University Press, 1989), pp. 153-164.

sophistication in its encounter with communication and image management in a war. On the home front the average American was spending an average of 4.4 hours daily listening to radio. Radio had become a pre-eminent commercial medium.

The following year witnessed the end of the war and found McLuhan with his Ph.D. in Windsor, Ontario. The Nuremberg Trials began the same year and soon, the world would see the proceedings on news clips and TV. In the USA, the war between FM and TV took a strategic turn, as the Federal Communication Commission encouraged development of television to the detriment of FM broadcasting. The Europeans, "after the rain," were faced with an enormous task of recovering and rebuilding their shattered economies and world. The radios and loudspeakers that had transmitted the wars of words that had accompanied hostilities, now carried American music. American movies and Coca Cola came back to Europe along with the advancing USA troops.

In the previous year the enormous potential of the stuff's lethal capacity was demonstrated at Alamogordo, when the Manhattan Project culminated in the successful testing of an atomic bomb. For the first time it became possible for humans to destroy at a rate unprecedented in the entirety of human history. America demonstrated the enormous power of this new stuff over Nagasaki and Hiroshima. The Nuclear Age and the Cold War had begun. It would take to almost the end of the century to end the latter. If it had been the A Bomb that had convinced the Japanese to capitulate to the USA, it was the computer that had given the Allies an edge on the Axis. Albeit lugubrious, the computer became a vital component in the war effort. Increased sophistication in the

sorting and analysis of information allowed the allies to crack the secret codes of their opponents.

1946 found McLuhan at the University of Toronto. Here he would encounter Innis and spend his entire intellectual career. The young professor of English arrived at the University of Toronto with a new "obsession" -- James Joyce[34]. Beginning with *Portrait of an Artist* and culminating in a life long fascination with, and study of, *Finnegan's Wake*, McLuhan would interpret the entire history of the evolution of the explicit media, through the work of James Joyce. That same year witnessed the biggest box office year in American film.

In his youth, Joyce had opened a movie theatre in his native Dublin. He and his generation were enthralled by this medium; there is as much of a cinematographer in Joycean prose as there is in McLuhan's. In 1946, ninety million Americans were going to movies every week. Film is a reproduction of some arranged reality. The average person up to that time had access to that kind of reproduction through the still camera -- well-generalized by this time in Western societies. But a new level of reproduction was standing by in the wings by 1946. That year, Chester Carlton invented the xerography process. The photocopy of documents, photographs, was now possible and would in a very short time become readily available.

Perhaps one of the most significant developments in the evolution and spread of the explicit media was to occur in the following year when Bell

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34English literary Modernism played a very significant role in the development of McLuhan's ideas. Ezra Pound and Wyndham Lewis were particularly influential, though McLuhan's "favourite" poet was T. S. Eliot. See: Philip Marchand. *Marshall McLuhan: The Medium and the Messenger.* (Toronto: Random, House, 1989), pp. 93-6.

Laboratories invented the transistor. Within a year, the transistor radio would be on the market. The "disembodied voice" that had been either firmly anchored to a wooden cabinet in one's home or blared at one through public address systems, could now become a private and mobile entry point into the expanding universe of radio broadcasting: disembodied voice "to go." The appetite for private consumption of public mass communication was growing. This was evidenced by *Reader's Digest* hitting a circulation of more than 9 million. The media were thriving: If FM was not, then AM radio certainly was. In 1948, the year that McLuhan met and began his collaboration with Carpenter, an anthropologist who had done field work in Northern Canada, radio was to enjoy its biggest money year. But in the battle for supremacy of the marketplace, from 1948 onward, radio was to decline as television would begin to take larger shares of advertising revenues. In response to the need for program schedule information, a reflection of the diversification of programming sources, *TV Guide* was founded that year in New York. Its publication would spread and expand into international markets within the next 20 years.

1948 hails the beginning of the boom years in the American advertising industry, the same year Claude Shannon of Bell Labs established Information Theory. Both have as their core interest effective transmission of information and minimization of "noise" that would impair this process. Both are concerned with performativity of the lively stuff. In the case of the former it is the performativity of information flows; in the case of the latter, it is the case of market communication. As the decade drew to a close, network television began in the USA, and the USSR tested its first atomic bomb. Radio station KOWH in Omaha became the site for the development of the first Top 40 radio format. That year Arthur Miller hailed the end of an era in *Death of a Salesman*;

George Orwell predicted a dystopian *1984*, and Fay Emerson became TV's first television female personality[35].

II

As we have noted above, the 1950s represented a significant point in McLuhan's intellectual project. His biographer tells us that in this period he discovered the study of communication. This may be true, though we know that he had exhibited an intense interest in popular media prior to the encounter with Innis[36]. McLuhan was interested in the rhetorical properties of the popular media and their critical evaluation. What had not emerged in his work was the framework for the broader scope of discussion that would be reflected in the *Gutenberg Galaxy*, and ultimately in the later work. For McLuhan, a man interested in the rhetorical properties of media and well-versed in the media-

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[35]Lorry Baritz. *The Good Life: The Meaning of Success for the American Middle Class.* (New York: Harper & Row, 1989), p. 203. For an elaboration and contextualization of one of the keys to Emerson's success see also Warner's critical discussion in Marina Warner. *Maidens and Monuments: The Allegory of the Female Form.* (London: Picador, 1985).

[36] Not only is this the case with McLuhan's studies of New Criticism, but his journals through his years at the University of Manitoba attest to an early and on-going interest in the expressions and provocations of mass/popular culture. Unpublished journals of March The 20 year old McLuhan writes:

> Slept straight thro [sic] till 8:30 and bounced out on looking at my watch. It was the only morning that I have a 9:00 lecture. I grabbed a poached egg, didn't shave, grabbed a street car and arrived on time [for] an illuminating lecture on the Development and Technique of modern advertising. It grew up as a result of war propaganda and was fittingly chosen as a weapon (after the armistice) in the war that knows no ending, the great industrial struggle. Economists have shown that the basic trouble to-day lies in the fact that too great a proportion of the national dividend finds its way into channels that unduly swell the stream of production. This surplus should be so-directed as to increase the purchasing power of the average person. The capitalist, in brief, has a ltd. consuming power and turns his surplus back into production. The over production results in a fierce attack on the pocket of the individual. The appeal is always to some powerful feeling in man: fear, pride, sex, wealth, ambition etc. Fifty years hence, a collect [in the original] if they have not proceeded to more absurd extremes, a volume of 1930 slogans and advertising tricks would make more interesting reading than anything that has appeared in a generation.

As an epigram written at a later date but on that same page, McLuhan notes "Jealousy is a green-eyed monster that doth mock the meat that it feeds on." See also p. 54 of the same journal for an elaboration of these ideas as referred to by McLuhan. Here he adds: "What America [sic] needs today is a "back to nature movement" among its youth. If society is to be saved we must swing as violently in the conservative direction as we have in the progressive direction. We must abjure machinery and sophistication in all its forms . . . but this is verbiage."

convergent experiments of the artistic avant-garde[37], the era in which he lived was a hot house in the dynamics that he was later to name "media studies". As Top 40, or Hit Parade, radio was emerging in the 50s, McLuhan would foretell the death of the mass public general interest magazines such as *Life* and *Post*. In the 1950s, TV audiences surpassed radio audiences in daily hours a week. Many adults gave up movies for television, and new television formats were quickly beginning to emerge.

For McLuhan's generation, the world had been transformed by electricity. Telecommunication had been possible before, but it was completely based on human senses with no amplification to the faculties. As early as the 16th Century Cossacks living in the Dniepre Basin of the Black Sea steppe had devised a series of towers that could send smoke signals with great rapidity to warn peasant population of approaching Tartar slave-raiding parties. Some three centuries later, equipped with the telescope, Napoleon's armies had used semaphore for distance communication. As Kern demonstrates, the arrival of telegraphy and telephony, however, changed the shape of experience of time and space and the practices of business, diplomacy and war. As both Czitrom and Havelock attest, it was the electrification of media of communication that brought the media to attention and generated the first comprehensive media and communication theories[38].

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[37]The Modernist and Symbolist contributions to both McLuhan's media theory and contemporary multi-media practice are elaborated by Richard A. Lanham. *The Electronic Word: Democracy, Technology, and the Arts.* (Chicago: University of Chicago Press, 1993), pp. 31-52, and 58. McLuhan's own application of these techniques to interpretation in Marshall McLuhan. *The Mechanical Bride: Folklore of Industrial Man.* 1967: Beacon -- Boston ed. (New York: Vangaurd, 1951), pp. 85-87.

[38]See Daniel J. Czitrom. *Media and the American Mind: From Morse to McLuhan.* (Chapel Hill: University of North Carolina Press, 1982), *passim* and Eric A. Havelock. *The Muse Learns to Write: Reflections on Orality and Literacy from Antiquity to the Present.* (New Haven: Yale University Press, 1986), pp. 30-33 and *passim.*

Just as electricity had transformed the material realm earlier in the century the transistor was to further permutate the electrical realm and the material realm with it. By the 1950s a new trend, to which I will return, would take concrete shape -- the rather paradoxical "de-materialization of the object." Varieties of planned obsolescence, disposability and other factors, as well as the miniaturization implied by increasingly effective electrical technologies and transistors, would lead to a process in which the discrete object would be redefined within the complement of the stuff of life. Related to these processes were transformations in forms of work. This is clearly demonstrable in the electrification of the office[39]. The lively stuff in the home was changing and spreading. By 1950 there were 1.5 million TV sets in American homes. While we cannot say that McLuhan was conscious of everything going on around him, his interests in publishing and enthusiasms for various media of communications, would certainly attest to awareness of some of the larger issues unfolding in the technosphere and communication ecology around him[40]. The two wars had demonstrated the carnage implied by "rear-view-mirrorism" and the struggles between FM, TV and the periodical press, and the movies, were clear demonstrations of how media forms were brought into conflict with one another and subsequently bred hybrid media.

1950 was not a bad year for the periodical press: the gross annual revenues in magazine advertising exceeded 5 million in the US. Movie attendance, however, was in decline. Univac by Rand Corporation was

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[39]Marco Diani. "The Social Design of Office Automation." In *Design Discourse: History/Theory/Criticism*, edited by Victor Margolin, 67 - 76. (Chicago: University of Chicago Press, 1989.), pp. 69-72.
[40]The archival collections for this period bear this out. McLuhan gathered bits of the press, ads, brochures and all manner of published print and graphics, and then recorded and video-taped material to assist him in his study and interpretation of the media ecology. *The Mechanical Bride* was "born" out of a set of such ads torn from magazines, and McLuhan's short essays on them. Philip Marchand. *Marshall McLuhan: The Medium and the Messenger.* (Toronto: Random, House, 1989), p. 35.

developed. Univac, the next "child" of the new computer generation, was comprised of 5,000 tubes. Within 30 years the behemoth would shrink to the size of an attaché case. By 1951 the experiment started at KOWH in Omaha, brought many followers as hundreds of stations switched to a DJ and Top 40 format. The first generation of TV shows such as "Honeymooners" and "I Love Lucy" were to create new audiences from 1950 onward. These early programmes were set in downtown locations, and would, over the next number of years, shift to the suburbs as did the American imagination.

An odd reversal was articulated in 1950 when William Golding's "CBS Eye" logo was adopted by the network almost suggesting that the stuff was now somehow watching us. The following year a great critical institution of popular culture was born when the late William Gaynes first published *Mad Magazine*. That same year Nixon, with his dog Checkers on lap, pleaded his innocence. The letters of support precipitated by his appeal confirmed the potential political power of TV. Meanwhile Univac itself, became a TV celebrity, outguessing the experts in predicting the American elections. Fewer Americans were reading books. In a poll conducted that year, 18% of those polled said they were currently reading a book. That year there were 5 million TV sets in the United States of America: Within 4 years that number would increase to 29 million.

 In 1953 McLuhan received a grant from the Ford Foundation which would enable him, in collaboration with a handful of colleagues, Carpenter chiefly among them, to conduct a series of increasingly diverse studies into media and technology. These studies, as well as related ones of others would be reported in articles in the journal, *Explorations. Explorations* , edited by McLuhan and Carpenter, demonstrated a wide interest in questions of

communication and media, and was composed in a graphically sophisticated and arresting fashion[41]. Taking from both, the inheritance of the avant-garde of the previous two decades, and from models and implications of mass media formats, the journal experimented in layout and use of typography. The interests in rhetoric, the arcane world of Joyce, as well as the Innian broad framework of media history, were beginning to converge with studies in anthropology, graphic and visual communication and the human sciences. Even as McLuhan and Carpenter were exploring new media and their shaping of the messages, content and meaning that they conveyed, the Western world began increasingly adapting portions of daily life to the new media.

There were nearly 30 million TV sets in the States. While still unsuccessful, marketing efforts were being made to sell a second set to each home - this one for the kids. Broadcasters began adapting "rolling" and "magazine" formats to children's programming developing shows like "Howdy Doody" and "Buffalo Bob Smith," to support and present other more traditional formats of children's programming such as story-telling and the animated cartoon. Saturday sports were getting more support from sponsors and *Sports Illustrated* was founded that year by Time Inc. That same year the water commissioner of Toledo Ohio noticed that water consumption sharply increased for 3 minute periods during commercial breaks on TV primetime.

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[41]A must for any McLuhan scholarship is a testy article by Carpenter called the "Not So Silent Sea." Originally circulated in mimeograph form, this article which provides Carpenter's take on the McLuhan phenomenon and its origins and evolution, was published in a much-edited and more careful form as Edmund Carpenter. "Remembering Explorations." *Canadian Notes and Queries* 46, Spring (1992), pp. 3-13.

In 1957, in an address in Vancouver, Canada, McLuhan first uttered the his often-quoted phrase, "the medium is the message[42]." Kemeny and Kurts developed the BASIC programming language. We were learning how to better programme the machines, and the stuff seemed to be programming us. The television came to occupy a new spot in the living room and thereby rearranged the organization of domestic space. The Tube secreted TV trays, TV dinners and meal scheduling to suit TV programme choices.

The programming was perhaps getting more enthusiastic; certainly more lively in 1955 when "Rock Around the Clock" by Bill Haley and the Comets became the first hit to make number 1 on the charts. The move to rolling format was perfectly suited to accommodate the emergence of the rock era of radio broadcasting. It was the beginning of that period called by Hine, "Populuxe[43]"; an era in which America rediscovered a re-defined youth[44]. In that year one hundred million dollars was spent on comic books: substantially more than allocated to libraries. TV quiz shows appeared as did a car-buying craze in America.

As the 50s drew to a close nearly one million people in the United States of America would be working in the advertising and public relations industries. Mass media would continued expanding. By the end of that decade scandal would begin to shake the media industries as revelations of

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[42]Philip Marchand. *Marshall McLuhan: The Medium and the Messenger.* (Toronto: Random, House, 1989), p. 137.

[43]Hine's *portmanteaux* combines "popular" and "luxury," which were/was the cultural selling proposition of the period. See: Thomas Hine. *Populuxe.* (New York: Knopf, 1987).

[44]We note that the 50s were about the "re-discovery" and "re-definition" of youth in as much as "Youth" had very much made an arrival on the cultural stage during the Romantic periods (early part of the previous century) and "Jungend" movements (turn of the last century) in Europe, and in the "Roaring 20s" in the USA. For something of the European experience see Hillier, Bevis. *The Style of the Century: 1900 – 1980.* (New York: Dutton, 1983).; and for the American variations (flappers and sheiks) see Baritz, Loren. *The Good Life: The Meaning of Success for the American Middle Class.* (New York: Harper & Row, 1989), 56-104.

manipulation of broadcasters and audiences by means of "payola" became news. These were to be followed by scandals in TV around quiz shows. Hugh Hefner, who founded his *Playboy* that year, would become a "culture hero" as the magazine would reach subscriptions of nearly 1 million. The love affair with The "Mechanical Bride," so aptly described by McLuhan a decade previous, would lead to 1 and 1/4 million more dead than all American deaths in all wars combined.

As the 50s ended, McLuhan undertook an extended research project funded by the National Association of Educational Broadcasters of the USA which would be reported in 1960. This report would contain most of the essential ideas that McLuhan would rework for the rest of his career. Coming as it did in 1960, the report was based on the state of the mass media in the early part of that decade. The fieldwork was done in 1959, and was comprised of extensive reading and some interviewing of media executives as well as other explorations in the mass media industry[45]. Even as TV set penetration reached 85 million in America, and the Cold War was becoming a fact, McLuhan was putting together the work that he had begun on Innis and the interests of his earlier researches. The 1960s would see McLuhan appear in the mediascape as a "guru" of sorts, then achieve enormous notoriety, and then disappear almost into oblivion for the last decade of his life.

If in 1960 there were 85 million TV sets in America the next year FCC Chairman Newton Minow described TV as a "vast wasteland[46]". That year

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[45]Philip Marchand. *Marshall McLuhan: The Medium and the Messenger.* (Toronto: Random, House, 1989), p. 136-141.

[46]Karyn Rybacki and Donald Rybacki. *Communication Criticism: Approaches and Genres.* (Belmont, CA: Wadsworth, 1991), p. 4.

Gagarin went into space, the stuff was certainly getting us off the planet, and the following year the stuff was again employed in war, when American troops were deployed to Vietnam. The "Beverly Hillbillies" came to TV and during the October Cuban Missile Crisis the possibility of nuclear holocaust came to everybody *via* TV. TV and telephone links that had been established between Europe and USA made live transmission of broadcast between continents possible. That same year Marshall McLuhan published *Gutenberg Galaxy.* In this book he brought together his interest in popular media, the rhetorical inheritance, and the broader historical framework and "transformation theory" pioneered by Innis. *Gutenberg Galaxy* earned McLuhan the Governor General's Award for non-fiction that year, and it remains his most widely read and most often quoted work to date. Translated into most modern languages, the book and subsequent books and notoriety, made of McLuhan an international figure. But this was still to come. McLuhan's report to the NAEB was never published. It was to become the basis for a high school curriculum but was not adopted by educators. We will explore the reasons for this in the next chapter. The exhaustive analysis of media forms and their impact on information and experience (social organization etc.) was still looking for an articulation. By the time *Gutenberg Galaxy* had been published, the research for the NAEB was taking a new form under the title, *Understanding Media*[47].

The following year McLuhan, like nearly everyone else, witnessed the assassination of John Fitzgerald Kennedy and the killing of Lee Harvey Oswald on TV. The Western World had been brought together in a "communal electronic experience" around the assassination of the American president. It

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[47]Philip Marchand. *Marshall McLuhan: The Medium and the Messenger.* (Toronto: Random, House, 1989), p. 136-141.

did seem that we lived in a "global village" where we knew more and more about what other people were doing, or thought we did. The apparent immediacy of events, and their coverage, and the reach of live transmission, were transforming if not the perceptual world, then certainly our expectations of our perceptual world[48]. Things were moving faster and faster; the stuff was clearly intrusive, permutative and proliferant. Details of change were becoming outdated even at the date of their publication. In this blur, broader patterns such as those implied in the generalization of literacy through print, could be seen -- or at least McLuhan said he saw them.

McLuhan's *Understanding Media* would propel him into first American, then international notoriety. Canadians, along with most of the academic establishment, did not seem to make much of McLuhan. An article in 1965 by Tom Wolfe, and a cover photograph on *Newsweek* did not improve his stature in these circles. In America on the other hand, McLuhan was quickly becoming the darling of the media of whom he was in fact becoming increasingly critical. While his public pronouncements would shift and contradict, we can see in them McLuhan's own growing ambivalence about the benefits finally to be derived from the proliferant new lively stuff. This divided voice, this deep ambiguity, would remain in one form or another for the rest of McLuhan's life[49]. We will return to this. But we should note that "Canada's intellectual comet"

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[48]While not entirely critical, a corroboration for many of McLuhan's projections of the effects of the new media on social life, social movements, organizations and the shape of social conflict can be found in Joshua Meyrowitz. *No Sense of Place: The Impact of Electronic Media on Social Behaviour.* (New York: Oxford University Press, 1984), pp. 131-149.

[49]Northrop Frye. Edited by James Polk. *Divisions on a Ground: Essays on Canadian Culture.* (Toronto: Anansi, 1982.), p. 54.

became a product of the very thing that he was studying, and the ironic reflexivities of that still await more in-depth study[50].

By the time McLuhan's star was in apparent ascendance, 1966, colour television had become popular, and one of the great icons of the American mediascape, "Bonanza" had come to TV. That same year FM radio, hampered in its development because of AM radio and TV, began to experiment with "underground" formats. In contrast to the single-title controlled Top 40 formats of AM radio, FM DJs were given the power to program their own shows usually playing tracks from albums. This shift to a more diverse play-list a renewed emphasis on the personality of the DJ demonstrated a following that would grow. McLuhan's star had risen fully by 1967, Canada's Centennial year. It all rather worked together as an image: the huge, hi-tech golf ball at Expo '67, a series of cantilevered gray boxes by Safdi, and a media guru speaking an arcane language, that always seemed that just this side of plausible. That same year, *Rolling Stone* was founded, and NBC released a film on McLuhan named, after on of the first pieces of "multimedia," *The Medium is the Massage*[51].

The Medium is the Massage, seen as an aggregate, was a book, a film and TV broadcast, as well as a long-play high fidelity recording. In all three cases lively stuff. It was the generalization of a number of lessons McLuhan learned from the study of the avant-garde: It was mediascape held up to mirror mediascape: new media to forecast still newer media. The aggregate was a

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[50]Marchand does this justice, and one has to marvel how he made sense of the enormity of the McLuhan archive (which he originally organized). Working with the collection, however, it is clear that there are number of topics that would benefit from further work. McLuhan's relationship with advertising is just one such area.

[51]Marshall McLuhan and Quentin Fiore. *The Medium is the Massage*. 1989 ed. (New York: Simon & Schuster, 1967).

mix of image, sound, movement, graphic and spoken word. *The Medium is the Massage* did little to endear McLuhan to scholarship, but did a great deal to turn his name into kitchen table stuff. His became a name to drop[52].

The following year, Englebart demonstrated the mouse, windows, and other rudimentary, interactive applications for computer technologies. These developments would quicken the evolution of the user-friendly computer. TV culture was becoming global: by that year 78 million TV sets were in use in the States, 25 million in the USSR, and over 20 million in Japan. More assassinations occurred on national television with the deaths and funerals of Robert Kennedy and Martin Luther King covered by the networks. That year, while not citing McLuhan, Kubrick gave the dictum, "we change our tools and our tools change us," a powerful articulation in his "2001: A Space Odyssey." That same year, unprecedented viewer protest, brought "Star Trek" back for a third season. McLuhan brought together his ideas about war and technological progress and consequences in *War and Peace in the Global Village*, and brought together his ideas about the impact of shifts in media and experience of space and time in *Through the Vanishing Point*[53].

McLuhan's central theses about the effect of changes in technology, specifically explicit media, and attendant changes in the social world continued to receive illustrative support as the decade drew to a close. In 1969 McLuhan

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[52]McLuhan kept scrapbooks of press clippings and reviews throughout his career. In one of the scrapbooks from the period of the peak of his notoriety is an ad from the New York Review of Books featuring a sultry model who looks provocatively out at the viewer. The text to the ad suggests that being able to deal with McLuhan's ideas is a sign of being more than able to handle a man. The ad is for Cosmopolitan Magazine. The ad was mailed to McLuhan by an admirer or associate and comes with a small hand-written note attached which reads "Marshall — you've made it."
[53]Robert Romanyshyn, to whom we will have occasion to return, builds his insights on technology on the groundwork established by McLuhan in *Through the Vanishing Point* McLuhan, Marshall and, and Harley Parker. *Through the Vanishing Point.* (Edited by Ruth Nanda Anshen, World Perspectives. New York: Harper & Row, 1968).

was interviewed by *Playboy Magazine*: Not all that odd that one sees McLuhan most speaking in a divided voice in that interview[54]. The adult convert to Catholicism[55], and student of emergent media, explaining his non-theory theories to an audience of college boys mostly interested in the mammaliary cult of late Sixties America[56]. McLuhan is at once full of enthusiasm about the potential benefits of new media -- he foresees a new Pentecostal condition because of electronics and computerization -- and he also sees the new configuration of media destroying the values by which he himself imagines himself to be living. The world is transforming. Telecommunications is turning the globe into a potentially smaller place. The subtext, the unthinkable, of the Cold War through the rhetoric of killing power, overkill, and telematics, have created the possibility for the human species to theoretically destroy all life on the planet. That year, exactly 360 years after Galileo observed the moon through the telescope, we arrived there as TV spectators in mid-July[57].

Apollo 11: the lunar module Eagle landed on the Sea of Tranquillity: On the night of the landing, the networks broadcast an interview with an old man who, as a boy, had witnessed the fragile bicycle-frame Kitty Hawk take to air. That same year there were approximately 225 million telephones in service all around the world; 114 million of them keeping people in touch in the U.S. "Easy Rider," released that year, became the model for a stream of message-driven, youth-oriented films. The culture of Populuxe was giving way to a new cultural configuration in the Western world, certainly in North America.

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[54]Marshall McLuhan. "Playboy Interview." *Canadian Journal of Communication.* December (1989): 134 - 137.

[55]McLuhan was baptized into the Roman Catholic Church by the Rev. Alivn R. Kutchera, Chaplain of University of Wisconsin, in Madison March 24th, 1937.

[56]Loren Baritz. *The Good Life: The Meaning of Success for the American Middle Class.* (New York: Harper & Row, 1989.), pp. 186-195.

[57]Robert Romanyshyn. *Technology as Symptom and Dream.* (London: Routledge, 1989).

The 1970s, it has been said, were the decade that taste side-stepped. The "peacock revolution" devolved from bell bottoms and patchouli oil to fortrel, leisure suits and platform shoes. It was also the decade of the great space adventures of the USA and the final gusts of the Cold War. During the 70s McLuhan fell out of favour with the mass media, and the man who had been hailed as the "prophet of pop cult" became increasingly morose about the implications of the electronic media, and apocalyptic in his view of the future. Marchand titles this last phase of McLuhan's life under the friendly rubric of the "Sage of Wychwood Park". It was during this last decade of his life that the encounters with Innis and the study of communication would render a final synthesis which would be the basis for what we are calling here McLuhan's Method.

By 1970, there were 231 million television sets in the world. The following year *Look* magazine had ceased publication and the Intel 8008 microprocessor had emerged into the technosphere of the late Twentieth Century. Access to micro-processing was increasing, but so also was the extension of "man into the cosmos". That same year, 1971, Apollo's 14 and 15 flew to the moon, and the extension of humanity to the lunar surface was becoming a firm and apparently repetitive reality. As significant as humanity's reach to the stars was the continuation of McLuhan's research to him. In 1971 McLuhan's journals indicate that he was arriving at a synthesis of his life's work. From his letters we note that he writes that on that year he made the "biggest discovery" of his life. As he writes, "It happened while I was working on the

preface for Innis' *Empire and Communication*[58]. That year McLuhan arrived at the synthesis that would provide the basis for the theoretical constructs of the next 10 years -- ideas such as entelechy and the tetrad, which we will elaborate below.

The implications of this discovery were enormous as they pointed beyond the explicit media to what I am here calling the unified field of media studies. The notion of entelechy and the intellectual strategy that was to emerge as a tetrad, could now be applied to nut-crackers and nuclear bombs. The tension implied in the distinction between (explicit/implicit), or the determination of what was meant by the term media, was becoming increasingly apparent. In his theoretical work McLuhan was being pushed by a logic implied by the object of study into a domain of theory that he himself was uncertain of. But it was a question of the logic of the object, and not of the subject studying it. For the media were evolving at an formidable rate.

Media were merging to produce new hybrids -- the wire photo brought xerography to telephony and print. Dynamics that Innis had identified through the history of the West were appearing in ever sharper resolution as the new and improved -- phones, teletype, TV, videos, musical instruments and sound reproduction technologies -- gobbled up yesterday's wonders. Peripheral business aggregates moved to centre stage as they exerted monopolies over new emergent media and formats. Older media and formats, rather than disappearing took on new dimensions within the media ecology as newer forms arrived. Well-entrenched media forms and corporations could be toppled

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[58]Matie Molinaro, Corinne McLuhan, and William Toye, eds. *The Letters of Marshall McLuhan*. (Toronto: Oxford University Press, 1987), p. 429.

quickly enough if the right mix of capital, technology and audience were available.

In 1972 the end of *Life* magazine foretold with typical cockiness by McLuhan in the mid fifties became a reality. Not only had *Life* died, but a new conception of womanhood was articulated in the mass media with the emergence of *Ms.* magazine. The Germans, who had lost two bids at world domination through war, were in the process of their own kind of "reversal" by producing the second best selling car in American history. It was the year that the Volkswagen Beetle achieved unprecedented sales in America and this on the eve of the energy crisis that was to occur in 1973.

1973 was truly a watershed year for America, and by extension, for advanced market industrial societies. One thing was clear and everyone knew it: American society was completely dependent on oil. That same year the Watergate affair seriously undermined American faith (at that time) in their government. This set of events also demonstrated the burgeoning power of the mass media and particularly television. McLuhan's journals and letters from that year reveal an intensified interest on his part in the notion of discarnality-effects of the new media. The electronic media with their telematic power were to increasingly haunt McLuhan -- the Roman Catholic for whom the mystery of life was tied up with the Incarnation. This turn to increased disembodiment and telematic capacity, was to amplify McLuhan's apocalyptic vision of the broader implications of the new electronic media. It was also that year that witnessed McLuhan's first public statement of his "discovery" of the "Laws of Media", a.k.a. tetrads.

Just as *Take Today* would be received in an almost complete silence, so
also were McLuhan's "laws". McLuhan's capacity to generate books that did
not sell, became increasingly mythic but the explicit media continued to evolve,
in effect, catching up with the prescience exhibited by McLuhan's "poetic
ramblings". It was about to take off: The young Negroponte was appointed
director of MIT's media lab that year and Tony Schwartz published the
proceedings of many hours of discussions with McLuhan in his influential book,
The Responsive Chord[59] In this book Schwartz provided a codification of what
the advertising industry knew well and McLuhan himself had suggested 20
years earlier (and poets have known since there has been poetry) -- implication
and suggestions are more effective ways to convey complex information than
exposition.

The year Schwartz published his re-working of many of McLuhan's
ideas, Negroponte had joined MIT and would begin to elaborate the vision of
the new cyber-reality. The following year the Altaire 880 was introduced. This
was the *de facto* first possibility of the personal computer. The PC would
provide access for the average person to the formidable data storage
processing and retrieval capacities of the computer. Additionally the computer
could be a very sophisticated toy while being a tool -- the vision of "interactivity."

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[59]Tony Schwartz. *The Responsive Chord*. (Garden City, New York: Anchor/Doubleday, 1974). Schwartz's
book was widely read in the communication industries and post-secondary educational programs. There is a
great deal of field-won pragmatic insight in this book, and there is a great deal of McLuhan. Schwartz may
have been an important medium by which many of McLuhan's "theories" actually got to the media. Marchand
notes, and this founded on the facts, that books by collaborators about McLuhan are usually clearer about
his ideas than he was himself. For McLuhan's relationship with Tony Schwartz see Philip Marchand.
Marshall McLuhan: The Medium and the Messenger. (Toronto: Random, House, 1989), pp. 196-7. The
student struggling with Gutenberg Galaxy can get some relief by locating Nevitt's *The Communication
Ecology: Re-presentation versus Replica* which provides a very useful schematic of that classic. For
example, there are interesting effects to be had when McLuhan's chapter glosses are organized
chronologically. See Barrington Nevitt. *The Communication Ecology: Re-presentation versus Replica*.
(Toronto: Butterworths, 1982), pp. 129-134. In following Nevitt also helps unpack some of McLuhan's
insights such as the "Laws" of media on p. 145 and a useful "unpacking" of the distinguishing counterpoint
between cultures based on visual and audile biases on pp. 150-53.

In 1976 Steve Wozniak designed the Apple II. Together with Johns, they ushered in the idea of the first truly affordable personal computer onto the market.

In 1976 McLuhan made his well-known cameo appearance in Woody Allen's "Annie Hall." Returning from the shooting session he would experience a major heart attack and stroke from which he would never completely recover. The following year saw the publication of McLuhan's last book, *City As Classroom*[60]. The book was poorly received and to this day remains almost completely unknown to the students of communication. This is particularly unfortunate as *City As Classroom* is one of the best examples of the way in which McLuhan's mind actually worked. Free of jargon and full of humour, the book is a vivisection of the practices of the explicit media. It remains a source for much worthwhile research and pedagogical practice to this day. Because the hypermedia had not yet emerged, this book is dated. But its applicability to the media of the day, and its implications for the emergent media, remain rich and salient. In 1977, as McLuhan's *City As Classroom* was published, the Microsoft Corporation was founded.

The following year, 1978, *Life* was reborn, but now as a monthly. Even as the arcane observations of McLuhan had foretold, it was "recorso", "once again anew," *Life* was *Life,* but *Life* was different. 1979 brought with it the first micro-modem paving yet another significant step toward the "Infobahn" of the late 90s. Sony released the "Walkman" -- the miniaturized every person's access to the vast store of musical memory, and a cornucopia of the music

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[60]Marshall McLuhan, Eric McLuhan, and Kathryn Hutchon. *City as Classroom: Understanding Language and Media.* (Agincourt, Ont: Book Society of Canada, 1977). See also Marchand's discussion in *Marshall McLuhan: The Medium and the Messenger.* (Toronto: Random, House, 1989), pp. 263-4.

industry. On September 26 of that year, McLuhan experienced the last major stroke of his life; it left him paralyzed incapable of speech. His journal for that day in his secretary's handwriting notes that at 4:30 he was rushed to the hospital. A few days later he was to have gone to Brazil, and a few days following that was to meet Jacques Derrida for lunch at the University of Toronto. All appointments canceled. The following 15 months were painful for McLuhan, as from a position of weakness, he watched the University of Toronto disassemble his "Centre for Culture and Technology." In the last year of his life the unimaginable almost happened. Though McLuhan and the rest of the world were unaware of it.

1980 brought with it one of the largest TV events of history. Everybody in America wanted to know who shot JR. on "Dallas." Everybody agreed the following morning that ultimately the writers had copped-out settling for a dream rather than a more sophisticated unraveling of a relatively interesting plot. This was not the unimaginable. Nor was the announcement of Ethernet jointly advanced by Xerox, DEC and INTEL. A new phase of media wars was about to begin. But this was not the unimaginable either. The 1980 Census which indicated that 63.65% of all American households owning electric can openers was not all that surprising nor was the fact that 99.9% of all American homes had vacuum cleaners, toasters, coffee makers and irons. What was unimaginable was the fact that the world almost entered a nuclear war and not because of some disagreement between world leaders, but rather because of a failure of a computer communication system. This took place on the third of June.

As reported by Watson, in June of 1980 something inside WIMEX (Worldwide Military Command and Control System), the electronic nervous system of the United States nuclear arsenal, went haywire. WIMEX set in motion all the machinery for a retaliatory nuclear strike against the USSR, except that the USSR had not declared war, and there were no bombers over Whitehorse. Three minutes and fourteen seconds into the sequence, in short minutes before the "apocalypse" that McLuhan had feared, humans forcibly intervened and shut WIMEX down[61]. The nuclear holocaust had been averted.

As that year drew to a close, sometime during the night of December 31, McLuhan died.

III

McLuhan's death had no impact on the media he studied. At most, he became the footnote in the study and practice of communication, or so it seemed. Media wars continued. More and more AM radio stations switched to talk formats as FM radio came to dominate music radio programming. The first flat screen pocket TV in prototype form was demonstrated by Sony. And the nascent Macintosh Corporation shipped out its ill-fated LISA. Two years later Macintosh would introduce its immensely successful Apple. The information highway and all the implications of the ever-new media, were just around the corner. The following year, 1983, IBM introduced its PC junior and only 20% of adult Americans were going to the movies -- this compared to 40% of adults in

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[61]Lyall Watson. *The Nature of Things: The Secret Life of Inanimate Objects.* (London: Sceptre, 1991), p. 10.

1935. The video revolution was about to take off, and television was clearly the dominant force in American media.

The next year Macintosh introduced the Apple and MTV was now playing a key role in determining FM music play lists. 1984, the year that Orwell foresaw as an age of global tyranny, was also the year which William Gibson published *Neuromancer*[62]. In this novel, Gibson created an imaginary world which a trend in the computer industry pursued for the rest of that decade and pursues to this day. The concept of cyberspace was born in a novel. Virtual reality technologies, were an attempt at the realization of this vision. Media wars would continue unabated. The following year *Playboy* announced a 30% decrease in newsstand sales, whereas the graphic interface became widely available in modern industrial societies.

The development of silicon technologies would continue to increase at an unprecedented rate. In 1986, Senjowski developed the "self organizing machine". This computer program would demonstrate the implications of "silicon life[63]". The next year, 1987, saw the introduction of hypercard by Macintosh and the return, the *recorso*, of "Star Trek" in the "Next Generation." 1987 also saw the publication of Steward Brand's *Media Lab*[64] which hailed Negroponte's vision of the convergent media of the future. That same year Heim published *Electric Language* in which, he demonstrated the continuing

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[62]William Gibson. *Neuromancer.* (New York: Ace, 1984).

[63]O. B. Hardison, Jr. *Disappearing Through the Skylight: Culture and Technology in the Twentieth Century.* (New York: Viking, 1989), p. 311.

[64]Stewart Brand. *The Media Lab: Inventing the Future at MIT.* (New York: Penguin, 1987). Brand's opening epithet is drawn from McLuhan and he quotes McLuhan 8 times in his discussions of the wonders that were awaiting us in the 80s at MIT.

applicability of many of McLuhan's ideas[65]. If movie audiences were decreasing they were still formidable with 22 million Americans seeing a movie each week. TV had not killed the cinema, but was transforming it.

In 1988 McLuhan made his first posthumous return. The ideas originally pioneered in 1973, received their first extended public release in a book "co-authored" with his son Eric -- *Laws of Media: The New Science.* Statistics showed that in that year there were 1300 TV stations broadcast in the United States of America. But this force was already being undermined by the emergent cable and satellite industries. The short-lived, but highly touted, NEXT computer hit the market. By the following year, 1989, home video games reached $3 billion in sales. That year nearly 20 million video game systems were sold along with 50 million games. McLuhan's second posthumous book appeared that year; in this case "co-authored" with Bruce Powers -- *The Global Village.* That same year, O. B. Hardison published *Disappearing Through the Skylight,* a book which, while never acknowledging McLuhan, repeated some of McLuhan's significant insights from *War and Peace in the Global Village* of 1968 right down to the citation of Yeat's "Sailing to Byzantium" as part of the conclusions[66].

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[65]Heim, discussing "transformation theory" to be addressed below, calls McLuhan's student Walter Ong the "thinking man's McLuhan." Michael Heim. *Electric Language: A Philosophical Study of Word Processing.* (New Haven: Yale University Press, 1987), pp. 57-66.

[66]O. B. Hardison, Jr. *Disappearing Through the Skylight: Culture and Technology in the Twentieth Century.* (New York: Viking, 1989). See also Marshall McLuhan. *War and Peace in the Global Village.* (New York: Touchstone, 1968), p. 177; almost 20 years previous McLuhan writes:

> Unlike animals, man has no nature but his own history -- his total history. Electronically this total history is now potentially present in a kind of simultaneous transparency that carries us into a world of what Joyce calls "heliotropic noughttime." We have been rapt in "the artifice of eternity" by the placing of our own nervous system around the entire globe.

The 1980s, the decade immediately following McLuhan's death, were the period during which the explicit media began to take on the shape of things to come. Literature of that decade is replete with mention of hypermedia, media convergence and, as the decade ended, much discussion of the anticipated wonders of virtual reality. This decade was increasingly demonstrating that the stuff was lively indeed. That the stuff was productive had probably been known by the species since its first "human" formations. It had been imagined as performative but it was limited in our knowledge of mechanics, electronics, and the rest of the panoply of technological achievement that had brought us this lively stuff. The acceleration of its permutation became increasingly apparent with the growth of the entertainment industries' continuous innovation of both hardware, software and exponential development of telecommunication in its various forms. McLuhan, who had reached the decade previous, had foreseen much of what unfolded in the 80s. The same can be easily said of the early 90s. McLuhan saw in the history of media and in these developments both a theoretical construct and intense pragmatic personal and public implications. While in the guise of trickster or sage, pedagogue (demagogue) or poet, his intent was to produce a method by which a society such as ours could prepare itself for what was still unknown *but* already implied in what existed and what could be imagined.

Thus it was that the object of McLuhan's study had not only permutated in front of his eyes, but what he saw in the permutation was patterned. Innovation, while turbulent and perhaps subject to the dynamics of chaos theory, also seemed to unfold in evolutionary form. The key dynamic seemed to be in the capacity of technologies to pose new problems while solving old ones. The patterns that McLuhan saw in all of this also had an esoteric dimension,

perhaps one might call it "a magical dimension." This "magical dimension" would have to do finally with the human experience of time and a recursive rather than a forward motion conception of cultural history.

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As the 1990s come to a close we read the McLuhan of the 1960s and wonder what all the fuss was about. Students today are a bit bemused about why some of these ideas had been so hotly debated. But then consider the technological, projected, imaginative or concrete, realities in which the kids operate today: CD-ROM, VR, Internet, and all the rest of it. The TV which the previous generation grew up with is no more, or at least is becoming less and less what it had been. Today we "graze" or "surf" or "zap" as the case may be. Today everyone can, for a reasonable cost, shoot their own videos or engage in desktop publishing. McLuhan had foretold the death of *Life* and the end of the Age of the Book. It is perhaps one of the great ironic anecdotes of McLuhan's career that the book *Understanding Media* was born following a speech by McLuhan announcing the end of the book. An enterprising executive from McGraw Hill there and then approached him to do a book on that topic[67]. McLuhan's critics are quick to point out that the book has not gone away. In fact they say, more books are being published today than in any previous period in our history. But as Heim and others have argued, "the Book" is no longer the center of our intellectual culture[68]. We are no longer trained in the classics nor

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[67]Philip Marchand. Marshall McLuhan: *The Medium and the Messenger*. (Toronto: Random, House, 1989), pp. 168-9.

[68]Lanham sees the arrival of convergent media as a positive contribution to intellectual culture and as a recovery of a renewed acuity in our thinking about how language is used and what it is. Much of his discussion is a reconsideration of aspects of the Humanist canon against this background. Richard A. Lanham. *The Electronic Word: Democracy, Technology, and the Arts*. (Chicago: University of Chicago Press, 1993). Heim, in a chapter entitled "The Book and The Classical Model of Mind," provides a comparative "phenomenology" of the culture of the book and the emergent culture of "electric language." Michael Heim. *Electric Language: A Philosophical Study of Word Processing*. (New Haven: Yale University Press, 1987). Hardison's discussion is about the end of cultural figures and formations, the "Book" among them: *Through the Skylight: Culture and Technology in the Twentieth Century*. (New York: Viking, 1989).

do we turn to moral authority, to either Athens or Jerusalem. We remain literate but the sources and ends of our literacy are more telematic, more immediate, more far reaching -- shall we say and not without irony, more lively.

We find ourselves in an age in which our capacity "to reach out and touch someone" has expanded exponentially. We see the dead regularly "living out" fundamental stories of myth every night in the blue glow of our private TV screens. We can spend hours engrossed in our CRTs communicating with people globally, yet few of us would say that we are unaware of the double edged nature of the media-verse, or perhaps the inverse, that we and our tools, by our tools, have created. With all of the knowledge that we have stored and accessible information, who is to navigate this landscape of telematics and information? How are we to know the significant from all the excess?

We are enabled; but have we grown wiser? Do we control technological development or does it finally control us? Planners tell us that even planning has become futile. Once the strategic plan is done and we have opened the door for business, we discovered that the world has changed and our plan is just so much stuff and not very lively at all. These were the questions, or perhaps these were aspects of prescience, that motivated McLuhan to think and work at both a "theoretic level" and at a pragmatic one. The calling of the pedagogue was not unlike the doctor committed to preventative medicine. The point of the exercise was to give us tools by which to address our programmed and proliferant domain of lively stuff.

If, as McCracken tells us, we regularly transform ancestors into things and things into descendants then McLuhan's project was to help us make the

things more congenial for those to come[69]. That is the vocation of those who have come before. In this accelerated time, McLuhan could see the patterns unfolding ever faster and perhaps with increasing resolution and clarity. So we turn now from this discussion of McLuhan's encounter with the explicit media, that aspect of the lively stuff, and turn our attention to what McLuhan made of it.

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[69]Grant McCracken. *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities.* (Bloomington: Indiana University Press, 1988).

CHAPTER 3
The "McLuhan Method"

In tetrad form, the artefact is seen to be not neutral or passive, but an active logos or utterance of the human mind and body that transforms the user and his ground[70].

I

To understand what McLuhan made of the lively stuff it would be beneficial to review in broad terms some of the context of McLuhan's ideas and the dynamics that shaped them. We have already noted and discussed the historical ground upon which the ideas were formed. We can say safely that the method was the result of inheritances and explorations. We first note that the method was a response to an "exigency:" A pressing issue that needed public deliberation and resolution. In my reading of McLuhan, the "exigence" is fairly simple. McLuhan said some things so often that they became part of the background to what was sometimes fancy linguistic acrobatics. One point repeated time and again is encapsulated in the observation that *invention is the mother of necessity*[71]. I think this is the first and perhaps most important point. A trope of this might be: we shape our tools and then our tools shape us, but in unexpected and sometimes very painful ways.

Our cultures of progress, and the dynamics that we sometimes wrongly call the "technological imperative," are rooted in the belief that things, new or better things, will always make things better. More better stuff means things will be newer and more congenial. McLuhan saw grave implications in this.

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[70][Marshall McLuhan and Eric McLuhan. *Laws of Media: The New Science.* (Toronto: University of Toronto Press, 1988), p. 99.

[71]McLuhan, says Carpenter, was a master at repackaging other people's ideas. "Progress is the mother of problems," for example, is Chesterton's aphorism. Edmund Carpenter. "The Not So Silent Sea." Mimeographed copy in author's possession. 1989.

McLuhan was not the only one to seek to provide tools for a critical intelligence. The history of ideas teaches us that there is a long and venerable tradition that positions itself critically with respect to the technological fix or the technological sweet idea. Through the mouth of Socrates, Plato voices misgivings about the benefits of writing while himself writing in a prose style as an opposition to the received teaching of the oral poets of the Homeric tradition[72]. To be sure, McLuhan was not the first; but what McLuhan tried to do, and time will be the judge of the success of his effort, was to provide a way for us to "pre-sage" what might come next and decide if that is the way we want things to go.

In McLuhan's early work this concern already has a pragmatic turn. We note that he was trained as a literary critic, and that he was interested in popular culture. The method he built had a theoretical ground and it was quite simple. Various media configure perceptions in specific ways. We approach life differently in a world in which no one writes from the way we approach it, and the expectations we have of it, in an age in which, through typing and reading, we can almost instantaneously communicate globally, and presumably beyond. Space stations, satellites and space shuttles, after all, are no longer the stuff of pulp science fiction and who knows, it might end up looking like it did on "2001: A Space Odyssey." McLuhan took this structuring by media, expanding therefore on the Innian notion of the bias of communication, and applied it to the perceptual machinery of the body itself. Media form structured *how* one communicated and it also conditioned the message conveyed. Carpenter, to demonstrate this point, showed how the story of the "Caine Mutiny" was subtly

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[72]Eric A. Havelock. *The Muse Learns to Write: Reflections on Orality and Literacy from Antiquity to the Present.* (New Haven: Yale University Press, 1986.), p. 87.

but significantly altered depending on the format of its presentation (as a movie, play and novel[73].)

McLuhan's theory of the personal and social impact of new media was informed by the work done on trauma by Hans Selye. New media, media hybrids and media wars were "traumatic[74]." New media "shook us up". New media caused us to perceive reality in new ways, ways which all too often we did not quite know what to do with. The content of every new medium was an old medium. Television started out by doing film and film started out by doing theatre. It was only after doing film was understood for its unique properties that film began to evolve as an art form in its own right. One should note, however, that in the overall scheme of things this learning happened very quickly, for it did not take filmmakers all that long to figure out that cameras can be moved and that footage can be spliced (one or two generations). The rest of it flows from there. From the point of view of generational time, this learning could be slow enough and it could be catastrophic. Witness the carnage caused by the industrialization of war when it was conducted according to ossified ideas about glory, honour, heroism and duty. Thus we needed to develop a way to understand the present and the future even as it unfolded in the present. For

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[73]Edmund Carpenter. *They Became What They Beheld.* (New York: Ballantine, 1970), pp. 44-8.

[74]The idea is an extension of McLuhan's appropriation of Selye's thesis mentioned above in which the central nervous system "auto-amputates" a seriously injured or otherwise offending organ or limb. At the centre lies the idea that the body seeks the state of homeostasis which trauma destroys. McLuhan adapted this idea to the history of technological evolution suggesting that new technologies are severe cultural and social traumas which our senses and cognition, at least at first, fail to grasp in their enormity. At this point of the discussion, one is reminded of McLuhan's observation in *Gutenberg Galaxy* that the distinction between literate and oral societies can be expressed by their attitudes to novelty. We embrace the new and then ask what effect it is having on us; a pre-literate society considers what effect the new will have on them and then choose not to try it. As we will argue later, the point of the tetrads was to create a predictive tool whereby we could evaluate the effects of novelty before embracing it. Marshall McLuhan. *Gutenberg Galaxy: The Making of Typographic Man.* (Toronto: University of Toronto Press, 1962), pp. 10-1, and again on pp. 42-7.

McLuhan the privileged site for that understanding was in the arts, particularly the avant-garde.

The emergence of new media forms and their penetration into human life and social context had the effect of "auto-amputating" those configurations of perceptions that were "upset" or undermined by the emergence of these media forms[75]. Hence, "rearview mirrorism" in the sense that we could not see the effects of changes in the communication ecology until they were deeply entrenched in daily life. The road to their entrenchment, however, had jarring social effects. The explicit media - telephone, telegraph, printing press, radio and TV - clearly demonstrated this both historically and in McLuhan's own lifetime. As we have noted, McLuhan's response to this was both poetic and pragmatic. The poetics can be found throughout this work but most apparently during the "great books" period[76], an ample example would be phrases such as the "gadget lover", "narcissistic narcosis" and "the mechanical bride" -- each phrase variously a title and a memorable observation rich in implication. The implications were sometimes not very rigorously thought out throughout the early work. But the pragmatic turn was already imminent in the poetic. McLuhan was trying to probe and prod thought into an awareness of the implications of new media and this was being done through poetic utterance. The pragmatic term would find its complete articulation in the later work.

It is beyond the scope of this study to provide a complete discussion of McLuhan's intellectual development. The literature on this, as well as the

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[75]Marshall McLuhan. Gutenberg Galaxy: The Making of Typographic Man. (Toronto: University of Toronto Press, 1962), pp. 42-7.

[76]By the "great books" period I am referring to the books that McLuhan is still best know for: Gutenberg Galaxy, Understanding Media, War and Peace in the Global Village, The Medium is the Massage, and to a lesser extent The Mechanical Bride, which is unfortunate, for it remains one of McLuhan's richest texts.

debate that raged around it, is large and with the renewed (again) interest in McLuhan, we can imagine that a solid intellectual histories will be forthcoming. It is our intent to consider the nature of McLuhan's final synthesis with respect to the implications that it may have for the study in communication of material culture as media. The later work as we have already said offers a closure to the project initiated by Innis. It is not *the* closure, but *a* conclusion drawn from a long encounter with the Innian project. McLuhan was the first one to try to push Innis to his logical conclusions. Equally of interest is the fact that the later work exhibits a discursive coherence and a clear analytic structure though again we note that is imprecise or flexible (depending on what one would choose to call it) and there is a troubling, arcane or almost magical dimension in it. But then on the other hand, given some of the developments in quantum physics and astronomy, it is getting a bit hard to tell where the lines between the arcane and the scientific are really to be drawn[77].

We must remain clear -- we are dealing not with a body of theory but with a method. We do it some injustice by reducing it to formulae, but to some extent this will perhaps clarify it as an approach to posing the questions about the future of our material culture. The method, as I conceive of it, is best articulated in the posthumous works and its first articulation in 1973. To be sure it is deeply rooted in all of the books that were published in McLuhan's life. That is to say in the books on communication. For our purposes we can break this method into a structure and a strategy. The structure we can, with some trepidation, refer to as the theoretical ground. The strategy is made up an attitude or a mental posture -- and -- a set of questions with which to approach any media form to

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[77]Robert Romanyshyn. *Technology as Symptom and Dream.* (London: Routledge, 1989), pp. 191-8.

inquire into the effect that it might have, did or could have, on the world in which it was employed.

The entire thing can be reduced to the following: first, one must understand that we change our tools and that our tools change us. One must understand how this relationship unfolds with the elaboration of the mechanical and electro-technical world. To understand this, one has to understand how this technological dynamic has worked at various times and at various places. In this portion of the overall method one can see the inheritance of Innis -- this emphasis on the benefits to be derived from history as a laboratory and perhaps mirror-walled cognitive vivarium. Second, one has to internalize the habit of perceptual and cognitive "toggling". The toggling in this case is between figures and grounds, toggling between the centre of attention and its interactions with the context in which it is embedded. And thirdly, one has to develop the mental habit of posing four very simple questions to any technology or media form. Taken together this method was to provide the citizen with tools for an informed and practical deliberation about the kinds of technologies that are needed and what some of the trade-offs -- personal, social, historical -- might be implied by this new technology. When internalized, the method was to provide the individual with an "integral awareness," and it was the individual of integral awareness in the company of peers that could protect society from the most adverse effects of Narcissus Narcosis. McLuhan never tired of working with all these component parts

II

We can note that McLuhan was a communicant within a research/discursive community of thought which shared the same set of questions, concerns, and intellectual strategies. Here we are referring to a "community" made up of Innis, McLuhan, Havelock, Ong, and various thinkers and scholars who have been influenced by their pioneering work[78]. Michael Heim who applies this school of thought to the philosophical implications of word-processing, refers to the key theoretic thread that links the members of this community together as "transformation theory[79]". From Heim's point of view this tradition is deterministic because of what he sees as its impulse -- a forward-unfolding view of the thrust of technological development. Though Heim does not quite say so, his conception of transformation theory would almost make of it a kind of progressivism. Heim offers the work of Heidegger as a corrective arguing that Heidegger had seen that there would be trade-offs for every advance in technology. Giving up some of the satisfactions of the pre-industrial worlds for the convenience of packaged Lean Cuisine, central heating and funeral parlors might be some such trade-off. McLuhan, 20 years earlier observed that we, in our world of technological change, were like apes swinging on vines; we grasp a new technology only to let an old one go. We embrace a new environment only to walk away or be rudely jarred out of another one[80]. The point is that this school of thought, to which we could also

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[78]For a broader context for this tradition and some of its internal distinguishing similarities and differences see: James W. Carey. "Mass Communication Research and Cultural Studies: An American View." In *Mass Communication and Society*, edited by J Curran, Michael Gurevitch and Janet Woollacott, 409-439. Beverly Hills: Sage, 1977), pp. 409-425.

[79]Michael Heim. *Electric Language: A Philosophical Study of Word Processing*. (New Haven: Yale University Press, 1987.), p. 50-69.

[80]Marshall McLuhan. *Understanding Media: The Extensions of Man*. (New York, 1964), pp. 57-8.

assimilate aspects of Heidegger's project, is far more supple than Heim accords.

As the literature indicates McLuhan was very much part of this intellectual community. Walter Ong was a student, Eric Havelock was a colleague and a correspondent and, Innis was a colleague, if briefly, and a profound influence. Using a shorthand of sorts we can therefore look at the history of Western Civilization according to McLuhan, yet be aware that some of the larger strokes are shared, submitted to critique and/or influenced by the others in the group. What McLuhan tends to bring to this discussion is a characterization of the changes in experience of space brought about by the various media[81]. Time plays a very important role in McLuhan's version in history, but to use his own language it creates a ground in his work rather than a figure and when it does appear it takes on a recursive yet telic form. This way of looking at history contains two of the essential ideas in the McLuhan legacy -- the entelechy of matter and the recursiveness of time, but more on this later. We can simply note here that McLuhan does not focus on time according it the "space" or significance that he does to space itself: time played the role of ground rather than figure. Indeed McLuhan's characterization of primary orality is to call it acoustic space.

In this scheme, the history of the West is characterized by four phases - primary orality, chirographic, typographic and electronic. In each of these "stages" of development, the character of knowledge (and *logos*, or creative word of command), is "determined" by the communication ecology which is

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[81]Note the emphasis on media as situational agents in McLuhan's *Understanding Media: The Extensions of Man.* (New York, 1964), p. 35-7.

centered around a dominant medium or media configuration. Shifts in the media infrastructure that supports and transmits knowledge and *logos*, are accompanied by changes in the organization of society and structure of power. This is the Innis formula; what McLuhan adds is that the dominant media configurations affect the perceptual and experience of people living within them.

The world of primary orality is a world in which no "writing" system exists. This is the world dominated by the ear. Cultures that are in the state of primary orality are oral cultures and they occupy acoustic, reverberant, multi-centered space. Things that need remembering are told in memorable ways i.e. poetically. Metaphor becomes the holding pattern of knowledge[82]; symbol predominates. Inscription, rather than being cursive, is completely "gestalt-like"; and barely pictographic. Inscription employs picture but picture does not follow picture into a coherent and rigorous lexographic structure. Syntax is fluid and open to interpretation as are semantics themselves. One thinks here of West Coast Canadian totem poles and Ukrainian Easter eggs. This primary world, McLuhan says, is based upon an acoustic experience of space in which things are sudden, discontinuous and magical. There is no point of view and one lives in a sphere dictated by sound. Thus the first moment in the history of civilization, is this world of sound, of the magical or sonorous word[83], and it is this world that begins to recede as the sown dragon's teeth sprout into marching

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[82]The notion of symbol or metaphor as "holding pattern" suggests that when there is partial knowledge, or a surfeit of detail and complexity, what is "said," and "unsaid," can both be accommodated in an economic and schematic or communicative gesture such as an image or artefact. This is consistent with the idea of appresentation that is developed at greater length below.

[83]I am indebted here to Ihde's phenomenological investigation of listening and voice, especially the performative dimension of oral transmission of mythic knowledge. In Don Ihde. *Listening and Voice: A Phenomenology of Sound.* (Athens, Ohio: Ohio University Press, 1976), pp. 170-80.

men. This is a reference to King Cadmus, and the metaphor for the written word which McLuhan found very suggestive[84].

The acoustic world of primary orality based on song, story, narrative and poetry gives way to the next phase which is "chirographic[85]." The myth to which I refer above, McLuhan's metaphor, is the one in which King Cadmus sows the teeth of a dragon from which rise armed men with which the King will expand his command of his dominions. In this myth McLuhan saw an early account of the appearance of the world of chirography. I conflate categories here. As the student knows there is some difference between McLuhan and Innis on the importance of writing and the importance of the phonetic alphabet in the evolution of Western civilization. This dispute can be acknowledged but set aside in the interests of brevity. Perhaps we need only recognize that the emergence of chirography in which ever complex guise, was "revolutionary."

With chirography we have the birth of civilization, that is to say urban, highly organized social formations, exhibiting expanding productivity by means of an expanding material culture and the appearance of the ability to create an extra-somatic record of information. In other words, chirography enables a society which has some objective record of the past as well as codified laws on which to base future actions. Whether hieroglyphics or cuneiform or characters, any form of chirography proved to be revolutionary and devastating for certain aspects of the acoustic world. Plato, a literate man, conceived of a utopia based upon the clarity, brevity and sincerity of reasoned prose -- a utopia for the

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[84]Marshall McLuhan. *Understanding Media: The Extensions of Man.* (New York, 1964), p. 72.
[85]The term "chirographic" is borrowed from Ong who uses it to designate any society which makes use of any form of writing. Walter J. Ong. *Orality and Literacy: The Technologizing of the Word.* (London: Methuen, 1982), p. 78.

informed and articulate mind. The poets had to go and so did myth as the preeminent pedagogical canon in which to form the citizen of the city[86]. Just so. The phonetic alphabet was equally revolutionary because its formal properties as a medium were democratic. This is to say they were economical -- relatively easily and quickly learned by a greater number of individuals. Both chirography and then the phonetic alphabet were key revolutionary developments that undermined significant structures of the primary oral world.

It took time. What we must remember is that this story begins in a minuet and arrives at our doorstep in a fox-trot. The story of this evolution of Western civilization with respect to its explicit media is one of increasing tempo, but over a period of some 4 millennia. Primary orality lasted perhaps from the first hand-axes of the Paleolithic into our modern era. We still find ourselves combating illiteracy in pockets of our advanced industrial societies. Thus while we can speak about a "progression" or an evolution, we must remember that very little of this happened in such a way as to be completely a break with the culture and world that the revolutions "destroyed". We must also remember that aspects of culture ascribable to any of these media forms (oral, chirographic etc.) continue to obtain in global communication ecology of the present. What has in fact happened is that these various media environments have converged and we find ourselves in an era of some kind of orality which is also an era of high literacy and almost immediate global communication[87].

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[86]Gadamer offers a reading of Plato's position on the poets based on their exclusive control of the pedagogical canon. Hans-Georg Gadamer. *Dialouge and Dialectic: Eight Hermeneutical Studies on Plato.* Translated by P. Christopher Smith. (New Haven: Yale University Press, 1980), p. 39-72. Ong provides a similar interpretation: Walter J. Ong. *Orality and Literacy: The Technologizing of the Word.* (London: Methuen, 1982), p. 79.

[87]A similar trend can also be noted in the evolution of advertising formats: See the discussion of cultural frames for goods in William Leiss, Stephen Kline, and Sut Jhally. *Social Communication in Advertising: Persons, Products and Images of Well-Being.* 2nd ed. (Scarborough, Ont.: Nelson, 1990), pp. 327-348.

To return to the narrative, we note that writing in its various forms supported an environment conducive to the development of much of the legacy that we accord to Civilization -- the arts, sciences, letters, humanities and so on. Chirography, the marching of the dragon's teeth, would gobble up the center around which societies were organized. Even though this period, roughly lasting until the Renaissance, was "literate," it was simultaneously a kind of secondary orality[88]. It was also a world where chirography, with its satisfactions and dissatisfactions, was the purview of a small literate elite -- the *literati*. While phonetic writing democratized chirography, it did so in principle but not in fact. The availability of the written word and increased access to education would remain far into the future still waiting for the emergence of the next major media shift that would come on the eve of the German Renaissance -- the development of printing using moveable type. This then would be the third phase, the era of print.

Printing did not originate in Gutenberg's shop in early Renaissance Germany. The Chinese had been doing it for a very long time indeed. To ensure the survival of their classics, they had them carved into the side of a mountain. Applying ink to these carvings and then paper (which they had invented) rendered a reverse print of the inscription -- white letters on a black background. Wood block prints were in wide distribution throughout the Medieval period and printing has been in wide use globally in the production of pottery and dying of fabrics[89]. Printing, that is to say making a large number of

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[88]During the Medieval period texts served more as mnemonic anchors than books to be read silently and "consumed" in favour of new books. Reading was often reading out loud.

[89]Repetitive pattern was not new in the 1500s. Part of the Athenian reach around the Mediterranean was due to the export of her fine pottery. Clay, be it in the form of a tablet or a pot has been one of our first "print" media. An interesting twig can be pressed into moist clay repetitively. A pattern is created. The template

copies from an original pattern or image, is a well established ancient human technology. What changed was that now it had become economical to make large print runs of copies of ever changing collections of words.

Printing with moveable type expanded the significance of the written text to the structure of Civilization while simultaneously doing away with large constituents of the structure of Civilization that had preceded its emergence. The notion of the *literati* would be modified as would be the dimensions and compositions of this class. The world ruled by dynasty, divine right, and sacred language, gave way to a world of an expanding and predatory commercial-industrial class, a world of nation states and a proliferation of written languages[90]. At the center of the intellectual structure of this world, the preeminent anchor of pedagogy, was the book. Even as the bible had been "The Book" so it would remain now in many languages through the next major era. But less would it be "The Book" at the centre of civilization and more a significant Book in the overall library of the *legacy* or canon of Civilization. The central point therefore, became not a Book but books. The printing press, said McLuhan, was the metaphor for the industrial revolution to follow. Some truth in that: 5,000 "perfect" copies of a page are not unlike 5,000 interchangeable flintlock mechanisms for rifles or for that matter 5,000 pieces of calico in the same pattern. This world anchored by books was the world that McLuhan and

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comes to mind, as does its fragmentation into a grid of intersecting lines of colour and texture in weaving and embroidery of various kinds, places, ages, and cultures. For an extended discussion of non-typographic printing see Chandra Mukerji. *From Graven Images: Patterns of Modern Materialism.* (New York: Columbia University Press, 1983), *passim* and especially pp. 30-78. The role of pottery and trade objects and practices of appropriation in the Greek development of their chirography in Eric A. Havelock. *The Muse Learns to Write: Reflections on Orality and Literacy from Antiquity to the Present.* (New Haven: Yale University Press, 1986), 56-62.

[90]Anderson's discussion of the spread of printing is germane. Particularly the rate of its penetration. See: Benedict Anderson. *Imagined Communities: Reflections on the Origin and Spread of Nationalism.* (London: Verso, 1983), pp. 41-3.

his immediate generation were to watch being dismantled by the emergence of the next large wave of media change, this being the electronic.

The electronic, which emerged in significant form toward the end of the previous century, now seems to be shading into a world of the technotronic, that is to say, an environment characterized by increasingly lively stuff. The genie of electricity that provided us with telecommunications in its broadest conception, has also provided us with the ability to produce silicon-based media which can be miniaturized and then incorporated into other technologies and objects. The transistor radio, the cellular phone, the "smart" security system, are just some examples of this new technology as are the various computer encoded cards (identity, credit etc.) that we use to navigate official and financial worlds today. This last change brought us to yet a new form of orality but an orality deeply intermeshed with a new kind of literacy. The orality implied in the radio brought with it the possibility for an audile-tactile space of our present mediascape.

If space is audile it is because radio, TV, recorded sound, and various forms of transmission have brought with them a continuous sonic texture that we take for granted as part of our lifeworld. The telephone, and then cellular phone, as well as sophisticated voice-mail systems, expand this orality enormously. At the same time we live very much in an age of a new kind of tactility based on our media. We manipulate our media through various knobs and toggles and we communicate through them employing an older technology, the keyboard. We zap our TVs, we drive our cars, we manipulate various appliances in our homes, we work with computers and a host of other smart machines to earn our daily bread. Therefore in an age of convergent media we also experience a

need for skills in all the media forms be they oral, chirographic, typographic and electronic.

To some extent every new technology, being the extension of some aspect of human capacity, is necessarily a displacement of that human capacity into a machine. The machines of the industrial revolution, and the logic that they imply when understood in terms of maximization of profit, contributed greatly to that horrific image of the industrial world that we derive from the writings of Engels for example. Today as we find ourselves moving into a new millennium, we are faced with the problem of what will be done to provide meaningful work for the multitude when measly machines will do. We need not contemplate the apocalyptic scenarios implied by the disasters caused by our technologies to grasp some of the less than satisfying implications of our continued technological progress[91].

Yet we cannot lose sight of the enormous benefits brought to at least a portion of the world's population through these very advancements. If there is one thing that "transformation theory" adheres to then it is the inevitability that contradictions and paradoxes will be brought about by technological evolution and change. We do let go of environments in order to grasp new ones and we discover aspects in new environments that make us nostalgic for the old. There are tradeoffs, there are benefits and there are dissatisfactions. Looking at the evolution of Western civilization from this vantage point, it does suggest that

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[91] It is interesting to compare the amount of space accorded satisfactions and dissatisfactions in The Global Village. McLuhan and Powers give the dissatisfactions 36 pages, while the satisfactions are covered in 8. Marshall McLuhan and Bruce C. Powers. *The Global Village: Transformations in World Life and the Media in the 21st Century.* (New York: Oxford University Press, 1989).

invention is the mother of necessity and that the technological imperative is nothing to sneeze at.

The technological imperative, that sense that we must do what our machines enable us to do, is by no means a blind force nor is it merely a figment of critical or engineering imaginations. We have historical examples of societies in which conscious decisions were made not to embrace a technology or to reject one that had been recently introduced. The Japanese refusal of the musket and a return to the culture of the sword, if not permanent, remains a significant example. It is not the only one[92]. From McLuhan's perspective the technological imperative, which is another way of looking at the entelechy potential of our lively stuff, can be a blind force unless it is made thematic: unless people become more "maladjusted".

III

The innate logic of our technologies, their capacities to extend us, offers us a continuous temptation or opportunity to make use of them. Our insistence on living in climates and circumstances biologically completely alien to us, creates the unfolding need to continue to improve on our material culture's capacity to sustain and advance our intent. The human body is not adapted to living in the nude for extended periods of time on the greater part of our planet's surface. It is completely incapable of biological life, in the raw, in outer space nor can it of itself sustain flight. And you can only hold your breath for so long

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[92]The gun arrived in Japan in the 1550s and completely changed the shape of warfare. By 1588 laws forbidding peasants owning guns were introduced. By 1645, the publication of Musashi's Book of Five Rings, the sword had returned, class lines were "re-established," and the gun culturally obsolesced until the late 1800s. For other similar examples, see Witold Rybczynski. *Taming the Tiger: The Struggle to Control Technology.* (New York: Penguin, 1983), pp. 181-84.

under water. If you want to do any of these things you need stuff and if you want

to do it better, you need better stuff. Thus, while the human dimension may be

tied up with a question of spirit it is the stuff that allows us to make it happen.

But we have got to be aware that there are consequences in all that stuff. So

based on the this view of the evolution of Civilization, and the role within it

played by explicit media, McLuhan was to arrive at both the problem of the

unified field and the basic structures upon which to build the strategies that

informed and constituted his method. You had to have the history before you

could toggle to integral awareness.

The problem as perceived by McLuhan was that history was

accelerating. This is only to say that the relationship between the scale of

human organization and the lively stuff was intensifying and moving at a faster

rate. This acceleration, McLuhan contended, undermined the possibility of a

"point of view." A point of view - which is to say, a reasoned, individual

distanced, immobile perspective - was the product of the culture of the book and

of the "Episteme" that it had supported[93]. It becomes impossible to hold a single

point as everything increasingly changes. At such a rate McLuhan argued, one

had to opt for pattern recognition. At this great tempo and in the context of an

increasingly heterogeneous and heteroglossic universe, patterns were

apparent. There were unities, albeit shifting ones, that could be noted if one

took a certain approach to looking. Thus one of the key ideas that was to

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[93]McLuhan's observations about the focus of point of view and visual space, is given an extensive psychiatric development by Romanyshyn. His work on the figure of the window in Alberti's method receives a treatment that bridges such debate as might emerge between Mumford and McLuhan over the "key machine." Such debate would isolate a key technological configuration as "prime-mover." Romanyshyn shows the larger cultural and socio-historical constructs and relationships that taken together and focused on the Cyclopean framing of the window, transform the foundation of Western knowledge to a techno-pragmatico-visual bias. For Romanyshyn this is the figure of the "spectator." Parallels can be also found in McLuhan's "visual space" category along with a variation of the deep structures implied by Innian "spatial bias," in Robert Romanyshyn. *Technology as Symptom and Dream.* (London: Routledge, 1989), p. 65-84.

ground McLuhan's method, was pattern recognition. This in itself connected to a more explicit aspect of the method -- the toggle between figures and grounds.

McLuhan had "discovered" the significance of the study of the relationship between figure and ground through the work of the Danish art critic, Edgar Reuben[94]. Like much else in McLuhan's method, the roots of this were firmly set in the domain of aesthetics, or more broadly, the humanities. The idea of figure and ground developed by Reuben shared ideas with Gestalt psychology. The latter placed emphasis on the psycho-dynamic effects and play of patterns -- gestalts -- within the psychological economy. Reuben adapted this approach to art criticism and had demonstrated the way in which patterns were organized in relation to context. To use the language of semiotics or perhaps hermeneutics, the sign received meaning and could figure in a larger discourse only because it found itself in a context which enabled it to mean at all. This idea found articulation in the discussion of figure and ground. What McLuhan did to that idea was to turn it from a means of contemplation, to a dynamic and shifting approach for the study of effects of changes in technology on human social life.

Communication of any form has a great deal to do with the organization and allocation of attention and intention. Culture, in that sense, is made up of attention focusing or channeling patterns of behaviour and institutions. The figure in the context of discussion of figure and ground, is the focus of attention; the ground on the other hand is its context. An example which is relatively simple and one that McLuhan liked to use puts us into a lecture hall. One can

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94Marshall McLuhan, Eric McLuhan, and Kathryn Hutchon. *City as Classroom: Understanding Language and Media.* (Agincourt, Ont: Book Society of Canada, 1977), pp. 8-9.

be sitting in a lecture hall and paying attention to the professor and what he or she is saying. That is the point of attending a lecture. For a variety of reasons however, one's attention can wander, in which case one becomes aware of the ground to the figure. If the figure is the droning Prof., then the ground may become the hum of fluorescent lighting, the uncomfortable lecture hall seating, the fact that one may have missed one's breakfast or that some of one's bodily functions need attention. In much the same way, in our study of emergent technologies, quite often we are sooner aware of the figure than we are of the ground. No technology acts in isolation. Discussion of the benefits to be derived from any technology can only be taken seriously insofar as the degree to which they address the unattended -- the broad social context into which they emerge and which subsequently they can transform.

This idea of a shifting point of view which enabled one to bring the ground into the forefront became an important analytic tool from McLuhan. There are parallels to this approach in the analytic strategy preferred by phenomenology. Things can be made thematic or they can recede into the surrounding world[95]. McLuhan's insistence on shifting points of view and perceiving patterns was aimed at the emergent field of the study of technology and media of communication, however. The Figure/ground dynamic was to become not only an analytical tool, but part of the greater prescription; the pragmatic prescription that McLuhan sought to advance through what I am calling his method. The point is by no means complicated. It is simply the assertion that nothing has meaning or import without its context.

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[95]Don Ihde. *Experimental Phenomenology.* (New York: Outnam's Sons, 1977), pp. 38-41.

In an age of simultaneity and instantaneous communication the ground or context was increasingly important. This "area of inattention" was the veritable breeding ground of disruptive change, but because it seemed peripheral not much attention was paid to it, either analytically, or in the activity of planners, producers or consumers. This ground, it must be noted, especially in the case of the explicit media, was in fact the whole domain of the implicit media or the unified field or material culture as media of communication. The ground contained within it history hence one had to have history to engage in the toggle. History, in and of itself, was inadequate for dealing with the emergent technologies. One also had to have some sense of the future but it was exactly in the patterns that came from the past that the future, could be imagined. McLuhan's figure/ground was to be understood therefore as a toggling between figures and grounds in the perceived world but also a toggling between the past and the future. And by virtue of the nature of his project it was also to be a toggling between theory and practice -- what we have called McLuhan's pragmatic turn. As we will explain shortly, that pragmatic turn was neither unproblematic nor without an arcane dimension, especially around the question of time.

The toggling between figures and grounds, was also required to employ the tetrad -- the core of McLuhan's "method." The tetrad itself was based on four questions which rendered as statements presented the "laws" of media. The basic contention is this. Every innovation will render four effects. it will *enhance* or extend a sense, organ, configuration of both, or set of skills and/or knowledge. Simultaneously, the novelty will *obsolesce* or antiquate some previous device, practice, set of skills and/or knowledge, sensory configuration or set of preferences. These two effects are common-sensical -- that something

new makes something else old; that it brings with it new experience. The next two formulations are more unorthodox. When the new is pushed to the limit of its performance, or when it becomes ubiquitous, it "flips" and it will *reverse* or overload. This "flip" thereby transforms into a new cultural form which occupies a new cultural niche. Here one is again reminded of that "invention is the mother of necessity[96]."These reversals, which, according to McLuhan cause great distress and dis-equilibrium, lead to new inventions whose purpose is to *recover* or retrieve equilibrium lost to previous innovation. Indeed, the dynamic moment of the tetrad is the fourth -- recovery, but it is also deeply tied to the third, reversal.

In 1973, McLuhan discovered the tetrad through a synthesis of four major themes that had been emerging throughout his work. Eric recalls that as he and his father began working on the proposed second edition of *Understanding Media*, McLuhan began asking "What statements can we make about media that anyone can test -- prove or disprove -- for himself. What do all media have in common? What do they do?. Throughout an afternoon of work, he and Eric had identified three such questions -- extension, closure (to become obsolescence), and reversal. The first two had emerged earlier as core questions in *Understanding Media*. The third question, reversal, was the key question explored in *Take Today: Executive as Dropout*, co-authored with Barrington Nevitt in 1972[97]. The last of the four questions -- retrieval -- took longer to identify, but it too emerged from a previous publication -- this time as

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[96]Marshall McLuhan. *Understanding Media: The Extensions of Man.* (New York, 1964), p. 67.
[97]Marshall McLuhan and Barrington Nevitt. *Take Today: The Executive as Dropout.* (Don Mills, Ont: Longman, 1972).

the central theme of *From Cliché to Archetype*, a collaborative effort with Wilfred Watson published in 1970[98].

Once McLuhan identified this structure of dynamic forces implied in every "object as vortex," he called it the "laws of media." The representation of all four processes in simultaneity, a representation necessarily graphic, he dubbed the "tetrad." In the posthumous book shepherded through University of Toronto Press by son Eric the "Law" aspect of the method is true to its earlier formulation. Laws, science, an advance on Vico with a tad of Joycean metaphysics thrown in for good measure. It is the "tetrad" as a "method" that gets the focus in the other posthumous publication delivered to Oxford University Press by Bruce R. Powers -- cautious, no over-emphasis on scientific laws and fewer forays into the darkly exigetical power of Joycean *portmanteau*. I shall shortly address the significance of the graphic representation of the tetrads. First, let us examine the actual "method."

As an illustration of the method at work I cite a rather lengthy passage of McLuhan and Power's discussion of the automobile. They first explain the broader functioning of the tetrad in analysis:

> The tetrad not only reveals the configurational character of time, but also that the artefact (or founding idea [of any given tetrad, its subject]) is always a product of the user's mentality. The tetrad includes the ground of the user as the utterer; and paradoxically, includes the user as ground. We make ourselves, and what we make is perceived as reality. For example, an analysis of the effects of the printed word on another environment usually engenders quite different results. The tetrads for print in the United States, China, or Africa would have three different grounds[99]

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[98]Marshall McLuhan and Wilfred Watson. *From Cliche to Archetype.* (New York: Viking, 1970).
[99]Marshall McLuhan. *War and Peace in the Global Village.* (New York: Touchstone, 1968), pp. 10-11.

In the above we can clearly see both the ideas familiar from the great-book-period as well as an incorporation of these ideas into the figure/ground approach that receives full development in *City as Classroom*. From this point, and on an "American ground," McLuhan and Powers give their first example of how the four questions of the tetrad can be employed.

> The tetrad helps us to see "and-both," the positive and the negative results of the artefact. For instance, the automobile **amplified** [my emphasis throughout] one's ability to cover distance more quickly and, to a limited extent, carry cargo. Yet, almost from the its beginning, this invention simultaneously affected man's relationship to time and space, **obsolescing** the forms of social organization rooted in pedestrian and equestrian traditions. The township and the neighbourhood collapsed. The inner city was left to non-human-scale development, while that space in the city that had been set aside as living space was shifted to the suburbs.
>
> The gasoline automobile **brought back** a sense of private identity and independence which had first manifested itself on the American frontier and, to a lesser extent -- as Mark Twain tells us -- in the social threads of farm and village. **Pushed to an extreme**, in urban sprawl, congestion and pollution, the automobile **reverses** into the electric mini-car and encourages renewed activity in jogging, bicycling, and urban nature preserves.
>
> Even before the Organization of Petroleum Producing Countries' price squeeze, **over-amplification** had made the automobile a monster. When the figure (car) is on the verge of swallowing the ground (environment) it becomes grotesque [my emphasis][100].

Are the "laws," as McLuhan claimed, scientific? From the point of view of rigorous mathematically-based and empirical studies, this hardly seems the case. The mere fact that alternative tetrads can be constructed on the same subjects, seems to subvert "certitude[101]." Secondly, like semiotic analysis, success with constructing tetrads may have more to do with the researcher's skill and resources, than with the form of inquiry. Thirdly, the tetrads often exhibit a disregard for the discreteness of intellectual or logical fields. But then, so does interdisciplinary inquiry. Just so, from the "yes" side of the equation.

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[100] *Ibid.*.

[101] *Laws of Media* contains an entire section dedicated to alternate tetrads drawn on the same subjects. *The Global Village* avoids the issue of alternative tetrads, but then does not present the tetrads as "scientific," or at least does not rely on Popper's formulation of the requirements for "scientific" articulation.

Working with tetrads does reveal them to be a potentially rewarding organizational, analytic, critical and pedagogical "tool." From experience in lecture and seminar, I can attest to the speed with which students "take to them," and the heated debates that ensue as either FAX, CDs or Virtual Reality technology are dealt with "tetradically." If the tetrads do not offer a method by which to arrive at final answers, they do generate many questions and enhance the mobility of thought.

According to McLuhan and co-authors, the tetrads offer a dynamic model of the relationship between us and our many things and forms of organization. They can and should be interrogated and tested from the ground of the political economy as well as from the ground of philosophy or statistical sciences, something McLuhan failed to do. For example, what sort of tetrad can be constructed around a new piece of policy, or in response to a potential corporate merger, or with respect to proposed urban or resource development? Finally, their central claim needs to be examined. Are they an apologia for McLuhan's theories about the simultaneity of the electronic communication ecology? Or, perhaps even more significantly, do they truly resolve the tension between structural or synchronic and historical or diachronic modes of thought and analysis, which is what McLuhan believed that they could do[102].

As noted above, the tetrad is a "graphic" representation. In a sense, we have the culmination of a life-long claim: McLuhan was concerned with pattern-recognition in the age of electronic media. Pattern is the repetitive and often rhythmical condensation of information. Condensation is critical, as is form.

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[102]Marshall McLuhan and Eric McLuhan. *Laws of Media: The New Science.* (Toronto: University of Toronto Press, 1988), p. 111.

There are three graphic forms taken by the tetrad. The most basic is the simple listing of the four "processes" as might be penned by a studying undergraduate who is confronted by the citation of the car offered above. While this "works," and the *Global Village* ends with an appendix of just such 4-point tetrads, the 4-point listing, I believe, misses an essential point[103]. The list is hierarchic, the tetrad is not. There is a dynamic within the tetradic form, but the dynamic is often unconscious, as other processes which the tetrad reveals may be. The point is that the tetrad or "tetradic analysis" offers *a field of condensed information in simultaneity*. Hence there are two more formats which come closer to the mark. In *Laws of Media* McLuhan & McLuhan engage in true graphic design experimentation -- pages of cruciform, and diagonally-exploding from the centre, textual fragments and/or aphorisms seek to capture this condensation of simultaneity. Powers, with the assistance of Blair Schrecongost, offers a Moebius quatrefoil worthy of any corporate letterhead. Used sparingly in the book, where it is deployed it dominates; very brief one-liners precariously adhere to its fringes. While neither graphic articulation is finally satisfactory, they both reveal something deeper at work near the core of the impetus for developing this method for pattern recognition.

If McLuhan expressed his jealousy of the certitude of science in the "laws," then the necessarily graphic representation of the tetrads reveals another kind of jealousy to which McLuhan, and perhaps Joyce before him, was

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[103]The CD-ROM Understanding McLuhan also opts for the four-point list. This is sad in light of the fact that an otherwise relatively rich resource could so fundamentally miss the idea of the tetrad which, in and of itself, wonderfully suited for exactly the CD-ROM and hypercard form of information environments. See: "Tetrads" in Daniel Beer. *Understanding McLuhan: A cd-rom on the ideas and life of media guru Marshall McLuhan.*, edited by Paul Benedetti. (Irvington, New York: Southam Interactive and Voyager, 1995). Consider this in the unpublished journal for 1978, April 18th where McLuhan, working on the "laws of media" writes: "[M]uch talk with Bruce [Powers] about alternatives. Suddenly the possibility of animation for LOM [laws of media] emerged. Ideal for metamorphosis and freedom for me. Need to find a top quality animator." McLuhan was again demonstrating the literate intellectual's lack of appreciation for the technical complexity that such a "liberating" animation might entail. The CD-ROM is perhaps another such illustration in reverse.

prone[104]. Jealousy, provoked by "conditions imposed on the intellect by electronic media," as McLuhan might have put it. This object of envy was the Chinese character or ideogram. For what is the Joycean *portmanteau*, the neologism that is greater than the sum of its parts, if not the phonetic-alphabetical "man's" response to the "simultaneity" of things and the apparent "implosion" of media generated by an electronic communication ecology[105]. In an article subtitled "Synaesthetic Electronic Technologies: It Starts with McLuhan -- Then Spins Out of Control," Jas Morgan points out that McLuhan's account of the future of language in the cybernetic environment is consonant with the current efforts to create new communicational forms which are both gestalt-based (again, McLuhan's pattern recognition) and potentially synaesthetic. He predicts a new form of cyber-communication that will be made up of gestalts, *portmanteau*. combining "neolinguistic, eroticized verb-sculptures and data-clusters." Since Morgan privileges McLuhan's contribution to the field -- he writes : "It is my hope that 'McLuhanism' can be forged into a kind of science through which the effects that the media have on perception will be understood"[106] .

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[104]My reading of the place of Joyce in McLuhan's work is indebted to Marchand and also two interpretations of the Joycean corpus, especially the "Wake:" Joseph Campbell and Henry Morton Robinson. *A Skeleton Key to Finnegan's Wake: Joyce's Masterwork Analyzed.* (New York: Penguin, 1944). and Umberto Eco's *The Aesthetics of Chaosmos: The Middle Ages of James Joyce.* Translated by Ellen Estrock. (Cambridge, Mss: Harvard University Press, 1989).

[105]The term *portmanteau*, in French conveys the sense of a mechanism to suspend clothing such as a free-standing coat-hanger, or a large traveling bag if *manteau* is understood as a mantle. When applied to language, a *portmanteau* word is a blend of two others. The "blended word," as is the case with a gestalt, conveys meanings greater than the sum of its parts. Joyce's employed portmanteaux along with puns throughout his Finnegan's Wake. An extreme example of this devise, the "ten thunders," words running to over 100 letters in length, were quoted with interpretations by McLuhan, in McLuhan *War and Peace in the Global Village.* (New York: Touchstone, 1968), pp. 46-8. McLuhan and his son Eric firmly believed that the "ten thunders" encapsulated the history of communication.

[106]See: Jas Morgan. "Digits Run Riot: Synaesthetic Electronic Technologies." *Mondo 2000*, Summer 1990), pp. 140-4. In the same article, Morgan reports that Randy Walser, chief hacker at Autodesk Inc. Cyberspace Initiative, one of companies most advanced in virtual reality technology development, told him that McLuhan had articulated Walser's job description some 25 years ago.

McLuhan, it has been said, was jealous of the certitude of hard mathematical science -- this is what ultimately impelled him to use Popper's formulation of verifiability . We have Eric McLuhan's and Marchand's corroboration on this. But what is missed or repressed here is that McLuhan was first and always a philologist and specifically a student and teacher of poetry. And, as Bachelard has shown us, it is the very ambiguity of poetic language, its play of potentially open-ended allusion and association, contradiction and paradox, that gives this language its power[107]. McLuhan never tired of jousting with the bugaboo of the phonetic alphabet and its extension in the printing press. An escape route from the structures of perception imposed by both could be found in that wonderful amalgam of aural and visual literacy contained in the Chinese ideogram -- the graphic reduction of the 4-point list into tetrad could be experienced in the same way. Much information is delivered, much of it is based on indirection, on association and allusion and the interplay of all the senses. "Rigidification of thought", as Innis might have put it, is put constantly in question.

At the core of it, the tetrad, is an exercise in informed and interested, juxtaposition. While not as gratuitous as a "sewing machine meeting an umbrella on an operating table," it is impelled by the desire to provoke alternate and creative thought. McLuhan's introduction to *Bias of Communication* heaps praise on Innis' untutored use of Symbolist aesthetics as a device for coming up with fresh insight -- of seeing interactions at margins, at the "resonant interval," as he would later say in *Global Village*. Most of all, Chinese ideogram and the tetrad are deliciously like the Symbolist aesthetics that under-girded the modern

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[107]For an interesting elaboration of this idea in another context see Gregory Bateson's "Experiments in Thinking About Observed Ethnological Material." In *Steps to an Ecology of Mind.* (New York: Ballantine, 1972), pp. 73-82, particularly p. 75.

art that McLuhan always believed best suited for the pattern-recognition required of the media literate in the electronic age. In short, a bifurcated jealousy -- not out of character with what Frye has so aptly, and in another setting, called the "rhetoric of the divided voice[108]." Frye was using McLuhan's early writing as archetypal example of this rhetoric, a rhetoric that Frye ascribed to much of Canadian writing. The bifurcation here was the voice of a theorist who, consciously or otherwise, was poetizing human science and seeking democratic tools for living.

McLuhan's method contains three main areas which appear to be arcane or perhaps mysterious. These are the three ideas of the entelechy of objects, the recursiveness of time and the action on the margins. These ideas appear to be odd because they are inconsistent with much of what we are taught. We are continuously reminded that subjects, not objects create history; that time is forward oriented, a progression which is continuously new and different; and that the action is to be found at the center of things. McLuhan's theoretical structure tends to put itself in a modified opposition to these three preconceived ideas. In the first instance, and as we have noted above, the technological imperative is nothing to sneeze at, however McLuhan is no simple technological determinist. Here we have the idea of the entelechy of objects. Second, time is recursive, accommodating the new which always brings with it as its substructure, the old. Here we have the idea of recorso. In the third instance, the real action is at the margins and this is the idea of chiasmus and

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[108]The specific context of Frye's discussion, following Frye's wry observation that "there was much to misunderstand in McLuhan," was based on McLuhan's apparent ambivalence as media critic/media supporter that appeared in McLuhan's public persona and prose. See Northrop Frye. Edited by James Polk. *Divisions on a Ground: Essays on Canadian Culture.* (Toronto: Anansi, 1982), pp 36-38.

the resonant interval. While these ideas appear to be inconsistent with our previous thinking, they do seem to be grounded within our experience.

First, we have noted that there is a certain logic in things and that logic can have an enormous influence on human organization and experience: we will elaborate on this shortly Secondly, we note that the past does appear to return time and again but each time it seems to be new. This appears most clearly perhaps in the play of fashion, but it can be noted time and again in the way in which fashion grounds everyday life and institutional culture in our societies. No other clearer example of this can be found than in the reworking of various ancient management approaches that become "flavours of the month" in the managerial processes that purport to be rational and completely new even as they determine aspects of our daily lives.

The Laws may seem arcane, they may seem counter-intuitive, but their intent is to provide tools for a critical deliberation, a critical inquiry, into exactly themselves. From McLuhan's perspective, these were not arcane or supernatural forces. They did represent new and significant factors within our accelerated age but they had been part of the mix all along. The trouble was that their rate had increased as had their intrusiveness. Their programs were better. They were proliferant, they were becoming pervasive. We were becoming the sex organs of our machines, and the machines was beginning to exhibit signs of an autonomy and perhaps an autogenesis. For McLuhan, this required critical public deliberation and a change in everyone's consciousness. The tetrad, with all of its weird and wonderful implications, was to be such a tool. The intent, we remind ourselves, was the inoculation of people against the

numbing state of becoming preoccupied with emergent figures at the expense of their impact on the ground; the Narcissus Narcosis.

Up to this point we have exploring McLuhan's ideas about the explicit media. What is implied is the question of the implicit media, material culture as media of communication. If humanity can be understood as the figure, then material culture needs to be understood as the ground. This idea, while never clearly articulated in the corpus of his work, is suggested throughout it. Indeed the method is an effort to bring the ground forward as the focus of attention. Hence I have been arguing that in McLuhan we find an encounter with the question of a unified field within the study of communication, one that brings together both the explicit and implicit media as those devices by which we extend ourselves, shape ourselves and our world, and give form to the world which we will bequeath to our descendants.

The idea of the unified field which would enable the study of communication to address material culture as a powerful media form is clearly anticipated in the work of Innis. Logan in his article on the axiomatics of McLuhan and Innis draws attention to the fact that for both of the writers material culture at its broadest was to be understood as media[109]. *The Mechanical Bride* is filled with material culture: the automobile, clothing and weapons were among the themes that would carry through McLuhan's work from beginning to end. Among the many things that would appear variously throughout his intellectual career were cigarettes, food and wine, furniture, architecture and so on. The problem was that while McLuhan was anticipating this wide field as a

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[109]Robert K. Logan. "The Axiomatics of Innis and McLuhan." *McLuhan Studies* 1, no. 1 (1991): 75-102, p. 76 and particularly p. 82.

site for the study of media his attention was more clearly focused on the explicit media, or this is the way that he is usually read. That is the way that he is read today. But if we are to really begin to understand the implications of our lively stuff, then we must follow him into history in order to understand how things got to be the way they are. McLuhan, as we know, was not a great fan of detail. This is one of the limitations of his approach and can be most clearly demonstrated if we are to try to adapt his ideas to the unified field that he never completely articulated.

While McLuhan was aware of the role played by food, clothing and shelter as media, he gave us no concrete or coherent account of what the constituents of this media field might be, nor for that matter, of their dynamics. Therefore in order to assess what contribution McLuhan's method might make to our deliberation on the future of our lively stuff we must first sketch what these constituents and dynamics might be. In order to "break out" such constituents and dynamics we will have to turn our attention away from the field of communication and turn rather to contributions made in other fields of research and inquiry.

CHAPTER 4

Missing Matters

[T]he crucial study that remains is that of working out in precise detail the relations between second and first natures, which organs or faculties are extended or stressed or numbed and in which pattern or degree by each one of our artefacts[110].

I

In the posthumous *Laws of Media*, McLuhan leaves us with a program of inquiry which, when all had been said and done by McLuhan, remains. The grander purpose of such an undertaking would presumably render more precise and flexible deliberative tools that could be deployed "against" *all* media -- implicit and explicit. While we cannot work out in detail the "relationship between first and second natures" here, we can take at least some provisional steps in that direction. In advance of any such steps, we must first offer something of a classificatory schema; unpack something of the "unified field" which we claim is coiled up in McLuhan's work. But how are we to undertake this challenge when McLuhan's writing on the "unified field" contains little constituent classification and detail?

While we may not be able to rely on the current literature in our own field of communication studies, we can find useful work done in exactly this domain but in "consumer studies" and the "design discourse." I am using both terms not as correct naming for specific "disciplines," but rather as descriptors for studies which bring together disciplines around the various facets of social, cultural and historical phenomena that have emerged from the syntheses of our Modernity.

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[110]Marshall McLuhan and Eric McLuhan. *Laws of Media: The New Science.* (Toronto: University of Toronto Press, 1988), p. 117.

In addition to what these forms of research have to report in aid of our project, we will also draw from our own perceptions, as the matters we are dealing with here "are" the stuff of daily life and our observations about their classification is open to intersubjective substantiation.

We will consider what might be the constituent parts of a taxonomy which would allow us to both get some sense of the "unified field" of the media, and assess whether the grander theory does in fact have some relationship to the things of the world. We will first discuss the formal properties of things as media, then we will expand the level of complexity to include artefacts, substances and surfaces. The first half of our discussion will end on aggregates, that is to say, on systems and ensembles, and then environments. The second part of our taxonomy will deal with properties we normally think of as functions of things. Functions, as we shall see, are a significant feature of any artefact and while not all functions are material, they are properties only possible because of some kind of arrangement of materiality.

In the first portion of a larger taxonomy we will find *adjectives* most useful to describe the various constituents and attributes of these implicit media. In the second section of the taxonomy, we will find it necessary to use *adverbs* as descriptors. Thus when we discuss programs and performativities, exactly those features that have so dramatically evolved over the past 12 generations of Western Civilization, we will use the language that we normally associate with verbs, actors and acts, to describe their properties. We will have more to say about this distinction later.

Media of communication, in one way or another, are always artefacts. The artefactual nature of language is already implied in so far as two people or any group of people can make themselves understood through a common "code." We may not be able to argue intelligently about grammar, but we do know whether someone who speaks our language speaks it "poorly" or "badly." That is to say, speaking poorly or badly with respect to a common language that we and others share. Simultaneously artefacts and objects, and this is one of McLuhan's key ideas, are "linguistic" in their structure. What is meant here simply is that all objects and artefacts can attract and channel attention and intentionality.

We notice a stone and pick it up. By this act we take a thing out of an undifferentiated field of mere stuff and thereby *endow it* with human meaning even as we wonder at its meaning for us or perhaps others. We consider the stone for a moment and then toss it carelessly back into the pebbles on which we are walking. By this act we return the stone to the undifferentiated world and continue on with our projects. We take clay from that same undifferentiated world and through application of pressure and the properties of the substance -- through our expenditure of effort and time, and through the work of our intelligence -- we create a useful object. A jug: but a jug is always more than just a void that accommodates a fluid. Any jug to be a jug must have form. It must have texture, it must be of some kind of substance and it must always have a "manner" by which it allows us to transport fluids and pour them at our convenience. It has a "heft" - a weight - it's substantiality or delicacy.

The characteristics of form -- weight, colour, texture, material and shape -- are all expressions of a social, cultural and historical intelligence[111]. Intelligence is always relational. Expressions of intelligence are also expressions of relationships and thereby media of communication. The shape of the jug may say "Utopia", it may say "Renaissance Italy", it may even say "rusticity". Further, when we use the jug -- we wash it, put it away, retrieve it -- we live, or abide, with it. The jug says something to us about ourselves. It may say that we are deprived of or blessed by a "higher" standard of living. And we may feel either ill-accommodated or enriched by its use. Thus, the scope of information that is transmitted through even a humble object such as a jug can be very wide, very supple and also subtle[112]. The point is that in the forms of the material world we have the outerings of human intelligence and that these forms in and of themselves are already media of communication. How they differ in the way they communicate from words written or spoken is something that we will explore as we proceed.

Before we go any further, let us take a step back. The jug was made of clay, we said. Therefore, before we include discrete objects, we must assimilate substances to the media of material culture. Substance here is understood in the mundane sense of a preparation -- jam, peanut butter, non-biodegradable petrochemical by-products, mascara, tobacco and alcohol products, cornstarch, slag, perfume, wine, even "dead objects" in some cases in the sense of undifferentiated garbage (one thinks of the Mobro and her pariah cargo[113]). By

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[111]"The meaning of things," writes Geertz, "are the scars that men leave on them." In this context, and particularly in the way in which art as one of things of daily life expresses and materializes the flow of social life whence it emerges, see: Clifford Geertz. *Local Knowledge: Further Essays in Interpretive Anthropology.* (New York: Basic Books, 1983.), pp. 94-120, and especially p. 99.

[112]Martin Heidegger. "The Origin of the Work of Art." In *Poetry, Language, Thought,* 15 - 88. (New York: Harper Colophon Books, 1971).

[113]Anita Gordon and David Suzuki. *It's A Matter of Survival.* (Toronto: Stoddard, 1990), pp. 183-7.

substances we refer to axle grease, and flour, to the stuff that we put on our toast in the morning, and to the stuff that we put in our coffee, or spray on our hair to keep it in place. Substances are implicit media as they are used to enhance and express; also we take them to be expressive themselves -- flavours, fragrances (pheromones) and pigments (concrete properties of some substances), for example. Substances, like much of material culture can either be durable or perishable -- each category adding a communicative dimension to the medium at hand.

This leads us to an aspect of things that like substances does not seem to exist in "three dimensionally:" Surfaces. Substances tend toward the functioning of a liquid -- they take the forms we mostly put them into or onto. Surface is a thing too, but at least one of its three dimensions seems to be almost non-existent. -- we say that surfaces have texture, or sheen, but not depth. Surfaces are also presented to experience as being a membrane within which, or under which, other stuff is found. A large amount of the communicative capacity of things is tied up with surfaces. This leads to the entire domain of images. Images, that is to say pictures, usually appear on paper or canvas, tile, sometimes wood. We do not tend to consider these as three dimensional objects. Indeed the two dimensionality of images is often brought forward as a critique of something that we find to be superficial. This may be the case, but not all images nor all surfaces are "superficial" -- that is to say lacking in substance, justice, insight and depth.

Surfaces can be media of communication for the tactile sense. If we think of surfaces as images we think of them in terms of explicit media. There is an implicit dimension to surfaces and that is precisely the one experienced by our

sense of touch. We are met with the communicative property of surfaces continuously in our daily lives. It is the condition of our living and intimately connected to our experience of our own bodies and the way in which our bodies encounter the world; be it the touch of things, the feel of stuff or the touch of others. Life is full of the experience of surfaces on surfaces, the touch of light reflected off of surfaces, and the texture of the surfaces, by which we encounter the world[114].

Through surfaces, *via* the visual sense, we arrived at images. Pictures were the example we used. But in our day-to-day world we know that images can also be much more complex aggregates of pictures and textures. We also know that images can be manufactured, manipulated, promoted; they can be achieved or lost. Images, their creation and management, are the stock in trade for the commercial communication and electoral machinery of the political process in our society. These more complex images -- aggregates of objects, surfaces and practices -- have histories and models which are combined and recombined in various ways. Images involving clothing, grooming, management of language and demeanor and presentation, are things insofar as they can be discussed as existing as totalities discrete from others around them; they have an inter-subjectively verifiable existence. These more complex, aggregate images direct us to the next constituent -- ensembles and systems.

Images can be understood as aggregates made up of a number of elements. We are moving into ever greater domains of complexity. Discrete

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[114]Alphonso Lingis. *Excesses: Eros and Culture.* (Albany: State University of New York Press, 1983), pp. 8-9.

elements of material culture can be assembled into larger aggregates or systems or what we might call ensembles. Here one thinks of the way in which rooms in a home are furnished and organized, and the way in which discrete elements of clothing are assembled into a "look" or "image". What is significant in the discussion of ensembles or aggregates is their gestalt nature. An ensemble is characterized by being greater than the sum of its parts. In isolation one element of an ensemble may transmit one set of meanings but taken in an aggregate those meanings can be subsumed and used to better articulate al larger or more subtle or emphatic message. Just as in discourse, the discrete parts are altered by context.

We need to include ensembles *and* systems because we must accommodate the technological aspect of material culture; assembly into functional systems is an important aspect of the way in which material culture works. A thermostat is a discrete technical device whose purpose it is to respond to fluctuations in temperature. When included in an aggregate with a furnace, a series of air ducts or water pipes positioned in appropriate ways in an environment, the thermostat "disappears" and is subsumed into a central heating system. In much the same way a light bulb becomes part of a lighting system and a simple electrical motor driving a spindle becomes part of the home entertainment system. Material culture as media is made up of discrete parts. These discrete parts are assembled into larger aggregates, the largest ones being cultures and civilizations.

We might pause to elaborate on the distinction between "decorative" and "technical" ensembles (this distinction will play an elaborated role in what will follow). The former, or decorative, we ascribe to clothing, furnishings, personal

accouterments and appurtenances. As we shall see in our discussion of the making of consumer culture and society, decorative ensembles have been associated with marketing of domestic and daily goods, and particularly to women[115]. Functional ensembles, such as mechanical systems, tool kits, the central heating system, have been associated with men and with the production side of the production/consumption equation. We must note here that the distinction is spongy, there is as much an ornamental side to sophisticated systems (even if that be in effects) as there is a "grasp-and-at-em," no-nonsense "utilitarian" purpose behind some very apparently solely ornamental aggregates such as cultures and an "ensemble" rigged to entice a favourable regard of the preferred "Other[116]."

As we have already seen, cultures and civilizations are aggregates, but we do not tend to think of them as ensembles. They are much larger and we spend our lives within them. More properly, they take us into a new order of taxonomy: environments. Environments are things made up of things; aggregates we inhabit and navigate. Interiors of buildings are aggregates. They can also be settings created by a larger aggregate of buildings such as a village or a metropolis. Material culture constitutes an "affective environment" in that ideas about values and feelings are transmitted by an aggregate of implicit and explicit media. Environments also contain surfaces; they may contain images and may be images themselves, or may contribute to images.

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[115]On the use of ensemble based marketing and gender-coding see: Roland Marchand. *Advertising the American Dream -- Making Way for Modernity 1920 - 1940*. (Berkeley: University of California Press, 1985), pp. 66-69.

[116]In this regard, see also the very valuable discussion of the "existential joy" of engineering in Arnold Pacey's account of "imperatives and creative culture," and the "aesthetics of mobility," *The Culture of Technology*. (Cambridge Mass: MIT Press, 1986), pp. 78-96 and p. 82 respectively.

McLuhan had said that one of the key changes in our material culture, was that it had become a process and not a container. On this occasion he was addressing developments in implicit media brought on by the changes in the explicit - arrival of radio, mass press and TV. Transformation of the environment from container to process was a product of the amplification and acceleration of human activity related to "programming," or the pursuit of "utility" and control[117]. Additionally, because of the organization of space relative to use and intention, they can also illustrate a more problematic aspect of this taxonomy, but an essential one - the domain of programmes/utilities.

Up to now we have been discussing the concrete stuff -- things you can lay your hands on, pictures to be pinned to walls, images crafted, doors and candles. This is the "materiality" of material culture as implicit medium. There is more to it than that, however. If we stop here, that is at noun and adjective -- thing and its static properties -- then there will be aspects of material culture that will evade us. McLuhan argued that entelechies -- at one level, "effects" -- are inseparable from the media and *are themselves* among their properties even if they do not exist in a "concrete" and "material" way. This is what is meant by the statement, "the medium is the message." In an age of lively stuff we must move to verbs and the adverbs in order to include an aspect of our materiality just as significant as the "material base" which grounds and enables *it*.

If we get "experience" out of things, and our societies are influenced by the "effects" of new media and technological configurations, then that is what obtains for the user *post factum*. The *factum*, is the program, the "utility" or

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[117]See: James Beniger. *The Control Revolution: Technological and Economic Origins of the Information Society.* (Cambridge, Massachusetts: Harvard University Press, 1986).

"function," and the performance or performativity. The fact is that the thing is *for a purpose* and it translates some aspect of our embodied or disembodied intelligence, muscle and action into a "real" effect. The thing "discharges itself" in a reliable or unreliable way. It "fulfills" our needs; it is the appropriate needful thing. We must add the "effects" because they are "in-wrought" into things, and the in-working anticipates and shapes the things for experience. As we shall presently see, this will have a great deal to do with McLuhan's ideas about entelechy. To conclude the discussion of our provisional taxonomy, we will deal with the way in which these purposes are "actuated," to use McLuhan's words, or realized -- how the things perform.

Programming, a term in wide use today, originates in the Greek word, for something which is written in advance[118]. Computer technicians and users know the term well but so do the various people who work in the multi-media industries as do architects. Programmes refer to the organization of elements to an end and are related to composition, specification, design, strategy and so on. When applied to material space, programming refers to its organization in the interest of facilitating one kind behaviour as opposed to another. For example, a football field is not organized for romantic intimacy, nor is it organized to facilitate the sale of toothpaste. A contemporary store is programmed for the selling of goods and many restaurants are organized to facilitate intimacy. Environments are programmed to lend themselves to some things and not to others. We might even say that by choice, manipulation, and organization of material, a hammer is programmed (designed), to drive and pull nails rather than to apply the powdered hues of cosmetics. The cosmetic sable hair brush

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[118]Programming is proper to any society which is chirographic. Primary orality also "programs" in as much as ritual, myth, teachings of the elders, and ceremonial and functional objects exist. Indeed, at a deep level we are "programmed" by our mother tongues and any language we learn.

on the other hand is not programmed to drive nails into wood. The issues involved here beg the question of "utility".

Utility, and by extension use value, is a category well recognized in social theory and critical thought. It is also a major category in the discussion of economics and social policy. The term refers to how something will be used; of what 'good' it is, the purpose for which something may exist. In a sense utility is another way of talking about programming in so far as it is a consideration incorporated in the making of the stuff and the role that it will play in our lives. What must be noted, however, is that because utility is assumed in the form of the stuff, it too has a "thingly character". Utility must therefore be included into a taxonomy of material culture as media. We also need to note here that utility, taken as a term in isolation, is a complete abstraction. We note this because food, clothing and shelter are abstractions so long as they do not refer to specific things and circumstances in the world. Use value is not an objective given of things but rather a quality that we give them[119]. Because it is given by human beings or assumed by human beings, use value is a cultural category and not a "scientific" one. In its presence in the making of things, it does have an objective character, but that objectivity always reflects the patterned collective subjectivity that we call culture.

If utility or programming are understood as representing the way in which the ends of something's existence are made objective -- steel to drive nails and sable hair to apply tints -- then performativity would refer to the way in which that program or utility are realized. The programming is the recipe; the

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[119]See extended discussion and critique of the "objective value" of things in Marshall Sahlins. *Culture and Practical Reason*. (Chicago: University of Chicago Press, 1976.), p. 151, and again on p. 170.

performativity, what you eat. The utility of an automobile is to get you from point "A" to point "B." The way in which it gets you there has to do with its performance. One car will get you there slowly after breaking down a number of times and polluting everybody's environment by burning oil and creating a din; another one will get you there quickly, quietly, and efficiently. These are differences in quality of materials, engineering, design, manufacturing and the care and attention given the auto in the past. Differences such as these also determine the performativity of any given thing. A chair may look good but it may not hold you up very well. If that chair is there for appearance rather than its capacity to hold you up, its "firmness," may not be what is really important[120]. Appearance in this case may be performativity. In other ranges of things, however, performativity may have to do explicitly with the way in which things work; their ability to keep you from falling to the floor or the lack of that ability. Performativity in this discussion, therefore along with utility and programming, is meant to refine and focus the term "function"[121]. Things may follow and they may function, but function itself is a function of programming and performativity. Culture is the telic institution which programs for performativity. Form may follow function, but function is nestled in cultural form.

Our preliminary taxonomy now includes artefacts, substances, surfaces and images. By exploring greater levels of complexity, our taxonomy also includes ensembles, systems and environments. We have also considered the

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[120]The student of communication can learn a great deal about the actuality of material culture as media from an examination of the history of manufacture and the design literature on the chair. See Caplan's elaboration of "the prop" in Ralph Caplan. *By Design: Why there are no locks on the bathroom doors in the Hotel Louis XIV and other object lessons.* (New York: McGraw-Hill, 1982),pp. 75-92, as well as Forty's discussion of the "hybrid medium" of the Victorian hall chair (to be sat on by one class and seen by another) in, Adrian Forty. *Objects of Desire: Design and Society from Wedgewood to IBM.* (New York: Pantheon, 1986), pp. 84-6.

[121] Jean Baudrillard mounts a critique of the conflation of the ideas of utility and function in "Design and Environment, or How Political Economy Escalates into Cyberblitz." In *For a Critique of the Political Economy of the Sign,* 185-203. (St. Louis, Mo.: Telos, 1981), pp. 185-88, and pp. 191-197.

"working" of things, technological or decorative, in the context of programmes and utilities as well as performativities. To flesh this matter out more fully, we need to take it closer to the realm of daily life and look at how this taxonomy is reflected in the micro-topography of the quotidian. How is our taxonomy a reflection of the conventions and cultivations of the things of daily life: habitat, community, personal comportment and accouterment, ceremonial, provisioning, transportation and projects.

II

We turn our attention now to another of the "missing matters." In our taxonomy we have sought to "break out" what some of the constituents of analytical account of material culture might be. Material culture, as we have seen before, has a factual existence in the world; in the process of creating culture we also create an interactive human geography. Our daily lives are spent in the midst of this geography, though we tend to experience it as a micro-topography -- objects, aggregates, performativities and so on which make up the material substratum of our lives.

To construct a heuristic topography we might consider six categories that create the interlocking *setting* of our lives. To list them, they would include: dwelling, kinship and community, ceremonial, comportment, provisioning and transportation, leisure and recreation, and work[122]. To begin with, let us introduce a term with which to discuss dwelling: I use the term *habitus*

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[122]The preliminary topography we assembled above is indebted for its structure to the work of Ulf Hannerz who constructed a typology for the study of ethnography in the urban contemporary environment. See Ulf Hannerz. *Exploring the City: Inquiries Toward and Urban Anthropology.* (New York: Columbia University Press, 1980), pp. 242-315. Our expansion on the categories that Hannerz assembled out of the conclusions of his field work encompass the ceremonial sphere and that of work or labour.

borrowing it from Bourdieau *via* Miller[123]. Habitus is used to describe the domestic environment and the practices within it which comprise the domestic cultivations of a way of life. According to Bordieau, and then Miller, it is the habitus that shapes our expectations and experiences of cultural propriety. Simply put, the habitus is the familiar home in which we are shaped as cultural and social human beings. While habitus refers to the home in the sense of a place, it also refers to the various activities, rituals and practices that make any one home distinct from another. The habitus is a place, a thing itself and a place made up of an aggregate of things -- things "to hand", as Heidegger would say. The habitus is where and how we "dwell[124]".

The conception of habitus must incorporate within itself the material substratum of which it is composed. Furnishings of various kinds, kitchen utensils, gardening tools, carpets, even fenestration could be incorporated into a topography of the habitus. The habitus includes tapes, books and plants; or we can say that any habitus *can* contain these things. Besides the things, the shape and condition of the dwelling would also have to be included as these qualities too are signs within a social semantic: They bespeak of our place in the social hierarchy and they give a concrete shape to our relationships with others. A hovel is not a palace though either can be a happy or miserable

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[123]Daniel Miller. *Material Culture and Mass Consumption.* (Oxford: Basil Blackwell, 1987), p. 103.
[124]McLuhan's fourfold structure of the entelechy of things might benefit from a comparative analysis with the four-fold of things presented by Heidegger -- this remains a task for a future date. Heidegger's four-fold includes "earth," "sky," "the gods," and "mortals." A representative of this analysis is adumbrated by the following from Heidegger:

> But if dwelling preserves the fourfold, where does it keep the fourfold's nature? How do mortals make their dwelling such a preserving? Mortals would never be capable of it if dwelling were merely a staying on earth under the sky, before the divinities, among mortals. Rather, dwelling itself is always staying with things. Dwelling, as preserving, keeps the fourfold in that with which mortals stay: in things.

See: Martin Heidegger. "Building, Dwelling, Thinking." In *Poetry, Language, Thought,* 143 - 162. (New York: Harper Colophon, 1971), pp. 145-161 as well as pp. 44-45 and 180-182.

home. To be sure the living contents of any home are the relationships of the people who make it up. At the same time the materiality of the home, be it food or furniture, creates a setting, a "frame" against which, and within which, the choreography and performance of those relationships unfolds. We might even think of the habitus as the first point in a series of concentric circles which we encounter through our implicit media. In the habitus we first learn to articulate whom and how we are.

An objection can be raised at this point that not all children are born into nuclear suburban families. Some are reared by the state; some might argue that a collective raising of children is morally better than raising them in a nuclear family. And there are others who would suggest that an extended family is a healthier environment. Be that as it may: Whether we are born into the collective care of the State or whether we are born in a suburban or inner city home, we are formed by the material environment which surrounds us and to which we have access. It is in the habits through which we internalize the "proprieties" and biases of our culture -- these are formed at the "habitus table". Our use of table utensils, as well as our expectations with respect to achievement and quality of life, stem from our experiences within the habitus in which we are formed. These expectations, anticipations and conceptions are later further reinforced, made "real in the world", "actuated" later by the habitus that we ourselves construct. Not only do we learn practices and behaviours; many of them are focused on our relationships with things and, through things, with each other. Therefore, the first feature in this topography would be the home or, more abstractly, dwelling, or the habitus.

The notion of the habitus, or our impulse to it, is illustrated by an architect-colleague of mine when he talks about "nesting". He says that he is always amazed at the way people will arrange a "nest" under any circumstance when they are to make use of a space for a period of time. He notes, not without humour, how people will even arrange themselves and their possessions when they take occupancy of the cramped space of an airplane seat. Luggage is tucked away, things taken out to either read or work with. Before long one's little space has been "personalized." While "nesting" is a mobile function -- we nest as we go -- the habitus is the place where we feel most nested, the place whence we come, whence we return for shelter, and from which we send our off-spring into the world.

The next "sphere" that contains and frames our daily life is the one made up of, and signifying, kinship. For much of our history, kinship and community were very closely connected. What connects them, as what makes us *citizens* of our contemporary democratic societies, is an economy of obligations. This takes many material forms -- we pay taxes, we build collectively, we erect monuments to individuals and groups who have made contributions and sacrifices in the past -- but its simplest one is the gift. This is an economy of obligations and reciprocities with its primary currency being the gift.

Kinship is often articulated and cemented through gifts. Objects and food stuffs, access to social position and opportunity, access to experience and knowledge, needful and playful things -- they come to us from parents, siblings, uncles, aunts, grandparents. As things go some gifts are humble and of little or no value outside of the often invisible fact of having been given and received. One can even invest the gift of freedoms onto a thing, a document, a

constitution. The gift is a special case in a performativity things, and its social dynamics are beyond the scope of this study. Suffice it to say, that the gift, and the economy of co-obligation that it circulates through, is a valuable exemplar of how material culture operates in daily lives to position and re-affirm us in our sense of our relations with meaningful others. The gift is a subtle but insistent form of social communication[125].

Kinship and neighbourhood today are more separate in industrial societies than they might have been, or are, elsewhere. As noted above, for populations living in pre-industrial communities it was not uncommon that most of the people in the immediate neighbourhood were somehow related. This is not the case for highly mobile and individual-oriented contemporary societies. The neighbourhood, however, remains an important aspect of our daily lives. The location of our homes in an area, the nature of the other homes in that same area also articulates something to and about ourselves. Uptown is different from downtown. Winnipeg's North End is not Vancouver's Shaughnessy. Neighbourhoods, regions of a city, are powerful statements about where we choose to be and where we can be. When people buy houses or seek out accommodation, the neighbourhood is a factor in their choices. Here we could begin to enumerate the desirable and undesirable features that

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[125]It should also be noted that McLuhan made little of Heidegger. Characteristically in the unpublished journal for 1972, Nov. 4th, McLuhan notes: "Reading Heidegger on art. Very dull." Dullness was also ascribed to Schutz of whom, as we shall see presently, McLuhan made more of.
125As indicated in the main text, the gift is a special instance in the performativity of things. Preliminary discussion in the sociological literature comes from Marcel Mauss -- see his discussion of the power of objects in exchange in Marcel Mauss. *The Gift: Forms and Functions of Exchange in Ancient Societies.* Translated by Ian Cunnison. 1969 ed. (London: Cohen and West, 1925), p. 41. An extended update and expansion of the discussion of gifts also in Lewis Hyde's *The Gift: Imagination and the Erotic Life of Property.* (New York: Random House, 1979), *passim.* A special instance of the gift as an attempt at blue-printing or 'programming" future behaviours in McCracken's exploration of the "Trojan Horse" gift, see: Grant McCracken. *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities.* (Bloomington: Indiana University Press, 1988), p. 24. The necessary ambiguity of the gift, which can shade into a "double bind" is captured by Baudrillard who notes that the gift always appresents relation and distance; at once love and aggression. See Jean Baudrillard. *The Ecstasy of Communication.* Translated by Caroline Schultze. (New York: Semiotexte, 1987), p. 65.

define neighbourhoods, but the task is beyond our means at this point. The reader will no doubt be able to imagine these or recall them from the experience of daily life. The concrete features of any neighbourhood are evocative, implicit media.

There is another domain of material culture that we meet in various ceremonial spheres of experience. Environments are devoted to this -- consider the heritage and continuing cultivations of sacred and ceremonial architecture around the world. There can be no doubt that ceremonial things are related to communities and kinship (in its imaginary extensions to "people," tribe, nation state etc.), but so are the economic pragmata such as "the common pasture," etc. Ceremonial things, while bringing together the living, also have a mnemonic/projective function of bringing the living together with the dead and those yet unborn; they are often the medium through which this happens -- the community cenotaph on Remembrance Day and the site of Classical Greek drama come to mind. The lives of ancestors are congealed into objects that we use as mnemonic devices to teach our children, and their children, about what really "matters." Materiality also plays a ceremonial role in various rites and exercises of initiation -- be it in the form of razor and deodorant (and varieties of body modification), automobility (for us, the driving license), or access to cosmological images and talismans. Pigments, substances, artefacts, aggregates, environments. programs and performativities become media for the transport of the individual beyond the confines of "self" into a "communion" with collectivities and a variety of altered realities.

Just as materiality works as implicit media in the ceremonial domain of our activities, so does it in our construction of a self -- and this is mostly as social

self. Where for us in the past, our clothing and cosmetic practices often tied us to kin, community and nation (as did our languages and dialects), now the allegiances are more diffuse and fluid. The stylistic vocabularies are more diverse. Along with the rest of our species, we not only share the experience of habitus, we also possess a cosmetic impulse for self-presentation. Materiality plays a central role in this. The domain of self-presentation, like the impulse to "nesting" is a mobile one, it is the habitus we wear. Another term for the expressions of the impulse to self-presentation *via* implicit media is "comportmental surround."

By "comportmental surround" we mean that domain within our immediate manipulatory sphere by which we construct ourselves into social beings. Here we might include everything from the briefcases and/or lunch buckets we truck around with, to our clothing, our cellular phones, the jewelry we wear and the various ways in which we turn our bodies into socially expressive objects. We think of the training of posture and poise, clothing that holds us just and so that enables us to walk firmly or bounce along on our toes and so on. Clothing, in general, plays a central role here. Clothing signifies where we are positioned with respect to others and the roles and positions we enjoy or suffer in daily life. The historical record contains a numerous examples of sartorial codes, regulations, legislation and uses.

We have said that we clothe and adorn ourselves according to a *cosmetic impulse*[126]. "Cosmetic" comes from the Classical Greek word *kosmos* which meant "an ornament," it was also the word for cosmos, in our sense. The

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[126]See the discussion of the "will to parade" that pervades Nature in Alphonso Lingis. *Excesses: Eros and Culture.* (Albany: State University of New York Press, 1983), p. 9.

word conveyed the sense of something made with craftsmanship and an eye for beauty. This cosmetic impulse seems to be common to us all, and takes an enormous variety of culturally determined forms. For example, there is a position that grooming and cosmetic activity are superfluous and perhaps morally questionable. The "natural" body as is, in this estimation, is the morally pure and correct one. The un-made-up face is more "beautiful" than the one that has received cosmetic attention. This may be true from a point of view, as it is also true that one should tilt the soup bowl away from oneself as one finishes one's serving. You cannot use these measures to evaluate people who don't eat soup with spoons from the kind of bowl that our society eats from, nor is it particularly "correct," though it helps prevent slopping soup on one's lap.

The history of our material culture in general, the history of Fashion in the West in particular, reveal that the idea of a natural body, what constitutes one, and the definitions of the "purity" and "moral correctness" are relative to time and place and a multitude of other dynamics in culture. As Miller points out, in some cultures it is the made up face that most clearly articulates unique identity[127]. That one is born with a face is no personal achievement. Everybody gets one from birth; It takes no talent. The adorned face, the face of cosmetic and social mask, is the face that most clearly and evocatively announces personality and identity. This same line of reasoning, which is unabashedly culturally relativistic, can be applied with equal ease to the case of clothing and other forms of adornment.

If we compose ourselves when we go out we do so in the interest of articulating ourselves as we go about our affairs - and our affairs often enough

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[127]Miller, Daniel. *Material Culture and Mass Consumption.* Oxford: Basil Blackwell, 1987., pp. 193-4.

have to do with stuff. We call this category provisioning. For primary societies, provisioning can mean hunting and gathering, rudimentary agricultural and animal husbandry work and trade with neighbouring clans. For urban populations in industrial societies, provisioning means "going shopping." This is intimately connected to stuff. We either buy food, clothing, objects for the habitus or we pay bills or arrange for various services. Here we could include cheque books, money and credit cards as well as the environments in which we go about our various affairs. But here we must mention transportation as it too is part of our provisioning activity.

Our modes of transportation also represent a topography of our implicit media. We may get about on public transit in which case this too says something to ourselves and others about ourselves. Many people, perhaps too many, prefer the automobile. If there was ever an implicit medium which is explicit about itself, then it is the automobile. The range of potential messages "inscribed" into this medium is enormous. The communicative potential of the automobile as an artefact has to do with its form, its imputed qualities, its manufacturer, its age, its condition and its performativity. As discussed above, these are all communicative properties. Thus, we identify the another concentric circle included in our topography. When transportation is expanded to include global travel, then there is even a larger aggregate of artefacts that support it -- airports, customs' booths, airplanes, maintenance equipment, accommodation, food etc.

This sketch of transportation and provisioning directs us to another often-related domain -- recreation and leisure. This domain of our lives is also saturated by implicit media. Whether our leisure is reading books, doing home

renovations, acquiring new skills, cultivating the convi*vi*al table or involvement in playing games and sports, we make use of objects and we further our leisure activities through them. One thinks of the books, hobby tools and equipment, collections of recordings, tapes and CDs. The complex is potentially even larger when we look at a leisure activity such as skiing. Here we might enumerate the skis, the skiing outfit, goggles, poles and all the infrastructure which has been constructed around this activity such as tow lines, bars, automobile ski racks, restaurants, storage lockers, hotels and the like. Even a simple thing such as chess involves the manipulation of expressive objects.

"Do it yourself" activities involve wide ranges of tools and materials. Pursuits such as music also involve objects such as musical instruments and an objectified set of activities that we call musical. We even have furniture that is completely oriented around leisure activity. We think of the easy chair and the hammock. Besides providing us with a place to rest they too, because of their form or design, are implicit media. Should our leisure involve physical culture such as body-building there too we encounter ranges of artefacts which we manipulate to add tone and form to our pectorals, "abs," "butts" and calves. McCracken, in his discussion of how meaning is created in/for the world of goods, suggests that objects are employed in "rituals." One of these is "grooming" in which we and the objects "exchange" meanings, or put another way, in which we take meanings from them[128]. The adolescent washing of the car, ministrations to/for with the mechanical bride, are one example. Mowing the suburban lawn, keeping one's fences mended and garden the envy of the

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[128]Grant McCracken. *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities.* (Bloomington: Indiana University Press, 1988.), p. 86.

neighbours are further examples that resonate in our daily lives, though the ways are as many as the cultures that sustain them.

No doubt the line between grooming and work lies in the facts of the amount of control we have over the conditions, relations, ends, and profits, of the degree and kind of our efforts -- not in our capacity to allocate them. With fewer and fewer of us involved in independent agriculture, barter, hunting and gathering or animal husbandry, more and more of us entered into a larger material domain meant to reproduce the conditions of life -- industrial, commercial/corporate, professional/trades, civic/military, social, cultural, and service paid labour. This move from the habitus as place of work also created the arbitus (one of the nascent forms of the city and market). The arbitus recapitulates all of the previous categories of our truck with implicit media but from the point of view of our jobs. If we use the term habitus to designate the home, then we might use the term "arbitus" to designate the place where we earn our livelihood[129].

Here is a fertile ground for an immense and diverse topography. One thinks first of the place we work for this indicates to ourselves and others where we fit in the hierarchies that are implied in many of the jobs that make up our concrete social world. A corner office is not the same thing as a work station. Doors, walls and fenestration, say something to us and to others. Working in a law office and encountering the rich sheen of mahogany and oak, sculptured glass and deep carpeting is altogether qualitatively different than working on

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[129]It is beyond the scope of this study to explore the differentiating characteristics or arbitus and habitus. We do recognize that there are many, the determinations of allocation of attention and effort being among the most significant ones. For a critical basis see the discussion of estranged labour in: Robert C. Tucker, ed. *The Marx-Engles Reader.* (New York: Norton, 1978), pp. 70-81.

the foundry shop floor[130]. We can add to this topography the clothing that we wear to assume our employee status - various uniforms and accouterments. We can also include the location of where we work (the neighbourhood if you will). Earning our livelihoods often enough requires transportation. Yet more implicit media.

Often the quality of affect delivered by our arbitus has a great deal to do with whether or not we like our jobs. This affective dimension can be seen as a reward in itself -- a reward, or perhaps a sentence, that we must endure. The work of Frederick Taylor, in the previous century, and the work of all the organizational and productivity consultants and industrial interior designers since, has been clear evidence that the affective dimension of work and the working environment is a significant one for productivity. Even though this is often only intuitively known, it is nonetheless clear to both employers and employees. Perhaps we are no longer formed in our identity by the work we do, but it does play a significant part in our expectations, hopes and projects for ourselves and our significant others[131].

As this decade draws to a close, we may be witnessing another of the "reversals" that McLuhan had identified. Concomitant with the "re-structuring," "down-sizing," "right-sizing" of the corporate and public sectors, we see a rise and expansion in the consultant, contract, free-lance and otherwise "nomadic"

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[130]For a critical vector see Adrian Forty. *Objects of Desire: Design and Society from Wedgewood to IBM*. (New York: Pantheon, 1986), pp. 120-55, particularly pp. 146-7.

[131]See Dean MacCannell on the place of work in social differentiation in: *The Tourist: A New Theory of the Leisure Class*. (New York: Schocken, 1976), pp. 157-9. Also Bourdieu's analysis of the relationship between class, taste, and material culture: Pierre Bourdieu. *Distinction: A Social Critique of the Judgement of Taste*. Translated by Richard Nice. (Cambridge, Mss.: Harvard University Press, 1984), pp. 260-3i7, as well as abridgment, analysis and critique of "essentialist assumptions" in Daniel Miller. *Material Culture and Mass Consumption*. (Oxford: Basil Blackwell, 1987), 150-7.

employee. As the corporate sector no longer provides a site for work, many more workers are finding that the home needs to be the site for work. With the electronic office and tele-commuting, as well as more flexible corporate work arrangements, we are returning to a new variation on the cottage industry. We may be seeing the return of the "parlour" now returned as the room in which the trappings of personal professional credibility and achievement are mixed with the functional tool kit of one's craft or profession. The professional office and craftsperson's studio moved back into the home.

Since before we were even "human" in the modern evolutionary sense, we had already developed the capacity to create the tool, the ornament and the talisman. Our "primitive" tool kits were not without their beauty, grace and effectiveness: the obsidian blade still provides the finest cutting edge, and we can only marvel and ponder the circumstances and conditions, beliefs, values, skill and imagination of those of our ancestors who painted the leaping and gamboling animals in the deep grottos of the many-thousand year ago world. At least two things separate us from those ancestors -- they were few in a world still given as mystery, and they had few things. The traditions associated with metallurgy -- the virtually pan-human awe for the "molten blood" of "Mother Earth" midwived by smiths -- remains potent to this day. Midwifery of the Mother's blood has rendered us this technotronic world we pass on into the next millennium[132]. But there are more of us, our history has become a second nature, and the things (if not our desires) are changing. We must next attend to another of the missing matters: what is an artefact? how is it a medium? What

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[132]For an extensive discussion of the many figures and forms within the mythic legacy built up around metallurgy in the West see: Mircea Eliade. *The Forge and the Crucible: The Origins and Structure of Alchemy.* Translated by Stephen Corrin. 2 ed. (Chicago: University of Chicago Press, 1962.), pp. 87-109 and *passim.*

has the history of the artefact have to report about the advent of the age of our

lively stuff?

CHAPTER 5

The Implicit Rhetoric of Things; Entelechy

> As indicated earlier, all human artefacts are extensions of man, outerings or
> utterings of the human body and the psyche, private or corporate. That is to say
> they are speech, and they are translators of us, the users, from one form into
> another form: metaphors[133].

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We have chosen the designation "implicit media" to distinguish material

culture from what we normally call media: spoken word, chirography, print,

photography, telegraph and telephone, radio and TV, and telecomputing. In

what follows we will elaborate on our reason for choosing this designation. We

will deal with the "force" of communication by implication. And we will explore

the relationship between the artefact, the rhetorical tradition and McLuhan's

ideas on entelechy. Our intent in this chapter is to explore the idea that artefacts

are "programmed," and that they are performative. The performativity that we

will explore here most, will be communicative. Our guiding question through

this chapter will be -- how do artefacts communicate?

Because the majority of our implicit media are goods and things of daily

life, we tend to think of them as utilities, luxuries, necessities and so on. Rarely

do we consider our bathroom faucets, office furniture, personal accouterments

as media. Though, when asked to reflect on this, nearly everyone would

concede that they are media and they say "something" to and about us and

themselves. Otherwise why would there be choice? "Ostentatious"

consumption is ostentatious not because much is consumed, but because much

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[133]McLuhan, Marshall and Eric McLuhan. *Laws of Media: The New Science.* Toronto: University of Toronto Press, 1988, p. 116.

is consumed in the view, and for the envy, of others. The act of consumption and the quantity and quality of the consumed are indicators of "wealth" *to burn*, as it were. The threadbare winter jacket says "warm," "serviceable," or perhaps "of reduced means," etc. When we are proud of our habitus and invite friends over, we are subconsciously aware of the communicative possibilities of our stuff. When we nest in a work-station -- put up our chosen images, arrange for a lamp, get some plants and rearrange things so that they are more comfortable -- we are also communicating with and about ourselves.

Following Gombrich, Miller provides a metaphor that sheds light on the implicitness of material culture. Our stuff plays a role not unlike the one played by the frame for a work of art. If we understand "frame" in the broad sense, then we can agree with Miller that the frame "makes" the work of art. A tradition or a discourse, the walls of a museum, four ornate boards and a sheet of non-reflective glass, any act that sets something apart and "elevates" it, can constitute a frame. To be sure, we direct our gaze at the work of art, but we also note, if in passing, that it is in a frame. The frame, as it were, "says": "Behold, something worthy of your attention." The frame "points" to the art and declares it such. In much the same way, our stuff "frames" a work of art: the person who has access to or ownership of the stuff[134].

McCracken suggests that material culture as media communicates "*sotto voce.*" In theatre the term means some form of articulation "under the breath," "in an undertone," "in a private manner," and when it is used in conducting music, "very softly." Material culture, while possessing robust communicative

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[134]Daniel Miller's adaptation of Gombrich's conceptions of the frame and design provides a metaphor of elasticity and descriptive acuity. See: *Material Culture and Mass Consumption.* (Oxford: Basil Blackwell, 1987.), pp. 100-2.

properties of its own, cannot duplicate the analytic, "fragmented' or sequential and rationalizing aspects of spoken and written language[135]. While meanings are in-wrought, and then exploited by the users, the meanings are more open to interpretation. When speech employs such subtlety, it usually takes the form of poetic language. In poetic language meanings are transmitted indirectly and by allusion. Communication is indirect, "cool" as McLuhan would have put it, in that little information is given but it is chosen and arranged for maximum *implication*. As Mallarme, whose ideas about poetry and communication McLuhan had studied, would have put it: "To name is to destroy; to suggest is to create[136]."

How exactly, does material culture communicate? McCracken, while at pains to demonstrate that the system of material culture does not operate exactly like language, uses an number of examples and terms derived from linguistics and literary criticism to answer the question "how?" Like many other writers, McLuhan among them, McCracken points out that there is a strong link between the metaphor in language and the way objects communicate. A metaphor is a translation of information from one configuration into another. When we draw a parallel between a configuration of information in one context to another context or setting, we shed light or provide insight into that configuration. "Lightning," as a word is surely not *the* actual event of a flash of brilliance following the rattling clap of thunder. The actual event *can* leave us at

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[135]McCracken explains that this is best expressed on examination of the clothing system as language. Seen from this perspective, there can be no true syntagmatic character ascribed to material culture "as language." While not disputing that language and various material codes are essentially "alike," we can note that McCracken's assertion by exemplar does flounder a bit when stretched to cover systems and ensembles, however. Grant McCracken. *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities.* (Bloomington: Indiana University Press, 1988), pp. 65-7.
[136]Stephane Mallarme. *Selected Poetry and Prose.* Edited by Mary Ann Caws. (New York: New Directions, 1982).

a loss for words, and might be "embarrassed" by our inability to adequately describe it to someone who has not experienced such an occurrence. We may infer a great deal from an artefact, but find it very difficult to bring all the inferred "to language."

The artefact, McCracken points out, is a "motivated sign" and is close in mode of presentation to the figure of speech called the *onomatopoeia*[137]. Coming from the Greek roots "*onoma*" or name and "*poiein*," to make," onomatopoeia is a figure of speech in which words imitate the sound or effect made by something or some process: one thinks of "spattering," or "flopping," or a "gaggle" of geese The artefact, says McCracken, conveys information. In a very similar way, the thing *is* a thing itself. Whether the automobile says "ostentation," or "speed," or "reduced means" or "other priorities," the thing remains an automobile. In much the same way, recently-initiated young tribesman's spear may say "manhood" and cascade meanings for him, but the spear remains a serviceable weapon that can actuate various acts of violence and coercion. The *fact* of the diamond's durability and ability to reflect the play of light sets off the meanings, as does the penury commitment which is understood as an indication of the buyer's' ability to provide for a family, all other meanings notwithstanding.

As Leiss puts it, goods are a combination of physical and imputed properties. The imputed properties are the projections of our desires[138]. But things onomatopoeically suggest some of these imputations -- that is to say that

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[137]Grant McCracken. *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities.* (Bloomington: Indiana University Press, 1988), p. 76.

[138]William Leiss, Stephen Kline, and Sut Jhally. *Social Communication in Advertising: Persons, Products and Images of Well-Being.* 2nd ed. (Scarborough, Ont.: Nelson, 1990), pp. 310-1.

they have properties that can, by demonstration, ground, "invite," "encourage"
something of the "projection." McCracken describes the implementation of this
capacity of things in the way consumer goods are used to connect their owners
to distant (in time and space) hopes and ideals[139]. The red sports car may be
part of a larger lifestyle including the downtown condo, country-side home,
holidays in distant exotic places, etc.. The whole package may never be
accessible to the person in question. The sports car, as an objective part of the
overall aggregate, is attainable; it manifests or demonstrates, by association, a
series of broader implications about person who drives this car, from where the
car appears coming and where it might be going. The artifact can buttress
projects and/or expectations of where we have been and provide a "safe haven"
in a world of continuous and often disturbing change. The thing remains and
brings with associations of "better times," such as childhood for some -- Citizen
Kane's "Rosebud," for example.

Another figure of speech which sheds light on exactly this "associative"
quality of things is the *synecdoche*. When we use a part of something to evoke
the totality, we are employing a synecdoche: One example is in "All hands of
deck," where the hands refer to sailors; asking that listeners "lend their ears," is
another one. In this way the red sports car refers to a larger aggregates or
systems in which it is "nested" -- for the consumer, perhaps attitude and lifestyle;
for the planner, roads and services; for the ecologist, the systematic depletion of
non-renewable natural resources and intensification of pollution, and so on.

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[139]See a comprehensive theoretical account of the projective capacity of material culture as well as field
application and interpretation in the discussion of "displaced hopes and ideals," and the "evocative power"
of things. Grant McCracken. *Culture and Consumption: New Approaches to the Symbolic Character of
Consumer Goods and Activities.* (Bloomington: Indiana University Press, 1988), p. 113.

The artefact emerges from a set of relationships and is programmed to further enter relationships.

Schutz, following Husserl, calls this aspect of the communicative capacity of artefacts "appresentation" -- that artefacts are *always already* interconnected, and that something of this connectedness is demonstrated by the thing's being[140]. On seeing the front side we "naturally" assume that it has a reverse side, always denied our visual sense. Artefacts, as they emerge from human relations, bring with them something of those relations -- networks of associations, references to the "codes" whence they emerge, their relative standing to each other in the hierarchies within those codes, and other meanings, allusions and associations, that are in-wrought within them. Not only do things "appresent," they do so because they are nested within "appresentational schemes[141]." The example of this at its most mundane is in the "ensemble."

McCracken provides a very compelling example of the psychodynamics of the ensemble, or how things "refer" to one another. He recounts an essay written by Denis Diderot (1713-1784) on the occasion of receiving a gift of a new dressing gown. To make a long story short -- Diderot receives a gift of a

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[140]Alfred Schutz. *Collected Papers: The Problem of Social Reality.* III vols. Vol. I. (The Hague: Martinus Nijhoff, 1962), pp. 352-356.

[141]*Ibid.*, p. 295. Our turn to Schutz in this discussion is not without precedent. A little over a year before the debilitating stroke in Sept 79, in his unpublished journal for 1978, July 21st, McLuhan notes: "Eric [McLuhan] and I began to look at Schutz as a frame for LOM." McLuhan would also note that he found Schutz "full of phenomenological jargon and costume," and as result "very dull." Nonetheless, McLuhan could see the potential in phenomenology, especially because "Schutz is all figure/ground." There are many parallels between the "phenomenological approach" and McLuhan's method. Perhaps most clearly evidenced in City as Classroom, this relationship has still to receive a rigorous research and analysis. It should be noted that McLuhan, in his way, took an active interest in not only the Phenomenological "school", but also in the Structuralist "school" and the syntheses of literary and critical Post Modernisms. In a note made on an intercontinental flight to Paris McLuhan observes that he had discovered "structuralism" late, and expresses frustration. Foucault and Derrida both appear in his journals and notes of the late 70s. In another set of notes McLuhan muses that the "structralists" represent a kind of re-assertion of the Left Brain orientation in contemporary society.

new dressing gown. Working in his study he notices how the new gown seems to make the rest of the furnishings in his study seem old and run-down. The net effect is that Diderot replaces the furnishings in his study but finds himself longing for his old comfortable and shabby old domestic arbitus. The gown had made the desk look shabby. The desk was replaced. But the new desk made the old bookshelves look even older. Thus the donative object set out a blue-print around which the rest of the arbitus had to revolve. McCracken dubs this appresentational dynamic "the Diderot effect[142]."

Seen as something in our daily lives, as opposed to the French Enlightenment, the dynamic is at work all around us as it has for our species since it began to evolve "cultures." How many of us have purchased or acquired a piece of clothing only to come home and discover that nothing else we have "goes with it." The solution is to go out and get something that does. Having discovered the work of an author we have found rewarding, out and get more books by the same author. When driving an older car, getting one thing fixed often enough leads to another. Adding new applications to a PC seldom means "load and go" -- one ends up fiddling to get everything that was working prior to installation working again.

McCracken says that the consumer good is a more effective communicator if it is supported by a larger code or ensemble of objects that amplify the meanings of the object. Appropriation, as Miller discusses it -- that is

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[142]The Diderot effect is a major contribution to our understanding of the dynamics of how material culture is employed as a medium. See: Grant McCracken. *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities.* (Bloomington: Indiana University Press, 1988), pp. 120-9. See also contextualization of the Diderot effect in the social history of the development of marketing strategies and commercial communication formats in William Leiss, Stephen Kline, and Sut Jhally. Social *Communication in Advertising: Persons, Products and Images of Well-Being.* 2nd ed. (Scarborough, Ont.: Nelson, 1990), pp. 79-88.

the way in which products of alienated labour become our own inalienable things -- serves to underscore the significance of the ensemble[143]. In the case of appropriation, it is the very act of recontextualizing and *integrating* the artefact into the habitus or some aspect of out personal topography that begins the "work" of consumption, or our "dwelling" with the thing. The extant "code" of artefacts sets the parameters for future integrations. It is this permanence of the integrated artefact, and the sedimentations of artefacts, their appresentational schemes, and our histories with and through them that constitutes culture. "Material culture makes culture material," as McCracken says.

The Diderot Effect then is the way in which "things" go together into coherent unities that we learn to perceive and anticipate from childhood. Certain herbs go together in that they can be used for healing, others for everyday cooking. Some objects go together because they are ceremonial or transgenerational alluding to kinship and/or community. Others go together when we are going out to look our best, and still others are grouped because they are useful for working wood. We learn the world through such classification -- transforming the world of undifferentiated stuff into a coherent, productive, sensible place.

The artefact is at once associative and projective. We have already explored the idea of programming and performativity above: the artefact is

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[143]Two related ideas are involved here. First, that under current conditions, the practices that make up "consumption" do constitute a kind of labour or work. Consumption becomes a creative process by virtue of the acts of recontextualization of newly acquired goods into the extant domestic, personal and even collective-corporate array of material culture. Caplan observes that civilization is based on a long series of "creative specifications" of extant things; though Caplan does not use the term bricolage it is clearly implied when he says: "Our culture finds its origins in creative specification." For a sophisticated discussion of consumption as work see Daniel Miller. *Material Culture and Mass Consumption.* (Oxford: Basil Blackwell, 1987), pp. 190-1; the relationship between appropriation and recontextualization is discussed on p. 167. Also see Ralph Caplan. *By Design: Why there are no locks on the bathroom doors in the Hotel Louis XIV and other object lessons.* (New York: McGraw-Hill, 1982), p. 64.

programmed, therefore it is already associational as it is the product of an intelligence concerned with ends and means; and it is performative, which is to say that it promises or delivers some modulation of the current reality and human experiential possibilities and states. The artefact is at once an extension of our bodies and our imaginations. The artefact refers to itself, to the things like it and/or related to it, and to the possibility of experience through or implementation of it. The artefact *is*, it has a providence, and it evokes possibility.

Because it is in the world, the artefact is intersubjectively verifiable. There is no world without artefacts: there are no artefacts but without the imaginations and acts of Others. Hanna Arendt writes:

> It is this durability which gives the things of the world their relative independence of men who produced and use them, their "objectivity" which makes them withstand, "stand against" and endure, at least for a time, the voracious needs and wants of their living makers and users. From this viewpoint the things of the world have the function of stabilizing human life, and their objectivity lies in the fact that -- in contradiction to the Heraclitean saying that the same man can never enter the same stream -- men, their ever-changing nature notwithstanding, can retrieve their sameness, that is, their identity, by being related to the same chair and the same table. *In other words, against the subjectivity of men stands the objectivity of the man-made world* rather than the sublime indifference of an untouched nature, whose overwhelming elementary force, on the contrary, will compel us to swing relentlessly in the circle of their own biological movement, which fits so closely into the over-all cyclical movement of nature's household. Only we who have erected the objectivity of the world of our own from what nature gives us, who have built it into the environment of nature so that we are protected from her, can look upon nature as something "objective." Without a world between man and nature, there is eternal movement, but no objectivity [my emphasis][144].

Besides being a ground and a associative/projective medium, the artefact is an objective correlate of a subjective or intersubjective states. When we cultivate a lifestyle or a cultural tradition, we do so with the aid of things. The state of our

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[144] Hannah Arendt. *The Human Condition*. (Chicago: University of Chicago Press, 1958), p. 137.

things tells us about our state and the efficacy of our projects. The thing "speaks" for all to "see" and "hear." According to Buchanan, the way it speaks is through rhetoric, epideictic rhetoric[145].

II

Buchanan, like McLuhan before him, argues that artefacts are products of intelligence and are "purposive." All things made are made with some effect in mind. According to Buchanan, artefacts, as much as language, are products of the rhetorical imagination. As things are made for a purpose, they seek to persuade, to communicate their purpose effectively to/for the user. Artefacts may be programmed for "utility" or for "cosmeisis," or "artistic contemplation," but in each case they are "accountable" as they are expected to perform. What artefacts share with language is that their mode of communicative performativity is three-fold: when artefacts "speak," they tend to do so in one of three forms of argumentation long ago codified in the study of rhetoric. Buchanan explains the three forms of argument:

> Persuasion in language can be oriented in any three directions. It can be oriented to the past, as in a law court, where we are persuaded to make necessary judgments of fact. Also it can be oriented to the future, as in political debate, where we are persuaded to make necessary judgments about contingent courses of action. And finally, it can be oriented to the present , as in a variety of social ceremonies where we are persuaded to consider something valuable or worthless, hence, to praise or blame the matter offered for consideration. The latter is known as epideictic or demonstrative rhetoric and is perhaps the most puzzling of all rhetorical forms because it grows out of materials from the past and hints at possibilities of the future, yet is most concerned with the present[146].

145Richard Buchanan. "Declaration by Design: Rhetoric, Argument, and Demonstration in Design Practice." In *Design Discourse: History/Theory/Criticism*, edited by Victor Margolin, 91 -110. (Chicago: University of Chicago Press, 1989), p. 106-7.

146Buchanan refers to Perelman's argument that epideictic rhetoric is central to the art of persuasion because it increases adherence to values, hence, strengthens the disposition to action. Using this form of rhetoric, the speaker seeks to establish a sense of communion around values recognized by adherence. *Ibid*, p. 106.

This form of rhetoric is "most puzzling" because, when it is an aspect of communicative performativity, it sets up a field of tensions that we have already been navigating: the fact that the thing *is*; yet it refers elsewhere, it promises, and yet it remains as is, in our midst. Buchanan continues:

> Of these three orientations, design arguments and the rhetoric of things are most like demonstrative rhetoric. They are demonstrations or exhibitions, growing out of the past (as in traditional shapes and forms or in already known scientific principles that provide premises for construction) and suggesting possibilities for the future (as in future activities that a given object may make possible), yet existing primarily in the present as declarations[147].

Each of the three modes of argument are made up of combinations of three kinds of argument, says Buchanan. Whether the rhetorical performance is oriented to the future (political), the past (jurisprudential) or declaration (epideictic), it is judged according to three imperatives -- the technical, the social and the psychological. Every argument has to demonstrate conceptual and logical integrity and competence; this is the technical part of the argument. Every argument is grounded on, emerges out of, and impels intersubjective fields of valuations and hierarchies; the ethical. And every argument sets out to "touch," "move the listener," to "reduce the distance between the subject and the object:" the aesthetic.

That this tri-partite structure obtains in the domain of the artefactual is supported by two practitioners of its making -- the former a 1st Century C.E Roman architect and engineer, the latter a contemporary engineer and educator: Marcus Vitruvius Pollio and Arnold Pacey respectively. Vitruvius left behind him an architectural legacy and doctrine that remains influential. He taught that the three characteristics of good architecture "commodity, firmness

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[147] *Ibid*, p. 107.

and delight[148]." There was more to building than merely putting up four walls and setting a roof overhead. Structural necessities were covered off by the "firmness" part of the equation. The formula also called for commodity -- convenience, suitability, comfort and appropriateness. Delight, rooted in the Latin word *delecere*, "allure," referred to aesthetic or affective realm.

Writing almost 2000 years later, Pacey argues that we must expand our view of technology to see that there are three determinants at work within it at all times, except that two of them are often suppressed by a dominant one. For Pacey, technology has a technical dimension, an organizational one and a cultural one[149]. Our civilization specializes in mastery of the technical domain of technology while often relegating the problems that result from a dysfunctional fit between things and people to secondary agenda. From Pacey's point of view, only the recognition that technology always involves society and culture as well as the technics will provide us with ways to more successfully scale the costs and benefits of our culture of technology in an increasingly cramped world.

The tri-partite artefact and its discursive structure as follows:

CLASSICAL RHETORIC	LOGOS	ETHOS	PATHOS
Vitruvius	firmness	commodity	delight
Pacey	technical	organizational	cultural
Buchanan	technical	ethical	aesthetic

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[148]Witold Rybczynski. *Home: A Short History of an Idea*. New York: Penguin, 1986, p. 90.

[149]Pacey works out the implications of this *passim*, of particular noteworthiness is his elaboration of value systems and technology along gender-lines. In Arnold Pacey. *The Culture of Technology*. (Cambridge Mass: MIT Press, 1986), pp. 97-119.

Buchanan's thesis is that the designer, rather than just making an artefact or object, is "actually creating a persuasive argument that comes to life whenever a user considers or uses a product to some end[150]." The persuasive argument is made up of three elements "they involve interrelated qualities of technological reasoning, character and emotion, all of which provide the substance and form of design communication[151]. The first, technological reasoning, the "logos" of design, is like the backbone of logic within persuasive communication. The second, character, is the "ethos," or the relative positioning in a social structure of evaluation and hierarchy. The last is "pathos" of feeling -- the affective realm.

It is clear that these categories are heuristic and interpenetrant. They do allow us, however, to examine the ways in which things are patterned in conception and execution as *totalities*. We can further extrapolate on these categories by adding the structural or programmatic content of things to the technical. We can also borrow a term from the Constructivists to note that the thing has a substance, a mass, or a "faktura." In terms of the objects that would make the mechanical paradise of Western Civilization, to the social and ethical we can also add actuation, the event of things being or working within a lived world of others. And to the category of pathos or aesthetics we might add the presentative aspect of things, the way that they bridge the distance between themselves and our expectations, and the content of our experience of the program and performativity.

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[150]Richard Buchanan. "Declaration by Design: Rhetoric, Argument, and Demonstration in Design Practice." In *Design Discourse: History/Theory/Criticism*, edited by Victor Margolin, 91 -110. (Chicago: University of Chicago Press, 1989), p. 96.
[151]*Ibid.*.

Based on these discussions, we can elaborate a broader set of parallels and characterizations that constitute the tri-partite artefact:

	LOGOS	ETHOS	PATHOS
Vitruvius	firmness	commodity	delight
Pacey	technical	organizational	cultural
Buchanan	technical	ethical	aesthetic
	the structural (programmatic)	the performative	the presentative
	"faktura"	"actuation"	"experience"

The presentative aspect of the artefact has to do with its presence. It presents itself to experience, and with the increasing anonymity of industrial production, this aspect was to become increasingly problematic -- something we will explore in the following chapter. On reflection, it is clear that it is this presentational aspect of things that greets us first, because this is the most explicit side of the implicit media. Presentation, in this sense, is the concrete associo-projective presence of the techni-etho-affective object within the paramount (intersubjectively verifiable) reality of daily life. The word, "present," itself suggests as much as it is an aggregate of the Latin *prae* + *esse*; "before," and "to be" -- that which is before us. Presentation is further defined as a symbol or image representing something; something offered, a gift; something set forward for the attention of the mind; a descriptive or persuasive account; an immediate object of perception, cognition, or memory; and/or a method by which A/V or live performance is introduced or delivered to an audience.

The presentation of the techni-etho-affective object sets it forward. The presentative aspect sets discrete items into context and sutures individual entities into sequence. The shaping of the object, and its presentative features also declares the whole as the frame and the discrete entity as an articulation of the whole -- this in as much as it is the presentation of thing that reveals the thing as belonging within a sequence or appresentational scheme. This thing is Egyptian or of a future imagined world, for example. The presentational dynamic contains the first apprehension of the thing, is the first articulation of it as an "outerance," or utterance. The presentative dynamic "sign-posts," or directs attention; pre-programs consciousness and sets off associative chains of inference.

A number of salient points here for our project: First, the parallel between Buchanan's assertion that designed objects -- *all* artefacts and their aggregate forms -- are media of communication, and McLuhan's insistence that every thing is an "outerance," "utterance," a metaphor for and an extension of ourselves. The artefact possesses and expresses the intelligence and means that produced, "outered" it. Second, through Buchanan's correlation between design, communication, and rhetoric as the originary study of communication, we can assimilate his tri-partite constitution of the argument to our inventory of the way in which material culture communicates.

III

Combining these ideas we might say that artefacts are techni-ethico-aesthetic utterances and extensions of ourselves. Their communicative constituent parts are available to manipulation and arrangement in varying ratios and relationships; each arrangement represents a different programming of materiality and sets parameters for anticipation and expectation, and evaluation/cultivation of performance. In this way artefacts are projective media. We project ourselves through and on them. Since they rise out of relations, artefacts are associative, and in aggregate form, they are not only communicative but also discursive and "effective." Through the logics of appresentation and relative standing artefacts call to and for each other. We must now turn our attention to the question of the "effects" of the implicit media. McLuhan's formulation of entelechy has a great deal to do with this "calling."

At the outset of this discussion we noted that our interest was in elaborating on the programmatic and performative qualities of the implicit media. For McLuhan questions of performativity were subsumed to the question of effects, and as his ideas evolved, effects of media were renamed "entelechies." While re-reading Innis in 1971 McLuhan made what he considered to be the most important discovery of his life -- entelechy. He realized that artefacts were like programmed entities which released energy when used. McLuhan did not impute a soul to objects nor a "life," yet he could not but acknowledge that once the "genie was out of the bottle," there seemed to be no way to put it back. Or, it took a lot of effort to keep it doing only what it was supposed to be doing and not running off with the lamp. Things seemed to take on a life of their own. In a letter of that year he discusses entelechy:

Entelechy or energia is the recognition of the new actuation of power brought about by an arrangement of components whether in the atom or the plant or the intellect. Pens and swords and ships and sealing wax which actuate human potential, creating specific new patterns of energy and form of action
... In the electric age when the actuation of human energies has gone all the way into the organic structure of life and society, we have no choice but to recognize the entelechies of technology. This is called ecology. [152].

It is clear that while we must include entelechy as a key element in our inventory of the communicative dynamics of material culture, the term and McLuhan's usage of it, pose a number of problems. First, going through the McLuhan corpus one discovers that there seem to be two uses of the term. Much as Innis has two uses for the term "oral tradition" (politico-deliberative and mythopoetic), so McLuhan seems to use the term entelechy in two ways. On the one hand entelechy is what is released by the performativity of the artefact -- the "effects." The coming of chirography to the Greeks ultimately destroyed their oral culture; the printing press and moveable type, printing in lead, paved the way to the breach of the civilization of the Medieval World with its unities of dynastic rule, sacred language, monopolies of knowledge, and unified coherent spiritual culture. The new technologies led to proliferation of nations states and the spread of Western civilization globally. In this reading "entelechy" is interchangeable with "effect."

On the other hand, if not as explicitly, we have the notion that the entelechy is in-wrought, an integral component of the artefact, sitting there and

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[152] From Letter to Claude Bissell, March 21, 1971. Molinaro *et. al.* explain that in a letter to J.M. Davy written the day before, McLuhan explained that "entelechies are potentialities that become actual." Matie Molinaro, Corinne McLuhan, and William Toye, eds. *The Letters of Marshall McLuhan.* (Toronto: Oxford University Press, 1987), p. 429. McLuhan was pleased to acknowledge his indebtedness to Innis. McLuhan went so far as to suggest that his "discovery" of entelechy was actually a discovery of Innis' discovery of it before him. We might note at this juncture that while Innis drew connections between knowledge and power, McLuhan might have drawn the connection between culture and energy. This comes through clearly in McLuhan's re-working of Innis' analysis on the effects of new media on society.

waiting for someone to "push the appropriate button." From this reading, the entelechy of an object or aggregate is a "promise" of actuation, or an implication or invitation. Once a society gains access to certain new media forms, new energies will be released that will transform both the users and their societies. These energies, for them to be released, must be stored up somewhere. Given that the human predicament has remained relatively unchanged since at least our earliest records of it, what must have changed, is our capacity to "coil up" the genie in the bottle -- always bigger and better genies in ever smaller and more portable bottles. While he never uses the language, it is clear that **McLuhan implodes programming and performance into "entelechy."**

As early as *Understanding Media*, and with even earlier rehearsals in his journals and *the Mechanical Bride*, the theme of things creating their own "wants" quite independently of the humans who use them haunted McLuhan. Like Marx and many others, McLuhan saw that there was something elusive about the way the material world was proliferating. Needful things, rather than arriving at a plateau of sufficiency, continuously permutated and the "great heap" of stuff grew and grew. The fascination we have with the new and improved, the impulse to touch, flip toggles, and push buttons, to court the regard of the Other through mastery of stuff, *fascinated* McLuhan. Entelechy, the "calling," or "appresenting," of things to other things and aggregates, lay at the heart of the permutative and proliferant processes.

One reads this and wonders -- had McLuhan really discovered the fact there are two forms of energy -- potential and kinetic? What McLuhan was adding to the inventory of the communicative properties of the implicit media was the notion that we had developed ways to store energy within our things.

The book bore this out, but that was explicit media. Given the transformation of daily life within McLuhan's "memory envelope," this was borne out also by the stuff of daily life. The environment and topography of daily life were no longer containers. Through our technologies and stuff, we had transformed both environment and topography into an energized set of processes.

Thus we will add entelechy to our provisional inventory of the communicative psychodynamics of the implicit media. We will note that by entelechy we will mean the programmatic and performative aspects of the artefact's "being." This, along with the tri-partite structure of argument -- technical, social and cultural -- will help us to add a critical mass to our conception of implicit media as an associative and projective medium. Finally, these things taken together will further our understanding of what is meant by the assertion that things are objective correlates of subjective and intersubjective states.

Having set out our provisional taxonomy, topography of daily life and a schematic of communicative properties of our implicit media, we must still turn to the lived world and trace something of the evolution of the implicit media. We need to do this in order to fill in McLuhan's matters before we can turn to the convergence of our implicit and explicit media into the lively stuff that emerges into our lifeworld today. We turn therefore to history again.

CHAPTER 6

From Mechanical to Cybernetic Paradise

At the beginning of the last century [early 1800s], the home of a reasonably well-off family of four contained a set of objects comprising no more than 150-200 items, including crockery and clothing. The home of a comparable family today might contain 2500 to 3000 objects, including electric appliances and items used in the pursuit of hobbies, but not such items as books, records, and tapes[153].

I

Just before the middle of this century, McLuhan had observed that things were "fragmenting;" structural properties appeared to be taking a second place to what was being said about them[154]. Further, as the consumer market expanded during the post-WW II period, more and more characteristics of consumer goods were singled out for attention and development. No longer were things integral entities, finished, but now they appeared more and more as aggregates even as knowledge of their working was disappearing. In part, it is clear that McLuhan's obsession with "effects" -- read "entelechies" in the later literature -- had something to do with the obvious ambiguity of the cornucopia of new stuff all around. It was as if he, and his generation, were witnessing an "evaporation" of objects into their entelechies (effects) -- an observation that Baudrillard was to make much of in the 80s and early 90s[155]. Things, the ground against which we make and experience a world, were changing in some fundamental way.

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[153]Andrea Branzi. *Learning from Milan: Design and the Second Modernity.* Translated by Hew Evans. (Cambridge, Mss: University of Chicago Press, 1988), p. 14.

[154]Marshall McLuhan. *The Mechanical Bride: Folklore of Industrial Man.* 1967: Beacon -- Boston ed. (New York: Vangaurd, 1951), p. 132.

[155]The first resonances of McLuhan's influence can be noted in Jean Baudrillard's. *For a Political Economy of the Sign.* Translated by Charles Levin. (St. Louis, Mo.: Telos, 1981), probably most directly in "Requiem for the Media," but is better known as the implied voice in the translated works published through the 80s. For a valuable, if not unproblematic, analysis of McLuhan's influence on Baudrillard see: Douglas Kellner. *Jean Baudrillard: From Marxism to Postmodernism and Beyond.* (Stanford, California: Stanford University Press, 1989), pp. 66-92.

McLuhan's generation had lived through the Depression with its dislocations and then the privations and command economies of war. The 50s and 60s, the period in American history called by Hine "Populuxe," was a period of a transfiguration of material culture. Demonstrable in the elaboration of the consumer society, the promise of increasingly comfortable living seemed to be "just ahead." The promise, as it was articulated in the advertising of the 20s was one that touched deep into the human psyche, for in many ways it echoed what was promised in myth and legend as reward for life well-lived or favour of the gods. The promise was that much of the nuisance, care, fretting, attention and effort that made up life -- including relationships and answers to existential questions -- could be obviated, ameliorated or resolved through access to more and more consumer goods. The promise was of life in a mechanical paradise. This was the message that made up the commercial environment which in turn shaped mass media communication through the years that McLuhan grew up.

McLuhan had been spent his childhood and youth between the two World Wars, and most of his mature intellectual life was focused on observing the emergence of the electronic and then cybernetic technologies and their effects. As McLuhan went into public school the world went to war. He finished his formal schooling against the back-drop of the events and circumstances leading to, and of, the Second War. McLuhan would make the connection between war and education in much of his later work. Nor did it ever escape McLuhan that the internal combustion gasoline engine and jet propulsion, the radio, processed food, mass production of clothing, synthetics and the computer were all children of Ares. The Internet's providence would have come as no surprise to McLuhan.

In later life, looking back over the carnage of the Great War and the implications of the atomic weapons of a generation later, it is no surprise that McLuhan would conclude that humanity cannot be trusted with new technologies. The Great War had been a grim demonstration of how new technologies "got out of hand," before we understood their implications and entelechies[156]. This war had been fought using the tactical and strategic doctrine of a way of war that the *weapons* had made completely obsolete. The greatest tragedy was that the consequences of the new weapons had been amply demonstrated two generations earlier in America, and were continually being demonstrated as the Europeans brought the world into a global empire. The consequences of the "rear view mirror" war were staggering in human life and misery.

In the years between the wars, McLuhan grew up in an environment increasingly shaped by mass advertising. His own awareness of its significance to the re-processing of culture and values is demonstrated by his journals of the 30s. During these years, the heady days of the 20s and the grim-jawed 30s, American marketing techniques began to set the standard for commercial mass market communication. Transformation of war-primed

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[156]The development of the Western Front, for example, could be explained as the natural reaction of rational human beings confronted with the rate and accuracy of fire of the machine gun. See Robert L. O'Connell. *Of Arms and Men: A History of War, Weapons, and Aggression*. (New York: Oxford University Press, 1989), p. 241-269; the extent of the time-lag between the discovery of the entelechy of the accuracy of the weapons of the industrial age in the earlier discussion of the weapon's context of the American civil war, pp. 189-211. The social history of the machine gun offers additional insight into the causes for and impact of this weapon. See: John Ellis. *The Social History of the Machine Gun*. (Baltimore: Johns Hopkins University Press, 1975), pp. 111-145. An illustration of the human experience of this time lag between medium and our "comprehension" of it is provided in Modris Eksteins. *Rites of Spring: The Great War and the Birth of the Modern Age*. (London: Bantam Press, 1989.), p. 145, though the entire chapter "Rites of War," pp. 135-169, develops this more fully in the broad array of weaponry used in battle. It should noted, however, that cannon took more lives than gas and machine guns and realized the realization of industrialized weapons into industrialized slaughter. The intensity of the cannon barrages is illustrated by the fact that on quiet nights they could be heard all the way to London.

economies into profitable or even sustainable peace-time ventures required an expansion in the ability of that market to consume the goods. The Depression, fears of market saturation and shrinkage of the consumer's interest, only intensified efforts to put "desirable" or "meaningful" to growing arrays of goods. The goods themselves began to change in form ever more quickly. As Roland Marchand notes, when the Ford corporation joined the club of auto-makers competing for sales with annual changes in colour and often unnecessary detail, the fashion process was emerging as the dominant factor in the market.

The distance between production and consumption widened with the increasing investment in mechanized means and forms of production. Elaboration of increasingly sophisticated technologies for product structure and composition increased the "opacity" of things. Even as Benjamin was to observe on the eve of the Second War, the things of mass production were empty signs -- while they proposed revolutionary possibilities, they also lacked "aura[157]." The aura that Benjamin was referring to was associated with an individual artist, as it was revealed and in-wrought by her or him. Benjamin was further equating the "aura," which invites aesthetic contemplation or "revelation," to "presence." His use of "presence" remains unexplained, nor is it clear from the text what Benjamin might have meant by the term. We also note that Benjamin was writing about the work of art, not the minutiae of daily life nor the macro-technical aggregates that background the emergence of our material culture.

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[157]Benjamin, Walter. "The Work of Art in the Age of Mass Reproduction." In *Illuminations*, edited by Hannah Arendt, 217-252. (New York: Schocken, 1969), pp. 227-229.

The closest we can come to this sense of "presence" or "aura" as it might pertain to the topography of everyday life is to consider the relationship we have with ceremonial and kinship coded artefacts and each other through them. Again we can turn to McCracken here, as well as the work of Alfred Borgmann. In the case of the latter we can explore the distinction that Borgmann insists separates certain kinds of artefacts from others. One kind he terms "focal," though we can elaborate on this designation and call it "cultivational." We might also elaborate the other category -- "the device" -- as the "convenient." Beginning with McCracken however, we will attend to the social history of the relationship between the "mnemonic object" and the substance of the fashion process, the novelty. We can roughly equate our ceremonial and kinship artefact with the mnemonic, cultivational and/or focal artefact. The other rough parallel would be between the device, the novelty and the things of convenience.

II

McCracken describes two modes of consumption: one "curatorial," the other "modern." Curatorial consumption involves an intimate long-term relationship with things. At one level of the social hierarchy this may be the cultivation of knowledge of a family history by careful transmission of legacies' providence and stories about roles the artefacts played in the lives of family members past. The habitus is therefore a kind of family temple with the *Lares* safe in things, and keeping safe the kin[158]. The dominant appresentational

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[158]Lares, in Roman mythology, were spirits of the benevolent ancestors. The Lares protected the home from all evil. As ghosts of the dead they were assimilated to lemures, but distinguished from larvae which were the souls of the wicked which roamed the world as nighttime specters to torment and terrorize the living.

schema points to family, or cosmology. McCracken, in a very elegant demonstration of *formal properties* of things working as *media*, shows that it was *patina* that validated claims made by members of the aristocracy to their pedigree[159]. If a home had been in the family for many generations, and everyone in the club had one like it, "Johnny-come-latelies" could always be kept out of the club "by gentlemen's agreement" not to sell to interlopers.

Old, "antique," substantial and durable possessions validated established claims to power. New aggressive and increasingly successful classes and groups in society made use of the medium of material culture to declare their ascendancy and arrival at the decision-making table. Status, among other things, gives one the ability to control meaning and allocation of attention in one's society. The sartorial prohibitions of the Late Middle Age and Early Renaissance Europe, were the last gasps by the previously dominant class to trying to maintain their control of the monopoly of one form of public communication of status. Against tradition and patina, the newly ascendant classes had novelty and change. In effect, the class struggle, was articulated and fought out in daily life by access to certain goods and experiences as much as it was in terms of ownership and control[160].

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[159]Patina is the fine finish of scratches and marks acquired through age and usage on antiques, notably silver. It is of interest that collectors and dealers maintain that this slight "yellowing" of the silver is virtually impossible to produce artificially. While the "distressed look" emerged in the 70s as a kind of ersatz antique process, quality remains something that most people can quickly recognize, as it tends to "be" in the complete aggregate (materials, craftspersonship, care and investment according to all "causal vectors). Basically, good stuff that is supposed to last does; goods of high quality and durability can develop patina, as the poor quality things tend to get used up. See: Grant McCracken. *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities.* (Bloomington: Indiana University Press, 1988), p. 13.
[160]Stuart Ewen and Elizabeth Ewen. *Channels of Desire: Mass Images and the Shaping of American Consciousness.* (New York: McGraw-Hill, 1982), pp. 122-8.

Curatorial consumption is clearly connected to tradition, as is the notion of *patina*: Values associated are durability, continuity, and a cosmology conducive to such values. At its most fundamental, an object of curatorial consumption, would be a mnemonic object -- an artefact that would exhibit the epideictic rhetoric discussed above. Presumably, this artefact would also "presence[161]," if not "aureate." When presented, the artefact would appresent the past (providence), it's validation of the present and anticipation of a continuously proud or felicitous future. Even the term "curatorial" evokes stewardship of legacy and some kind of community mandate to interpret it, to present it.

The emergent commercial market, starting with the Age of Discovery, began to provide a steadily increasing stream of goods and experiences to Europeans that were completely novel. Learning to appropriate and manipulate these novelties in the interest of advancing one's fortunes was a challenge, a task, sometimes a pleasure, and an indicator of one's social and cultural mobility. Elizabeth I of England actually devised a way to milk the power of her nobility by keeping them focused on participation in an accelerated, sumptuous and ostentatious code of comportment and self-presentation[162]. The power to attain the old only meant breaking down the barriers of various "gentlemen's agreements," and these proved soon enough to be for sale. But novelty, and forward progress through the mastery of chance *and novelty*, were available to those who could part with tradition and seek a transfigured world through restless innovation, exploration, and change.

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[161]Heidegger, Martin. "Building, Dwelling, Thinking." In *Poetry, Language, Thought*, 143 - 162. New York: Harper Colophon, 1971.
[162]McCracken, Grant. *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities.* (Bloomington: Indiana University Press, 1988), pp. 11-12.

With industrialization and the expansion of markets for machine-made artefacts, novelty -- especially in its dictionary definitions which usually evokes something small, perhaps "precious," but never of great true value -- was mechanized to produce the gadget. Where the novelty is something "new" for you, the gadget tends to be something new that does something old in a new way for you. The gadget embodies the essence of what Borgmann has to say about the device. By crude demonstration, the device, is one of progenitors of the metaphor of the mechanical servant. For, when we consider what constitutes an effective of valuable device, we find that it extends our desires but effaces itself. This is the kind of performance an Athenian citizen would have expected of a good slave or servant to perform.

Borgmann argues that the *device* has become our dominant paradigm for our relationship to technology and, by extension, material culture[163]. In order to distinguish the device from other artefacts, Borgmann counterpoises it to what he calls "focal things." While his focal things need not be mnemonic hand-made objects, they do exhibit similarities to them. Borgmann chooses the term focal, because of its resonance to its Latin root word for domestic fire or hearth. It was under the hearth that the spirits of the ancestral guardian spirits or *Lares* were believed to reside. The hearth was the focus of daily activity, family life and the habitus. Given the way Borgmann describes focal artefacts,

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[163]I make extensive use of the distinction between the focal thing and the device contributed by Borgmann. Borgmann's reading of the focal object is itself indebted to Heidegger's philosophy of the thing and work of art. While Heidegger's analysis rides on an arcane rhetoric (so much so as to provoke McLuhan to comment that Heidegger "surfed" along on the conditions created by electricity -- Marshall McLuhan. *Gutenberg Galaxy: The Making of Typographic Man.* (Toronto: University of Toronto Press, 1962), p. 249. Borgmann's adaptation is accessible and provides a stable category, if by comparison with its opposite. See: Albert Borgmann. *Technology and the Character of Contemporary Life: A Philosophical Study.* (Chicago: University of Chicago Press, 1984), pp. 40-48. Further to Heidegger's "surfing" the electric wave, if in a different context, see Avital Ronnell. *The Telephone Book: Technology, Schizophrenia and Electric Speech.* (Lincoln, Nebraska: University of Nebraska Press, 1989), pp. 26-49.

we can assert that while they need not be mnemonic, they do have to be cultivational in that time spent with and through them is part of their significance[164]. Thus against the "novelty" of the device, we have inheritances, traditions and personal as well as community and civic ceremonial activity sustained by focal goods. The things we do with, for, and through them, Borgmann designates as focal activities.

Focal artefacts are embedded in a world and human commerce between thing and world -- they are always already appresentational and "gathering" to use Heidegger's language[165]. Focal things also require engagement and are not easily or readily controllable or procurable. Examples here might be the family heirlooms, objects of ceremonial value. But, as Borgmann suggests, this designation can also apply to the axe one needs on a cold morning with which to chop wood for cooking breakfast. So also the kitchen utensils which we use to prepare a meal to which we have invited friends or associates. The focal thing is further unique, says Borgmann, not substitutable.

Focal artefacts are unique because they possess deep multiple levels of meaning. Because of our full interaction of embodied self and world through them, they acquire layers of meaning -- they begin to have their own stories. Again it is the heirloom that comes to mind; so do the original works of art as well as objects that have traveled with us as part of our kit of daily life on adventures and/or served us well in our enterprises and projects. Works of craft or art as well as ceremonial objects such as the kit for a Japanese tea ceremony

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[164]See also Albert Borgmann. *Technology and the Character of Contemporary Life: A Philosophical Study.* (Chicago: University of Chicago Press, 1984), pp. 191-2.
[165]Martin Heidegger. "The Thing." In *Poetry, Language, Thought.* Translated by Albert Hofstadter. 165 - 182. (New York: Harper Colophon, 1971), p. 177.

illustrate Borgmann's suggestion that the use of focal artefacts, their maintenance and/or improvement, tend to be part of a tradition and/or daily discipline. By working with the focal artefact, we therefore develop skills and are enriched.

The focal artefact "centers" us in our world. We recall Arendt's discussion of the stability and objectivity provided human affairs by our things. The focal thing, however, does more than speak to stability and continuity, it also centres the person and group in a cosmological order. The artefact either structures meaning of whole way of life, as would be with the kit associated with an existential praxis[166], or is close to it. The focal good is finally deep and significant -- it cannot be easily exhausted of its textures and interweavings of meaning. A good book comes to mind as does a talisman. By means of the focal artefact we cultivate meanings in the world. The focal artefact is the one that gathers and the one through which we create a meaningful world.

Compare the topographies of daily life. In one case we have the artefactual world of the what Caillois has called the society of mask and vertigo: a landscape of traditions and objects that act as keys to a transmutated reality of continuity and enduring, even cosmological, value[167]. The artefact is an old

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[166] "Existential praxis," a term coined by Ihde, refers to that region of activity that is central to the reproduction of life. Examples are hunting and gathering as well as agriculture. For us, says Ihde, the existential praxis is tied up with technology. Ihde offers interpretations of the figures produced by three forms of existential praxis: hunting and gathering, agriculture and industrial technology. See: Don Ihde. *Existential Technics*. (Albany: SUNY Press, 1983), pp. 15-23.

[167] I am borrowing a metaphor from Caillois' work on the relationship between the organization of the play imperative to the structure of the societies in which it is nestled. The play impulse, or imperative (if we accept the findings of the study of animal behaviours), is related directly to the toy, but also to many mnemonic, focal and ceremonial things. Caillois' thesis in my adaptation roughly establishes a propensity of pre-industrial societies to favour games of vertigo (that is ecstasy of various kinds) and mask. Masks (and social ceremonial around masks) are another special instance for inquiry in the use of materiality in social communication. To these characteristics, Caillois suggests that contemporary market-industrial societies tend to favour games of chance and merit -- here chance of birth and competition in the market, draw on more appropriate model derived from excellence in competition and the "roll of the die," (chance of birth). Roger Caillois. *Man, Play and Games*. (New York: Schocken, 1961), *passim*. See also James F. Hans.

friend, a "retainer," a talisman: named swords and walking sticks, tartans, stone houses in the country, the smell of old well-cared-for leather, lace and linen, old silver and so on. In some sense there is not much distance between the tribal elder explaining the stories of the clan's fame while revealing a mask to the young and the aunt telling the family's stories as she reveals the family silver ware. We also have a landscape of old faithful tools, the cultures of hospitality and the hearth. The landscape of the device however was, to keep with Caillois' distinctions, is one of chance and merit where forward technological progress out-modes the New with the Newer Still! Rather than cosmology and durability, the topography of the device is serendipity, discovery, and competition: Disposability, interchangeablility, seamless and frictionless performativity, punctuated by the appearance of the "better still!".

To capture something of the experience of industrially produced products which proffer us convenience and interchaneability, Borgmann offers the device, or convenient and often novel artefact[168]. The devices effaces itself in the interest of the things it is supposed to do. One does not seek to contemplate one's pots and vacuum cleaner and iron, but rather have them ease chores so that we can get on with that which we enjoy doing. The device stays in the background -- as do the conditions and relations of production whence the devices emerge. The main contribution the device makes is that it is disemburdening. The device makes life easier. And, due to industrial mass production, the device is instantly procurable and available. Its ubiquity and

The Play of the World. (Amherst: University of Massachusetts Press, 1981), and the classic in the field Johan Huizinga. Homo Ludens: A Study of the Play Element in Culture. Translator unknown. (Boston: Beacon Press, 1950).
[168]Albert Borgmann. Technology and the Character of Contemporary Life: A Philosophical Study. (Chicago: University of Chicago Press, 1984), p. 208.

reliability are what make it desirable -- why dig a ditch by hand when the neighbor can do it faster and with less effort by a back hoe.

If a meal shared with friends or family is a focal activity using focal things, then the device is the **functional equivalent**[169]. You can get all the vitamins and minerals and much of our daily nutritional needs through canned meal supplements, yet no one equates the experience of eating a meal with drink a couple hundred grams of a chocolatey and slightly chalky tasting fluid. We have cheese, and we have "cheese food," presumably the functional equivalent that looks and tastes fine on a cheeseburger but is apparently not cheese. Indeed many of the devices we now find in the habitus are functional equivalents of ministering hands of a very limited but compliant servant. Because the device does "it" for us, it also encourages the atrophy of skills -- writing "atrophies" memory, the calculator "atrophies" mathematical skills, and so on.

In contradistinction to the web of relationships appresented by the focal artefact, Borgmann suggests that the device encourages consumption which "may be disembodied." The disembodiment here refers to the unraveling of the "integrated" person into a bundle of discrete want and needs that are localized in bodily fragments -- the armpits, the face, the hair, the ears and so on. Not all embodied faculties need be engaged: listening to our favourite opera or popular music on a CD disemburdens us of all the activity we would have to undertake in order to see the performers and experience their music in person. Furthermore, consumption need not be part of either tradition or daily discipline.

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[169]For a parallel, see: Marshall McLuhan. *The Mechanical Bride: Folklore of Industrial Man.* 1967: Beacon -- Boston ed. (New York: Vangaurd, 1951), p. 115 (b).

Tea comes in a baggie, and there is no muss or fuss, never mind ceremony, necessary; cappuccino comes in a tin can -- just add water and sound effects.

The device, as argued by others as well as Borgmann, is opaque. With growing sophistication and miniaturization of materials, industrialization of production processes and performativities, only the surface remains available or visible. One of the best examples, as suggested before, was the PC which few of us understand, but many of us own. For many of us our cars are an exoskeleton and a soft and sheltering mobile interior, what is under the hood may as well be the transubstantiation of bread and wine for all we really know. If we add the disposability to the convenience, then the device disengages us from itself and what it does for us. The thing loses its meaning, which, Borgmann suggests, impoverishes us. Finally, in apposition to the focal good which is deep and finally significant, the device (ubiquitous and readily available) exhibits the structure of being always a substitute, "*ersatz.*"

With the spread of industrialization and its modes of production the mnemonic, focal, cultivational object was transfigured by the convenient, novel device. The opacity of the device, its apparent lack of "authorship" or other features that would anchor it into a meaningful appresentational scheme (i.e. disengagement and loss of meaning) and the nagging sense that it was not really valuable (i.e. the device as a substitute, *ersatz*) were problems for the producers, distributors and retailers of the New. Novelty, while attractive, had limited appeal. The New ages very quickly, especially if its only attribute is novelty.

III

Artefacts are both associative and projective and we have identified their constitution as tri-partite. The object emerging from mass production, since we know little of its providence and cannot inquire from the makers about it and its quality, appears as a new isolated thing. For this artefact to be meaningful, it must be appresentational, which means that it must first be presentative. With the intensification of pace and load, and continuing evolution of programs and performativities, the presentative aspect of the artefact became increasingly problematic. We are reminded of Benjamin's "presence" or "aura."

In his valuable social history of the design profession, Forty provides Wedgewood's pottery as a case study of the efforts of early industrialists to develop effective presentational strategies for their products. Wedgewood's challenge embodied one aspect of the problem of the industrial artefact's ability to respond to the presentative imperative. The market to which Wedgewood was catering valued the hand-made artefact and equated it with class privilege and prestige. Both of these are possible, as pointed out by Scitovsky, if there is a scarcity of goods[170]. Industrialism did away with that, at least potentially. Therefore Wedgewood, who ran a very industrial craft shop with ceramic decorative artisans working not unlike highly specialized and anonymous Byzantine iconographers, sought to reassure the buying public that his work was as good as that made by hand. The actual pots and dishes were mold-poured, i.e. industrially produced. The metaphors that guided the form, but

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[170]Tibor Scitovsky. *The Joyless Economy: An Inquiry Into Human Satisfaction and Consumer Dissatisfaction.* (Oxford: Oxford University Press, 1976), p. 31-58.

mainly the ornamentation and presentation of his pottery, were drawn from Classical Greek and Roman antiquity[171].

As Benjamin had noted, it was exactly this "presence" of the handmade providential object that was evaporating with the inundation of daily life by machine-made and mechanical devices. Early in the previous century, industrialists began to develop strategies to give shape and form to the new technological gadgets, devices and conveniences that could be produced. Need for a coherent approach to the new world of goods was soon emphasized with the emergence of the first electronic devices. We can debate the types of blade relative to tasks before the axe-wielder -- broad blade for tree-felling, smaller lighter but wider blade for finishing boards etc. The fact of cutting is there in both projects. But a telephone? An electric dishwasher or vacuum cleaner? A radio? An electronic can opener? Even before the electronic object made its problematic appearance, Forty notes that at least three presentative strategies had developed.

According to Forty, the mechanical paradise was constituted of artefacts that took one of three general formal orientations: *archaic*, *suppressive* or *utopian*. The archaic we have already seen in the Wedgewood's choice of Graeco-Roman decorative idioms. This orientation could draw from other appresentational schema such as Egyptian or, later, Mayan. The utopian orientation did not refer to a past age or a specific place, but rather to a world yet to come as *evoke* and *embody* a better world in the future. Throughout the 20th Century, the utopian presentational strategy would develop both optimistic

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[171]Adrian Forty. *Objects of Desire: Design and Society from Wedgewood to IBM.* (New York: Pantheon, 1986), p. 12.

and even dystopian variants. Art Nouveau of the turn of the century was already a turn toward a new world, even if the metaphors were vegetative. Rectilinear Nouveau anticipated the design of the Bauhaus and Heroic Modernism. By the 30s Art Deco, modeled on the vibrating logic of the machine and electricity, came to set a dominant paradigm[172]. The forms associated with better worlds in the future were to change -- streamline idioms were completely futuristic in the 1930s, today they are indexes of images of the future passed come back to call.

The last of the three orientations was suppressive. This approach used other artefacts to disguise an purely utilitarian artefact or device. Hiding a home "entertainment system" in a walnut sideboard serves as an example. Not a new idea, as in the 1920s radios were built into easy chairs. Sheathing and otherwise dressing up products to conceal working parts was another aspect of the suppressive approach. Here it could, often did and still does, overlap with the archaic and utopian approach. As Forty documents, increasing attention to this "packaging" of goods, or "design" demonstrated to manufacturers that investment in the presentative rhetoric of things was a well-made investment[173].

As the history of the industrial artefact bears out, Forty's typology is accurate, but partial. The typology leaves out two presentational strategies and vocabularies that would also begin to evolve at about the same time as the three main orientations: The *exotic* and *administrational/functional*. Let us begin by considering the exotic first. The exotic could be related to all three

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[172]See: Patricia Bayer. *Art Deco Source Book: A Visual Reference to a Decorative Style 1920-40.* (London: Quatro, 1988), and for the pragmatic side of this design idiom, Donald Bush. *The Streamlined Decade.* (New York: Braziller, 1975).

[173]The penetration of many domestic devices benefited from design strategies that separated such objects from those associated with paid domestic labour. See: Adrian Forty. *Objects of Desire: Design and Society from Wedgewood to IBM.* (New York: Pantheon, 1986), pp. 94-119, specifically pp. 94-99.

of the above. We know, for example, that Japanese objects and design became very popular in Europe at the end of the 19th century[174]. Orientalism, and an interest in the "orient" was also popular in Western Europe: Eastern Europe, and then the farther and farther East -- Persian carpets, Indian cottons and patterns, Chinese silk, texts, musical concepts, and sacred traditions and practices all played a part in the evolution of Western fashion and general artefactual vocabularies.

The other presentational strategy emerges from official, administrational and military atrefactual vocabularies. Here too new idioms were evolving. Dual processes of standardization and increasing process-control were producing idioms all their own. The military and emergent state bureaucracies had been setting standards for many objects used in their spheres of activity -- from office furnishings, hospitals to uniforms and weapons technology. Were space permitting, this would be good point to explore the inter-relationships between the constituents of the tri-partite artefact in the service of state and ideology. We might explore the aesthetics of dis-interest and anonymity as well as those of aggression, camouflage and terror[175].

The world McLuhan was born into was already full of mechanical wonders and devices. An older world of gas light, cities full of horse-drawn means of transportation, was quickly disappearing. Electricity had been harnessed and was generalizing throughout the world[176]. The structural and

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[174]The Japanese influence on Western design is very significant. This is especially the case since Modernism was in many ways influenced by the Japanese approach to objects. See: Penny Sparke. *Japanese Design*. (New York: Dutton, 1987).

[175]John Heskett. *Industrial Design, World of Art*. (New York: Oxford University Press, 1980), p. 184-193.

[176]See the American experience of the coming of electrification of the home in Witold Rybczynski. *Home: A Short History of an Idea*. (New York: Penguin, 1986), pp. 152-3; the British experience in Adrian Forty. *Objects of Desire: Design and Society from Wedgewood to IBM*. (New York: Pantheon, 1986), pp. 182-192.

performative aspects of the artefact were evolving, driven to some extent by the logic proposed by continuous technological and scientific innovation[177]. Yet here too, the problematic of educating the consumer loomed large. New innovations -- some healthful, some cosmetic, and some just plain dangerous -- required a public that had some idea about how, when, and with which kind of expectations to appropriate and use the new world of goods. Structural and performative innovation, "progress," and demonstration were insufficient The presentative aspect of artefacts needed attention and, as the 20s unfolded, this aspect was addressed by the mass market.

The 1920s represent the ascendancy of mass marketing and American advertising. Wedgewood's early marketing strategies are not unlike the early history of automobile mass production. Cars were almost hand-made at first and they served a select and wealthy clientele. What the assembly line had demonstrated was that many, many cars could be made and the more the cheaper[178]. The same could be said for processed foods, furniture, and nearly all the material needs of daily life[179]. This is what is meant by the economies of scale. The implications of industrial object had not been lost on the Europeans, but caught up in local and regional markets, and in a context where class lines

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[177]See Petroski for a very beneficial discussion of the role of error and failure in advancing technological development -- especially the performative and structural aspects. Henry Petroski. *To Engineer is Human: The Role of Failure in Successful Design.* (New York: St. Martin's Press, 1982), *passim.*

[178]See James J. Flink. *Automobile Age.* (Cambridge: MIT Press, 1992), pp. 27-39 and John Heskett. *Industrial Design, World of Art.* (New York: Oxford University Press, 1980), p. 72.

[179]Many of the sources I cite in the design literature are very much indebted to the pioneering work of Siegfried Giedion. McLuhan cited Giedion often, but mostly with reference to Giedion's work on architecture and the experience of space. In the 1969 journal (9th and 15th June) McLuhan writes that it is from Giedion that he has learned that the "environment is a "teaching machine" and that Giedion's work on time, space and architecture provides the researcher with the basic In the area of material culture as media, however, it is the contributions made to an "anonymous history," that are central. Sigfried Gideon. *Mechanization Takes Command: A Contribution to Anonymous History.* 1969 ed. (New York: Norton, 1948). Perhaps more useful to the challenge of addressing the micro-environment as medium/media would also be the approach and works of Yi Fu Tuan. In particular see: Yi-Fu Tuan. *Landscapes of Fear.* (Minneapolis: University of Minnesota, 1979), *Segmented Worlds and Self: Group Life and Individual Consciousness.* (Minneapolis: University of Minnesota Press, 1982), and *Passing Strange and Wonderful: Aesthetics, Nature and Culture.* (Washington, D.C.: Shearwater Books, 1993).

were much more clearly delineated, their vision of the artefact, in all three of its rhetorical aspects focused them on either a class market and/or much deeper examination of the implications of mass productions and the evolution of a philosophical tradition on the built world.

Pulos, writing about the early years of design in America, suggest that American industry and design had arrived at a solution to the arrival of new technologies in the 19th Century. Then, bending to the exigencies of a mass market, industry and design abandoned this sound artefact-philosophy for the play and whims of fashion. The solution to the mass produced artefact, Pulos argues, is the *type form*[180]. Examples of this would range from the Westclock Pocket Watch, to the McCormick Reaper and Henry Ford's Model T. As the press had commented on American firearms and farm implements displayed at the 1849 Exhibition: American goods were ugly, but *very good* tools. Ugly meant that they were unadorned, pared down to necessity, and were conceived and manufactured with an emphasis on performativity and structure at the apparent expense of a socio-presentative aspect.

The idea that American products were ugly came from within a culture shaped by an emphasis on decoration, ornamentation and pride of crafts and skills as well as deeply articulated tradition of applied science, rationalization, order and hierarchy of people, functions and roles. The American goods were too "level," "uniform," "silent" with respect to hierarchy, identity and statement of belonging to something greater than the individual who used them to extend him/herself. The design and engineering imagination of the European

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[180]Arthur J. Pulos. *American Design Ethic: A History of Industrial Design.* (Cambridge, Mass: MIT Press, 1983), pp. 242-3.

intelligensia, infused with the demonstrably "communist" entelechy of machines and machine production, saw in the American experience of the techni-etho-aesthetic object, a model for a world that could be built to replace the "weight" of the old.

The mechanical paradise had been imagined first in Europe. From the European point of view, the "new world" was just that because it was one untouched by the aggressive technological power of their world. That world, however, had also felt the negative effects as it was shaped by the entelechies of the machine. The harnessing of the democratic machine of mass production to accumulation of private wealth, the exploitation of humanity in pursuit of "base metal," and the pandering to and funding of old alliances based on politics of bedroom and battlefield of the few, had increasingly become a source of revulsion and anger. Coupled with an inheritance of science and the Age of Enlightenment, this produced an ideology that approached the machine with a detached, aloof attitude -- an attitude of refinement, critical awareness, in short, the attitude of the specialist, the virtuoso, the intellectual aristocratic-egalitarian.

Machine production, and its product, were to be informed by morality and ethics -- these were to be embodied in the order and precision of both process and product. The making of the world was a branch of morality, not the pursuit of "filthy lucre." Because this approach was weaned with a material world of sedimentation's -- objects, images, surfaces, environments, programs and performativities -- no "solution" to any problem could exist in isolation. Every new aggregate had to displace another one, and the obduracy of the context was such that the Futurists opined for war as a great work of art to destroy it all to make way for a re-newed and re-invigorated world. The object had to reveal

a *Zeitgeist*, whether that was to cultivate the old and cherished or to deny it altogether.

The new techni-etho-aesthetic object, and the world that would grow up from its "seed," was to be comfortable, inexpensive, easy to fabricate and maintain; not far from a world that might evolve out of Pulos' effective and reliable type object. The thing would present by showing what was or did. Surfaces, rather than pandering to the passing whims of bourgeois fashion, would exhibit textures. Decoration, condemned as savage and/or infantile, had been dismissed in the first decade of the 20th Century by the influential Austrian architect Adolf Loos.

> . . . Loos believed that art was libidinous before it was anything else. "*All* art is erotic," he roundly declared, and identifying body-painting as the root of ornament -- a suitable practice for primitives but not for modern Europeans. "The modern man who tattoos himself is either a criminal or a degenerate . . . " The abolition of ornament, Loos concluded, was as necessary a social discipline as toilet training. "A country's culture can be assessed by the extent to which its toilet walls are smeared. In the child this is a natural phenomenon . . . But what is natural to the Papuan [sic] and the child is a symptom of degeneracy in the modern adult. I have made the following discovery and pass it along to the world: *The evolution of culture is synonymous with the removal of ornament from utilitarian objects*[181]."

The democratic entelechy of machine was international and global. Local idioms and appresentational schemes were judged to be exactly the kind of excrescence that hampered the full development of an *authentic* mechanical paradise. Local idioms could not obtain when universally applicable empowering material culture was available. In the late Middle Ages the Pope had banned the use of the cross-bow, but its use had expanded until it was replaced by the gun. The Synod of the Russian Orthodox Church banned the

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[181]Robert Hughes. *The Shock of the New: The Hundred Year History of Modern Art, Its Dazzling Achievement, Its Fall.* 1991 ed. (New York: McGraw Hill, 1976), p. 168.

use of sound recording technologies for the reproduction of liturgical music[182].
The phonograph along with Tin Pan Alley, Jazz, the fox-trot and Tango
continued to spread. Ultimately, the new material world, freed from the weight
of the past by the device, could entertain a complete break with the past -- a
liberation from the "nightmare" of history from which Joyce dreamt of
awakening.

Even as this ideology, or "machine aesthetic," was emerging, the fashion
process and the consumer market were also accelerating in the "Old World."
The constrictions of national and regional markets, traditions of state and
privilege, the "Lares" and their manipulation and management by an
entrenched group, kept the acceleration of the spread of material culture
attenuated. The growing vocabularies of Art Nouveau, exotic and then Jazz
Moderne/Art Deco had produced an opulent world of luxury for the
privileged[183]. With growing sophistication of plastics and other synthetics,
cheap facsimiles could be more generally distributed. All five presentational
schemes were employed in producing this opulent world that could serve as a
model for the goods and services for the masses to aspire to.

The privileged classes of North American society continued to look to
Europe for the material indicators of class. But building a new world was a job
for all involved, and the tool and weapon were more wide-spread and deeper
patterns for the evolution of the mechanical paradise. In the "New World"
climate and the "wilderness" were an enormous challenge to individuals and

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[182]Evan Eisenberg. *The Recording Angel: The Experience of Music from Aristotle to Zappa.* (New York: Penguin, 1987), p. 29: See also his discussion of the "reification" of music in "Music Becomes a Thing," pp. 11-34.
[183]Witold Rybczynski provides illustrations of the developments in this opulent vein and the origins of French interiors design. See: *Home: A Short History of an Idea.* (New York: Penguin, 1986). pp. 180-191.

communities. A dynamic ethos of the "democratic" (free) market and a love of ingenuity, the reliable and appropriate tool and weapon, a bigger-is-better attitude, provided the deeper ground for the stuff of the background of our daily lives.

The artefact had to be reliable extension of people who were often physically and socially isolated and living in what could be a "savage" and hostile land[184]. Any artefact that aided in this, and could add convenience and ease to a life of hard physical work, was a welcome "needful thing." The device was appropriated with enthusiasm which the romance of automobility only enhanced. As the economy was not bound by the traditions and conditions of the "Old World," and progress appeared to be a "*manifest* destiny," technology and its various products were celebrated and embraced. The buildings of post-fire Chicago, and the concrete granaries of the American lakehead were models, for Heroic Modernism to emulate: North American markets were looking elsewhere.

Through McLuhan's youth, the consumer market increasingly became the domain that shaped the activities of daily life. Ford had convincingly demonstrated that mass production was well served by economies of scale -- the more produced, the more cheaply it could be made available to the consumer. The torquing of the productive power of the USA from a wartime to an orientation to consumption had brought a vast new array of goods into the

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[184]Grant writes: "Even when we fear General Motors or ridicule our immersion in the means of mobility, we must not forget that the gasoline engine was a needfilled fate for those who had to live in such winters and across such distances." George Grant. *Technology and Empire*. (Toronto: Anansi, 1969), p. 24. The internal combustion engine "proved itself" in the "Great War."

market place[185]. By the mid 1930s, product design was conceived of as a branch of business and an effector of the commercial imperative[186]. The first task of the marketer and the designer was to create goods that would be desirable. By the time that the Second War had ended, reconstruction and the second consumer boom of the 20th century had gotten underway, the machine and its product were glamorized and most evocatively given form in the goods of the Populuxe period as described by Hine.

> The decade from 1954 to 1964 was one of history's greatest shopping sprees, as many Americans went on a baroque bender and adorned their mass-produced houses, furniture and machines with accouterments of the space age and the American frontier. "Live your dreams and meet your budget," one advertisement promised, and unprecedented numbers of Americans were able to do it. What they bought was rarely fine, but it was often fun. There were so many things to buy -- a power lawn mower, a modern dinette set, a washer with a window through which you could see the wash water turn disgustingly gray, a family room, a charcoal grill. Products were available in a lurid rainbow of colors and a steadily changing array of styles. Commonplace objects took extraordinary form, and the novel and exotic quickly turned commonplace[187].

As McLuhan reached his forties, the world was transforming into a super-market world of malls, urban strips, "convenience-everything."

The emergence of the mechanical paradise in the New World was as bewildering to its denizens as it had been to the people of the Age of Discovery and the Renaissance or the Industrial Revolution. Charged with the job of introducing the goods and instructing consumers on their use and meaning became the special province of the advertising profession which itself came to

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[185]See James Sloan Allen's discussion of the emergence of Modernist marketing, the consumer revolution and the role of the Container Corporation of America in *The Romance of Commerce and Culture: Capitalism, Modernism, and the Chicago-Aspen Crusade for Cultural Reform.* (Chicago: University of Chicago Press, 1983), pp. 3-34.

[186]For a discussion of the rise of product and packaging design in the context of the emergence of the American product design profession see: Jeffrey L. Meikle. *Twentieth Century Limited: Industrial Design in America, 1925 – 1939.* (Philadelphia: Temple University Press, 1979), pp. 68-83.

[187]Thomas Hine. *Populuxe.* (New York: Knopf, 1987), p. 3.

be the most visible part of marketing. Packaging and branding, product design and presentation, all became the implements in aid of moving goods into and through the market[188].

Even as the ground of the mechanical paradise had taken on its most garish and aggressive forms, under the increasingly fragmenting sway of fashion, things appeared to arrive into the daily-world with fan-fare only to be outshone very quickly by the appearance of newer and more sophisticated forms. Where "Fashion" had ruled, throughout McLuhan's mature years, more and more fashions were appearing in wider ranges of goods. Simultaneously, appresentational schemes were diversifying along functional and stylistic axes through more things. Goods could be "coded" according to demographic, culture and subculture, social status categories. Concomitantly, with sometimes slow and sometimes faster fashion changes, the cultural milieu was responding to the fragmentation of the "mass markets" into demographic, niche, segmented, and lifestyle markets.

Implicit and explicit media began to merge. Enabled by the discovery of efficient small-scale electric motor, the transistor and then the integrated circuit, the inert stuff of daily life was mutating into a new order of service, and, at least metaphorically, "intelligence." Within just a few generations, the evolution of the device had displaced the focal object as a dominant feature of the topography of daily life. By the time McLuhan died in 1980, what had been conceived of as the mechanical paradise was showing all signs of becoming the electro-bio-techno-cybernetic one that is now appearing in our history.

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[188]Roland Marchand. *Advertising the American Dream -- Making Way for Modernity 1920 - 1940.* (Berkeley: University of California Press, 1985), and particularly Stuart Ewen. *All Consuming Images: the Politics of Style in Contemporary Culture.* (New York: Basic Books, 1988), *passim.*

IV

Under the sway of a market diversified by competition to establish a meaningful distinction between goods and cultivate segmenting markets, material culture was stylistically diverging into a heteroglossic discursiveness -- many different forms "saying" and "doing" different things for an increasing number of "tribes." Doctrines of design proliferated according to combinations and recombinations of the constituents of the tri-partite object and presentative strategies. McLuhan's neo-tribal man was an cave-apartment-dweller, who identified and differentiated himself within his resonant and magical acoustic social world by means of gadget-fetishes. As appresentational schemae multiplied and diverged, a convergence was also taking on speed. Automobility, audiophony, the interactive telematic object were the first embodied signs of the convergence.

The machine was to have simplified and rationalized life. Instead, it rendered what appeared to be the exact opposite -- it "flipped" -- increasing orders of complexity. The Peacock Revolution[189] of the 60s and 70s, and the Postmodernisms of the 70s and 80s re-mined and recovered much that Loos had dismissed three generations prior, and submitted a critique of the cultural arrogance that Loos and his generation of Heroic Modernists had advocated. By 1982 Mendini had suggested a "nebulous informatic object[190]." Andrea Branzi wrote:

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[189]I owe this colourful designation for the youth "movements" of the 60s to Loren Baritz. *The Good Life: The Meaning of Success for the American Middle Class.* (New York: Harper & Row, 1989), pp. 280-282.
[190]Maurizio Morgantini. "Man Confronted by the Third Technological Revolution." In *Design Discourse: History/Theory/Criticism.* edited by Victor Margolin, 43 - 47. (Chicago: University of Chicago Press, 1989), p. 47.

The look generation, as an extreme case, passing from one disguise to another, offers a conception of the body as a surface, as a representation, as an image, as a language to interpret through the continuous multiplication-subtraction-superimpositions of signs and signals that, in some cases, leads to neo-tribalism, the notorious sub-cultures of the young. In a more general manner, fashion becomes a magic dimension that we follow to reinforce our own identity and by which we remain bewitched[191].

Planned or artificial obsolescence, disposability, the increasing tempo of fashion, and technical innovation, further altered material culture -- the focal being absorbed as an effect of the device. Whether material culture was "tweaked" stylistically to improve the upward curve of the sales chart, or "tweaked" to improve on technical, social or personal inadequacies revealed by application or emergence of new and improved components, the permutation accelerated. With the convergence of implicit and explicit media, and the extension of the central nervous system, virtualics (sizzle, not the steak) and telepresence became possibilities. And, as the material rhetoric of geopolitical deterrence multiplied the over-kill of Cold War nuclear and biological arsenals, telematics was demonstrably a reality. Fire-power flipped into tense and often anxious but tenacious peace between First World powers.

While studying media, *commercial* media and advertising it should be added, McLuhan described the transformation of material culture that was a key theme, if not the *substantive content* of the press, radio, advertising and TV objects, environments and activities that he was studying. He and his generation had seen the transubstantiation of base metal into the lively stuff that in its crude forms and semi-articulate performativities comes to meet us out of the future. While witnessing the demise of the focal good and practice, few had

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[191]Andrea Branzi. "We Are the Primitives." In *Design Discourse: History/Theory/Criticism.* edited by Victor Margolin, 37 - 42. (Chicago: University of Chicago Press, 1989), p. 41.

imagined its transmutation into an effect of the device. The interactive object, the one that allows us modulate our moods and project our consciousness is, after all, a device.

CHAPTER 7

Into The Age of Lively Stuff

The question arises whether these experiences induce a new awareness or a *catharsis* which brings relief from old experience[192].

I

Having looked at what might be constituents for an account of what is missing in McLuhan's discourse, we can now turn our attention to the emergent material culture that is implied by, and derives from, the evolution of our things. At the outset we had characterized our emergent material culture as proliferant, pervasive, permutative, programmed and performative. In addition to these attributes, we can note that in this new and "animated" form our material culture is both explosion and implosive. Further, we increasingly encounter our new materiality as something that we excorporate and incorporate. New vectors for experience are opened by the new techni-etho-affective object -- among these are those implied by automation and robotics, as well as by the dual figures of dematerialization and telepresence -- i.e. disembodiment. Before we can deal with where the stuff might be taking us, we should pause to explore what is with us now.

We can begin this discussion by examining the dynamics of explosion and implosion of our material culture. On the one hand material culture has expanded into the life world and saturated more and more domains of our interactions. We live, as it were, in an interactive carapace of our own making. Some of us are connected at ever greater distances with each other and we

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[192]Marshall McLuhan, Eric McLuhan, and Kathryn Hutchon. *City as Classroom: Understanding Language and Media.* (Agincourt, Ont: Book Society of Canada, 1977), p. 171

become nodes in a material web that is a fine, delicate and gossamer matrix for the tracery of electronic signals which unite us in various forms of communication. On the other hand under the signs of consumption, health care, micro-bio-engineering, and information technologies, we have an implosion of our material culture where more and more functions and performativities are concentrated into smaller packages - some of which we make parts of ourselves.

If our emergent technology has the feature of being explosive, it also has the quality of being implosive -- miniaturized, condensed, thickened, reinforced, performative. We have learned to build graceful structures of great height, supported on a thin, flexible framework of steel girders, clad in crystalline membranes of glass. The "radiant city" imagined by Le Courbusier, implied by the Crystal Palace and the Eiffel Tower and proliferant in various forms since, is based upon our ability to concentrate the strength and support of stone into the greater flexibility and resilience of steel. It is almost as if we have concentrated and amplified the entelechy of stone through the transubstantiation of stone we call steel. We have also learned to concentrate the neuro-chemical performativity of birch bark into the pocket sized white compressed and convenient tablets of ASA. Concentrate and amplify: We have also concentrated and amplified the power of fire in our various heating systems and weapons. We have learned to concentrate energy resources into batteries which we are still trying to make smaller, more powerful and longer-lasting. The immense performativity of information storage, classification and retrieval has been miniaturized into the silicone chip which itself becomes ever more ubiquitous.

Our materiality has enabled us to contemplate the sublime distances of the universe. We have even sent telescopes into space so that we can get a clearer picture without the interference of the very atmosphere that makes life possible on our planet. Our material culture has also afforded us an astonishingly clear picture of the internal workings of that thing that we all possess -- our body. Not only have we seen our bodies in their microscopic operations, but we have seen the delicate and kaleidoscope lattices that make up the crystalline world of matter; we have observed the mitosis and meiosis of single celled organisms, and we have traced paths of the nuclei of atoms that we shatter in order to understand the forces that weave together our entire universe. Our material culture has enabled us to "go where no man has ever gone before" and given us a view of the "secret life" of matter. We have seen an explosion in our material culture and an implosion, even an internalization, which we must discuss next.

If we can discuss our emergent materiality along vectors of implosion and explosion we can also discuss it along a vector of incorporation and ex-corporation. Material culture extends us beyond ourselves. Our self-extensions enlarge our embodied reach and aspects of our perceptual and intellectual capacities into the lively stuff that we make. McLuhan had observed that things are not only "utterances" they are also ex-corporations (outerances) through the process of labour or re-contextualizations of various kinds. The stuff represents ourselves outside of ourselves, and seeks to place parts of the world external to ourselves within our reach. Our books extend our thoughts beyond our allotted time; beyond the time allotted to our "mortal coils." Simultaneously incorporation of our material culture often enhances quality of life for some of us. The vitamin-enriched food theoretically strengthens our bones and bodies.

Incorporating words written in books theoretically expands and enriches our interior life. The examples I am using apply as much to our ancestors of 500 years ago as they do us. Were we to change the discussion from books to stories, themselves supported by the mnemonic objects, we might say that this is applicable to all of our ancestors within human history. Our new materiality, however, modulates and amplifies this ex-corporation and incorporation.

Our emergent materiality brings a new dimension to the way we incorporate stuff to improve our lives. The idea of the prosthesis is not new. Indeed the prosthesis is already implied in every tool and cosmetic gesture. Freud, reflecting on the role of technology in the lives of his times, observed that man was a prosthetic god for whom artificial limbs and various extensions amplified reach[193]. The "Canada Arm" and the NASA program, are both examples of the range to which our prosthetics can ex-corporate and amplify our activities and intentions. Nano-technology, on the other hand, draws our attention to incorporation[194]. Various surgical implants have long been with us; their success increasing as did our knowledge of the material world and the biomedical processes within it. O'Neil, in his study of the place of the body in modern life, has offered a rather graphic account of the degree to which we now incorporate our technologies. As he observes we can now replace the following with "copies": Among artificial organs -- cornea, middle ear bones and ear chamber fluid, teeth inserts, carotid nerve stimulator, trachea, oesophagus, heart valves and pacemakers, veins and arteries and nerves. In terms of

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[193]Witold Rybczynski. *Taming the Tiger: The Struggle to Control Technology.* (New York: Penguin, 1983), pp. 3-4.
[194]Eric K. Drexler. *Engines of Creation: The Coming Era of Nanotechnology.* (New York: Doubleday, 1986), *passim.*

transplants -- hair, cornea, teeth, skin, lung, heart, liver, spleen, blood, kidney, pancreas, veins, arteries and nerves[195].

In the late 80s Drexler wrote a book hailing the emergence of yet a more miniature and potentially more effective prosthetic complex -- nano-technology[196]. Drexler observed that he was describing a science that was only just coming into being, but about which it was quite reasonable to write as early examples of its fruits were already apparent and the various scientific elements that would constitute such a science already existed and were being actively developed. "Nano-tech" is the meeting of micro and molecular engineering with the bio-sciences. Nano-tech, as imagined in a projective form, would be molecular engineering. "Machines" of molecular size could be injected into or consumed by the body in order to produce biomedical effects. The implications for many kinds of therapy are enormous. What had been rehearsed in a science fiction scenarios of the *Fantastic Voyage* where a group of "submariners" pilot a submarine-like vessel through blood vessels to conduct brain tumor micro-surgery, now appears in the realm of the possible but with the submariners remaining their normal size and doing the whole thing by remote control[197].

The implications of nano-technology take us to "smart things," fuzzy logic, robotics and automation. All of these are examples of prosthesis; all involve

[195]John O'Neill. *Five Bodies: The Human Shape of Modern Society.* (Ithaca: Cornell University Press, 1985), pp. 128-130.

[196]Eric K. Drexler. *Engines of Creation: The Coming Era of Nanotechnology.* (New York: Doubleday, 1986), *passim.*

[197]Made in 1966 and directed by Richard Fleischer, the film received Oscars for special effects, art and set direction. In this context also see the discussion of the Japanese government's continuing support for research into micro-machines. While the returns are not yet what was expected, and the Japanese find themselves reconsidering the size of their current investment into development, the research has already produced a number of "useful" devices -- among them micro-accelerometers (air bag release sensing devices). See: Staff. "A Little Potential." *The Economist,* November 23 1996, 97-98.

the ex-corporation of our skills and minds and can, in a sense, be imagined in the context of nano-technologies -- possibly. "Smart things" is a phrase, congenial in tone, to describe way in which we have imbued materiality with certain functions that we normally can only expect of living things and human beings. This is the loading of things with "intelligence." Tools are prototypical smart things insofar as they are conceived and can assist in accomplishing tasks while conserving or maximizing the energy required to accomplish these tasks. Up until the middle of the last millennium, nearly all of these were extensions of our muscles. Our emergent materiality over the past 200 years has extended the capacity of tools to extend the activity of our senses, and most recently our nervous systems.

Automation is simply not news. The thing we know best, the body, as an "anecdote" for the natural world, runs on automation[198]. We do not consciously control our heartbeats or the rates at which our livers produce bile. It is the ex-corporation of these processes translated into materiality that brings us the automation around which so much critical literature and activity have been expended. Automation frees us from labour but also constitutes the conditions under which at least some of us become "excessive" to the ones who own or control this automation. The ex-corporation and control of automatic processes also creates the setting for the production of our autonomous and automatic programmed and proliferant material culture. The ex-corporation of our limbs and organs also leads us to robotics and the capacity of our stuff to do things for us that we would rather not or cannot do ourselves[199].

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[198]Witold Rybczynski. *Taming the Tiger: The Struggle to Control Technology.* (New York: Penguin, 1983), pp. 65-74.
[199]For example -- escape agricultural life to achieve suburban life with a lawn to mow, to achieve a machine that might do it for you.: Staff. "Robotic lawnmower." *Province*, 15 May 1994, C3.

The term robot was born the same year as my mother. It originates in a play by Karel Capek and is based on the Slavic root, "*robota*", which means work. While the idea of an automated extension of ourselves can be based on the idea of it *working* for us, the robot must also be understood in the context of a larger imaginary universe of automata[200]. This imaginary universe has a host of denizens which all share something with our dreams of ex-corporating something human that will be a "servant" to a variety of needs, and not all of them "utilitarian". An early record of this dream is found in the Greek myth of Pygmalion in which a brilliant sculptor of that name creates a statue of such exquisite beauty that he falls hopelessly in love with it. The gods, by breathing life into the statue, "animating" it, turn the cold marble into a living woman who then falls in love with her creator. Another variation on this theme can be found in the story of the Golem, a giant made of clay and animated by cabalistic magic by a rabbi in a ghetto to save his flock from pogroms of that day. In more recent days this dream took the shape of the "myth of the mechanical servant[201]."

Concurrent with the early spread of the consumer society many home appliances were marketed on the promise that they somehow could replace the servants that one could perhaps not afford, or which could not be gotten. Neither a washing machine nor vacuum cleaner are mechanical servants. They may save time and effort, but they just do not do it themselves. In some broad sense however, they are synecdoches for a larger network of potential inter-

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[200]Beaune offers a survey of the automata of previous centuries. Note in particular his discussion of the celebrated and near-mythic Vaucanson's duck. Jean-Claude Beaune. "The Classical Age of Automata: An Impressionistic Survey from the Sixteenth to the Nineteenth Century." In *Fragments for a History of the Human Body: Part One*, edited by Michel Feher, Ramona Naddaff and Nadia Tazi, 430-480. (New York: Zone, 1989), pp. 431-480, particularly, 456-7.

[201]Adrian Forty. *Objects of Desire: Design and Society from Wedgewood to IBM*. (New York: Pantheon, 1986), pp. 208-209.

functionalities that would give mechanical service and obviate the allocation of human effort. The robot, while a very crude "creature," more an extension of functions rather than forms, still remains a potent, imaginary seduction for future development of our lively stuff. For example, consider "Data" in the popular "Star Trek: Second Generation." This walking, talking, philosophically-oriented machine -- for that is what the pallid, green faced Data is -- is only one variation of this larger theme. Our science fiction is full of a wide range of other variations. The replicants hunted by the "bladerunner" in Philip K. Dick's *Do Androids Dream Electric Sheep*, are further and perhaps more seductive, if chilling, tropes[202].

At this juncture we might note two further points with respect to the robotics and automation. First, as regards robotics, we need to observe the importance of compliance in the development of new and more sophisticated robotic systems. "Compliance," that is the ability to "give" while physically sensing surfaces and shapes, is a major step in developing increasingly interactive and "sensitive" "smart" machines. We note the term "compliance" for the resonance that it shares with the more critical approach to technology advocated by Ursula Franklin[203]. In her distinction between "prescriptive" and "holistic" technologies she attributes the demand for compliance to the prescriptive. These technologies, she argues, are those which advance mechanical mass production and are associated with hierarchical social

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[202]Philip K. Dick. *Blade Runner (Do Androids Dream Electric Sheep)*. (New York: Ballantine, 1968).

[203]For a discussion of prescriptive and holistic technologies see: Ursula Franklin. *The Real World of Technology, CBC Massey Lectures*. (Montreal: CBC Enterprises, 1990), pp. 23-29. Franklin assimilates all technologies and techniques that are based on divisions of labour and function to prescriptive technologies. These she ascribes to military and industrial cultures and forms of social organization. Other techniques and technologies which are based on completion of a whole task or project and require a high degree of multi-faceted knowledge and skill, she ascribes to "women's culture." See also the discussion of culture of expertise (pp. 35-54) and women a wider values (pp. 97-119) in Arnold Pacey. *The Culture of Technology*. (Cambridge Mass: MIT Press, 1986).

institutions such as armed forces. Compliance, while morally contestable as a by-product or condition for industrial mass production, becomes a mere engineering goal in the production of robotic systems that may lead a whole new dimension to our emergent material "lively stuff."

Our emergent material culture, we had said, is "programmed." We had noted that the "programmatic" dimension of material culture could not be considered a complete novelty, for resonances of programming can be found in material culture, particularly in aggregates and tools, since the earliest history of our species. Acceleration and proliferation, as well as mechanization and then electrification, of material culture brought about the kind of "programmed" materiality that we see around us today. The programming is often most apparent, if in a hidden way, by automation. This counter-intuitive formulation -- "apparent, if in a hidden way" -- stems from the increasing "opacity" of sophisticated electronic systems where one is aware that it is doing something (there are effects), but one does not know how it is doing it. Automation, spreading to more ranges of material culture, represents the leading edge of the programmed and performative aspects of our emergent materiality.

II

I beg the reader's indulgence and acknowledge freely that at this point I do seem to be moving into the realm of SF, that is to say, science or speculative fiction. Or at least so it will seem if I go where the thread of this exposition leads me next, which is from smart things to "liveware" and discarnality. By liveware I mean a new range of "products" that are emerging out of bio-engineering; by discarnality I refer to an ex-corporation of consciousness such as is accorded us

by the lively stuff like the telephone and the modem -- even though this is already anticipated in the mnemonic possibility in-wrought in things. Both are yet other variations on the theme of incorporation and ex-corporation, for in both we ex-corporate and condense our intelligence and knowledge into the form of new performative things. Simultaneously we incorporate the benefits of such ex-corporations and use them to further our quality of life and affective states while navigating it.

Bio-engineering has produced a new order of things that propose at some almost spiritual level, a fundamental change in the way we construct and comprehend reality. The root for the word technology is the verb *tikto* which for the ancient Greeks conveyed "I give birth". For the bulk of our history, birth has only been possible in human biological form by the acts of procreation and then gestation in the maternal womb -- the source of our word "matrix". Men and women may have made machines and used them, but only women could give birth. To be sure, our early experiments with eugenics, in "husbandry," had already transformed part of the natural world into a kind of liveware[204]. After all, what is a herd of domesticated sheep if not a living component in the conscious or unconscious programming of the environment or topography of daily life?[205] The semen of a bull, when manipulated, in effect becomes a kind of liveware as does the plasma that is stored by various relief agencies and used for transfusions. But this kind of liveware involves the domestication or

[204]See Ronnell's rich if difficult analysis on Alexander Graham Bell's adventures in producing teat-enhanced sheep and views on eugenics. See: "The Bell Nipple." Avital Ronnell. *The Telephone Book: Technology, Schizophrenia and Electric Speech.* (Lincoln, Nebraska: University of Nebraska Press, 1989), pp. 337-350.

[205]The world press reported the successful cloning of an adult mammal in early 1997. Staff. "Adult mammal cloned successfully." *Globe,* February 27 1997. For a variation on a theme see: Michael Kesterton, M. "Sheep, Sheep, Sheep." *Globe,* February 25 1997, A 16, which reports an earlier, if not a successful effort to create a chimera by British researchers at Cambridge. Researchers had been cloning mice for approximately five years by the time the cloning of a mammal (sheep) was announced.

manipulation of external complete and discrete organisms. One mediates but one does not create *de novo* nor *ex nihilo*.

Problems stemming from oil spills provided the consequence of invention that led to the further necessity for an organism that could feed on our human-made disaster. Genetics married to bio-engineering and our sophisticated manipulation of our material world rendered crude oil-eating bacteria. Created *de novo*[206]. Simply put, our emergent materiality implies the creation not only of molecular engineering but also of living organisms presumably of increasing sophistication in form and function. The discovery of DNA, the "building blocks of life," has made it possible to alter life at the genetic level. The implications are, futuristic though they may be, that the "mechanical animal" blithely envisioned by the Italian Futurists, Philip K. Dick's "electric sheep" and even Rudy Rucker's "silly putters" and "femlins," might conceivably lie somewhere ahead of us in the future[207].

This takes us to one of the "great enigmas" of our being. The question of life has always fascinated us. We have always loaded it, if by often only imagination, into the artefactual world. It is this that has made of us the species that we are. But it is not only our manipulation of life itself that serves as an index for where our emergent materiality may be taking us -- there are counter vectors that disclose other kinds of implications. Discarnality, along with dematerialization, provide other intimations of possible futures.

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[206]Arnold Pacey. *The Culture of Technology*. (Cambridge Mass: MIT Press, 1986), p. 6, and again on p. 49.

[207]See Rudy Rucker's *Freeware*. (New York: Avon, 1998).

Discarnality, along with its attendant de-materialization, both indicate a shift from the apparent materialist basis that has driven our civilization over the last five centuries. We must first recognize that the discarnality and dematerialization which we are about to discuss are not new in human history[208]. Nor are they without a basis or a ground in the evolution of our material culture. We emphasize therefore that these processes are old but altered, amplified and accelerated by the evolution of the material base upon which they (counter-intuitively) rest. If I say that these developments take us away from materialism I am not following McLuhan in his optimistic digressions of the later sixties that would have us entering into a new Pentecostal stage[209]. Nor am I suggesting that the stuff will get us "back to God." What I do mean however, is that there are now ways in which the stuff seems to be increasingly disappearing into the experience that it accords; the stuff now makes it possible for us to experience our effective selves as disembodied beings. What lies at the root of this discussion is that the stuff puts our relationship to our bodies, and the bodies of others, into a realm as enigmatic and challenging as what our material culture implies to our ability to understand our relationship to life and its creation.

The discussion has now led us to areas that get increasingly speculative, if completely realistic, given what we can see emerging both from the matrix of material innovation and the matrix of the imagination[210]. As we move through

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[208]For a variation on "dematerialization" see Berman's discussion of the Marxian metaphor in Marshall Berman. *All That is Solid Melts into Air: The Experience of Modernity.* (New York: Penguin, 1982). *passim.*

[209]Eric Norden. "Marshall McLuhan: A Candid Conversation with the High Priest of Popcult and Metaphysician of Media." *Playboy,* March 1969, 53, p. 72.

[210]Frank Zingrone in his insightful and provocative discussion and critique of tetrads suggests that certain innovations and inventions flow from deep-seated dreams and ideas. He gives flight as one example. Technologies which stem from the desire to realize these dreams he calls "insistent technologies." See: Frank Zingrone. "Laws of Media: The Pentad and Technical Syncretism." *McLuhan Studies: Explorations in Culture and Communication I,* no. 1 (1991): 109-115, pp. 78-79.

smart things, robotics, automation, and liveware, we do enter into a "real" that

grows more and more counter-intuitive; but no less urgent for all that . These

ideas are counter-intuitive, for the pre-condition of materiality is its very

objectivity and facticity. How can we talk about the dematerialization of material

culture? To complicate matters, we have the idea of the discarnality or

disembodiment that become part of the package as our explicit and implicit

media converge and new hybrid forms appear in the topography of daily life.

The body, like the materialism of the Renaissance that Mukerji describes[211], has

come to occupy an increasingly important part in our intellectual landscape.

The second half of this century has witnessed the body come to occupy one of

the central positions in social theory. Thus, the body, the origin of our

artefactual world, should be "valorized" by our emergent materiality, not

relegated into a domain of discarnality. Yet, the logic of our stuff suggests that a

dematerialization, and a discarnatism, are both well on their way. Put it another

way: in addition to the "valorization" of the body through its various

amplifications and extensions, the evolution of our smart and communicative,

interactive, stuff also pushes the body into a newly subordinate state relative to

the "spirit," if this term is understood as a description of "mind," the locus of

"consciousness," and experience.

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[211] For the relationship between the Age of Discovery, the proliferation of new goods, the Renaissance and the emergence of materialism see: Chandra Mukerji, Chandra. *From Graven Images: Patterns of Modern Materialism.* (New York: Columbia University Press, 1983), pp. 78-79. See also: William Manchester. *A World Lit Only by Fire: The Medieval Mind and the Renaissance, Portrait of an Age.* (Boston: Little, Brown, 1992). While it deals with a later period Megill's assessment of the "Atlantic Revolution" is also useful. See: Allan Megill. *Prophets of Extremity: Nietzsche, Heidegger, Foucault, Derrida.* (Berkeley: University of California Press, 1985), pp. 5-9.

III

Design historian, Ann Ferebee, noted a process in the evolution of industrial design which began to appear in the 50s; Ferebee dubbed this process "dematerialization[212]". As Ferebee saw it this dematerialization was a convergence of a number of trends. As discussed previously, artificial obsolescence, in its various forms and formulations, was a well established trend by this time. The relationship between the fashion system and the market was well-articulated, as was the increase in the tempo at which the fashion system was both proliferating to ranges of goods, and the benefitting from/causing the fragmentation of markets and styles. Things were disappearing into the market and being obsolesced by either technological or stylistic innovation.

Things disappeared into the invitation, appeal and existence of the "new and improved." Technological innovation displaced things at ever greater rates. The evolution of sports equipment and home entertainment gear is an example of this -- even if this too is counter-intuitive. While things were disappearing, they were proliferating and permutating. The old was being displaced, made obsolete by better reception, more convenience, better ergonomics, increased safety and so on. Stylistically change proceeded perhaps even faster. By the 1920s, the American marketplace had realized that there was no "Market," but *markets* to be understood, tapped and exploited; much as there would soon be no "Fashion" only the various "fashions," and "looks" evolving into the lifestyle diversity and fragmentation of markets that we have today. With the

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[212]Ann Ferebee. *A History of Design from the Victorian Era to the Present: A Survey of Modern Style in Architecture, Interior Design, Graphic Design and Photography.* (New York: Van Nostrand, 1970), p. 99.

fragmentation of wants and needs that came along with the colonization of more and more human functions and needs by material culture, came a indeterminacy about the qualities of the materiality that served and satisfied these needs. Competition between rival brands often singled out isolated features of competitors' products to boast advances in their own. "Bang for buck" became as complicated a proposition amid the diversity as "craft knowledge". The integrity and concrete properties of things were dematerializing into this very fragmentation[213].

Disposability had also come to be a standard feature of daily life in the industrial countries of the First World. An early manifestation of the push toward convenience was the appearance of disposable tissues to replace the handkerchief that needed regular washing. Over 3 generations products such as TV dinners, disposable diapers, lighters, pens, cans and food containers, the whole packaging revolution, cheap ill-made clothing and appliances, would have expanded the disposables list. Today contact lenses, cameras, among other things, continue to enlarge it. Disposability, just a feature of the culture of convenience, favoured the "out of sight out of mind" accorded by waste bin and, as a concession to decency, by the dishwasher. Re-cycling seeks to reduce things back to their constituent parts and reuse the materials anew. The stuff is made to go around, but the rate at which waste grows exceeds our apparent willingness, commitment or ability to re-cycle. The point of the Styrofoam cup, after all, is to be thrown out -- such is its entelechy, or at least such is one of the significant aspects of its entelechy that we seek out and cultivate. Things dematerialize into their disposability.

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[213]William Leiss, Stephen Kline, and Sut Jhally. Social Communication in Advertising: Persons, Products and Images of Well-Being. 2nd ed. (Scarborough, Ont.: Nelson, 1990), p. 69; and especially pp. 294-95.

If dematerialization can be seen in the obvious waste, wear, and obsolescence generated by artificial obsolescence and disposability, it can also be seen, if in a more subtle form, in the processes in which discrete things disappear into systems that come to replace them. Systematic integration can be seen most clearly when the radio, the tape recorder or CD and the TV as well as amplification equipment and speakers all coalesce into a "home entertainment system." Another example might be the disappearance of the vacuum cleaner into a wall-mounted nozzle to which the hose is attached with the vacuum cleaners "guts" stored in the basement or a spare room. We have also already begun to sketch in the idea of increasing "opacity" of our emergent materiality. Leiss, in his discussion of the evolution of the consumer market, identified the attendant figure from the point of view of the consumer as "the loss of craft knowledge[214]." As things became more mechanically and technically sophisticated and diverse in their forms, materials and origins, the customer knew less and less about what they were made of, who made them, and in case of a breakdown -- how to fix them.

This increasing loss of craft knowledge intensified with the appearance of transistors, integrated circuits and circuit boards, and the evolution of the inverse relationship between size and performativity. We might remind ourselves that the first successful computers occupied rooms to provide the number-crunching capacity of the PC of today with its footprint discrete enough to allow for a note-pad and other necessary paraphernalia on the desk-top. Reams of paper theoretically disappear into the memory banks of the note-book

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[214]*Ibid*, pp. 69-70.

computer[215]. With CD ROM capacity, the *Britannica* disappears into the slim line of a plastic casing. Open it up and look inside -- I mean the box itself -- and what do you see? Unless you are part of the tribe of experts and aficionados who know -- what *do* you know? And even they, without the appropriate gear, can see or hear nothing from the disc "as is[216]."

Thus we can add miniaturization, systematic integration, and opacity to the trends that indicated a kind of contradictory "dematerialization" of our emergent materiality.. Our previous discussion of the incorporation of our technologies adds another modality of its disappearance. Yet another trend in the push to the "dematerialization" was the emergence of technologies sophisticated enough to put possible to the question of things *ex nihilo*; virtually. The dream of the alchemist, we know, was not only to transform lead into gold, but also to conjure a world out of the retorts and disciplines of the "art[217]." Our vast anthropologic record of fable and tale indicate that this dream of conjuring

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[215]I say "theoretically" in light of apparently empirical evidence to the contrary. Consider the following report: Services, News. "Computers = more paper." *Province*, August 18 1994, A 36.

> We love everything about computers - but mostly the wrong things. One of our favourite and most-used is the one that sends all those paperless memos and reports to the nearest printer. A basic instinct: Make a paper copy. Better still make two or three to be safe. Decima Research surveyed offices across Canada and 50 percent answered said computers create more paper than non-computerized offices. Another 27 percent -- not quite one-in-five -- said the hi-tech gadgets actually save paper. "Even though (office workers) assured that there's a backup somewhere in the bowels of their building, there's still reluctance to accept this as true," said Suzanne Bertram of Pitney Bowes, the office equipment maker that commissioned the survey. Some say that they're using more paper because the computer has made them more productive. the survey of 531 companies found.

[216]Another significant drawback of the Understanding McLuhan CD-ROM is that nothing is included with it other than the basic installation instructions. Unfortunate, as the material assembled is very much in aid of serious study of McLuhan's ideas. The trouble is that you have to navigate the entire CD (takes a lot of real time) to get your bearings. Here is an example of a situation where a composite of media formats would do better that "one" alone. No doubt cheaper to do it the way it was done. Daniel Beer, Daniel. "Understanding McLuhan: A cd-rom on the ideas and life of media guru Marshall McLuhan." , edited by Paul Benedetti. (Irvington, New York: Southam Interactive and Voyager, 1995). Benedetti's recent publication of the textual content of the CD-ROM is helpful, however. See: Paul Benedetti and Nancy DeHart, ed. *On McLuhan: Forward Through the Rearview Mirror -- Reflections On and By Marshall McLuhan.* (Scarborough: Prentice Hall, 1996).

[217]Mircea Eliade. *The Forge and the Crucible: The Origins and Structure of Alchemy.* Translated by Stephen Corrin. 2 ed. (Chicago: University of Chicago Press, 1962), pp. 169-178.

the concrete out of "thin air" is old indeed. If not things, then their effects. Cinderella's Fairy God Mother's warning underscored the virtuality of the whole ruse, though the effects were every bit as planned. De-materialization is further advanced by a "will to virtualics" that still inundates the popular press, entertainment products, as well as the imaginations of new generations of hackers and computer specialists.

In 1983 the French philosopher Jean-Francois Lyotard coined the term "immaterials" to designate the things (and experiences) that would comprise an environment-like exhibit at the Pompidou Center. "*Les Immateriaux*," mounted in 1985, was organized around the thought that: "The relationship between mind and matter is no longer one between an intelligent subject with a will of his own and an inert object. They are now cousins in the family of the immaterials[218]." The exhibit was made up of what can be called communication gear -- images, sounds, lights, text, narration and so on. The computer, with the PC still in it's pre-school phase, figured in the exhibit. The format of "Les Immateriaux" was nothing new. The "Happenings" of the 60s had set the way, as had the media environment experiences pioneered by the NFB at Expo '67, as well as and by faculty and students at the University of British Columbia[219]. Flight simulators were also already around -- not only around, but advancing in performativity even as the performativity of computers was evolving.

While people had been experimenting with virtual environments for a long time -- liturgy, theatre and then their acceleration into the diorama and

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[218]For full context of citations see the short curatorial notes: Jean Francois Lyotard. "Les Immateriaux (The Immaterials)." *Art & Text* 17, no. April (1985): 47-57.

[219]Philip Marchand. *Marshall McLuhan: The Medium and the Messenger.* (Toronto: Random, House, 1989), p. 171; see also reference to McLuhan's interest in convergent media, specifically "encapsulating chambers" in 1964, p. 165.

cinema and TV, were rehearsals -- Lyotard's text used this medium to pose a

series of questions about what the immaterials implied for our conception of

"man." Lyotard suggested that the new materials and immaterials (their effects),

"question the idea of man as a being who works, who plans, who remembers,

the idea of the author[220]. The exhibit was organized around the principle

question: "do immaterials leave the relationship between human beings and

material unaltered or not?," "do they maximize control over nature?," "are we

losing control over the immaterials?[221]"

The immaterials, then, are those fringe but dearly-sought and cultivated

effects of the materiality that supports them. Expanded, as already indicated, to

cover more contemporary or "better resourced" expressions, we find various

simulators and their extension into the still-less-than-satisfying virtual reality

technologies. Again it is the realm of Science Fiction that gives us projections

of the shapes that this imagination takes: "the holodeck" and "the replicator":

The former creating environments and situations that are virtually real, the latter

reconstituting some *urmatter* into everything from Beef Stroganoff and Klingon

Cabbage Rolls to Hot and Sour soup. The point behind the "virtual" is to make

something "as good as if. . ." Beyond the "teledildonics[222]" and games that push

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[220]See a parallel discussion of the "fate" of the author under the circumstances of electronic word processing in Michael Heim's *Electric Language: A Philosophical Study of Word Processing.* (New Haven: Yale University Press, 1987), p. 213.

[221]Jean Francois Lyotard. "Les Immateriaux (The Immaterials)." *Art & Text* 17, no. April (1985): 47-57.

[222]Rheingold writes:

> "Now, imagine plugging your whole sound-sight-touch telepresence system into the telephone network. You see a life-like but totally artificial visual representation of your own body, and of your partner's. Depending on where you go and where you are allowed and what you are willing to pay (or trade or do) you can find one partner, a dozen, a thousand, in various cyberspaces that are no further than a telephone number. Your partner(s) can move independently in the cyberspace, and your representations (a.k.a. "puppets") are able to touch each other, even though your physical bodies might be continents apart."

Further to the above see: Terence McKenna. "Marshall McLuhan: The Cognitive Agent as Cyberpunk Godfather: Reviewing The Letters of Marshall McLuhan." *Mondo 2000* 1988, 48-49.. This "odd" concept, that is of distanced sexual interactivity between "man" and his "machines" is already part of the catalogue of "entelechies" in McLuhan's media inventory(pan-opticon-cum-masturbatorium). This is one of the dominant

the blood pressure, virtualics promise a variety of beneficial uses -- the implications for medicine, training and distance education, as well as vast spheres of planning, are enormous. They are also enormous for the military. What their implications are for the species remains to be seen. But here the immaterials and virtualics intersect with a concomitant disappearance -- that of the body, the own-most thing that anyone of us "has."

On the eve of the transformation of war and command economies into the consumer cornucopia of the 1950s, McLuhan already observed the uncertainty about needs and wants that the new consumer was facing[223]. This uncertainty, and subsequent fragmentation of person into a variety of materially-coded domains, can be seen as an unsettling of the person as an integrated whole -- but this was not enough to call for a discussion of "disembodiment" or "discarnatism." Disembodiment was implied in the manuscript and the book, and we will have more to say about this shortly, but the kind of disembodiment that our emergent materiality supports, was hitherto unknown. We have already seen the rehearsal of this in the countless late night movies that bring the Bogarts and Marylin Monroes into our homes. The Greeks imagined the shining, immortal and protean bodies of their gods[224]; our "screen stars" remain

themes of The Mechanical Bride and the substance of the title -- the displacement here is onto the automobile. In this light see for example: Marshall McLuhan. *The Mechanical Bride: Folklore of Industrial Man*. 1967: Beacon -- Boston ed. (New York: Vangaurd, 1951), pp. 70-100. The theme continues throughout McLuhan's publications. Like McLuhan's concrete relationship with advertising, the question of the relationship between sexuality, culture and technology in McLuhan's work requires critical re-reading and may prove to be fertile. On similar thematic vector, see also: J. G. Ballard. "Myths of the Near Future." In *Myths of the Near Future*, 7-43. (London: Jonathan Cape, 1982).

[223]McLuhan, Marshall. *The Mechanical Bride: Folklore of Industrial Man*. 1967: (New York: Vangaurd, 1951), pp. 132-134.

[224]As with the question concerning sexuality in McLuhan, the problematic of the body remains an unexplored area in his work. McLuhan's body is central to his analytic apparatus, and his work contains both an analytic and a poetic formulation of the body in history and social life. The question of the sensorium, tactility and embodiment are all powerful vectors that drove McLuhan's imagination. My discussion in the body of the dissertation adumbrates some of this thematic. The reference to the Greek conception of their deities' embodiment has resonance for what is being imagined within the development of virtualic technologies. See: Jean-Pierre Vernant. "Dim Body, Dazzling Body." In *Fragments for a History of the Human Body*, edited by Michel Feher, Ramona Naddaff and Nadia Tazi. (New York: Zone, 1989), pp. 24-

ever youthful but disembodied, shimmering on the screens that create the nodes on the network of effects and experiences. It is the advent of the lively stuff, of the convergent electronic media, implicit and explicit, that brings about the conditions for this disembodiment.

Dematerialization leads us to disembodiment; if "disappearance" of the object, why not the subject? But before we can address this "disappearance," we must draw a tendon-like bridge between the two figures: this connection, is in the conception of "mind-link" and remote control. As with the themes elaborated above, both mind-link and remote control could be assimilated to other discussions. When considering robotics, for example, remote control and remote sensing become operand questions. Robotics and automation, as seen from a humanistic perspective, are the way in which we liberate ourselves from dangerous or tedious, unsavory forms of work. Mindlink is implied in any investigation of the immaterials and media. Many a writer has despaired or rejoiced in the possibility or impossibility of a "mind-link" between the written consciousness and the reading re-constituting consciousness of the other. With a book or story, it is neither the cover nor typeface, nor even the quality of the paper finally that is "deep and significant," to borrow Borgmann's formulation; It is the story, the structured flow of consciousness, that counts.

I separate out these two themes because they resonate with the essential properties of our emergent materiality and our behaviours and endeavors through it. The technologically facilitated linking of minds, and the turn to the extension of the effective self through telematics, place an emphasis on the role

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25. For comparison -- Athens to Jerusalem, as it were, see: Charles Mopsik. "The Body of Engenrderment in the Hebrew Bible, the Rabbinic Tradition and the Kabbalah." In *Fragments for a History of the Body*, edited by Michel Feher. (New York: Zone, 1989). pp. 48-73.

that experience has come to play in our cultivations of our materiality. The emphasis is on experience -- in other words, on a modulation of consciousness which need not leave a material trace. It is not the stuff at all; the sizzle, not the steak, i.e. the steak-eating experience. What, after all, do you get from a rock show? A rush, presumably. A feeling. A sense. A learning experience. From pragmata to pleasure; from mind-link to catharsis. Remote sensing is experience at a remove; Mind-link is experience of the intimate only imagined within our fable, "pseudo-sciences," dreams and myths. And yet the former is a reality; and the latter a topic of enthusiastic interest, bio-cybernetic engineering research, and best-selling science fiction .

Remote control and remote sensing are accepted aspects of the topography of daily life even if they remain often enough in the background. Remote control, takes the form of the "zapper" with which most of us graze or surf through the cabled or satellite transmitted offerings of the emergent "500 channel universe." Romanyshyn has used the metaphor of the magician's wand (the wand of a latter-day Merlin), for this innocuous device of the quotidian. The little black, buttoned, gizmo facilitates the visual and sonic inflow of myriad worlds, imaginations and experiences tumbling into our dimmed nests as we unwind from the tasks and obligations of the day[225]. A similar more pragmatic and completely unheroic device lets us, and our automobiles enter the dens that would keep our mechanical steeds for the night. We buy posters that show us our homes precisely as specks on photos of our geographic coordinates from miles above in space. Somewhere, someone, manipulates

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[225]Romanyshyn, Robert. Technology as Symptom and Dream. (London: Routledge, 1989), p. 1.

controls and the "eye in the sky" can read an address on an envelope from way up there, or so we hear in the popular media-rich fables of our day[226].

Remote sensing and remote control, this enormous, perhaps monstrous, extension of our limbs, senses and minds, are related to two other figures in an inventory of effects (as McLuhan would have put it): telematics and telegnosis -- both being older and perhaps more originally forms of our mechanized and automated, "densified" and accelerated material world. By telematics we mean the capacity to make an impact at a distance. We might also call this teletronics, in as much as, the suffix "tron" conveys the sense of a machine and "tele" means distance. The dream of this ability, ever at increased performativity, we learned from our first home -- the natural world. Lightning's awesome capacity to "strike," a blow -- from Greek Zeus or ancient Lithuanian Perunkas -- was not unnoticed by human imagination. Renaissance gun powder for cannon was mixed for not only for burn and expansion of gases that would propel the shot -- the powder was also mixed for the best sonic effect, for the "cosmetic" impact of the "thunder of the guns[227]." Our cultivation of the techno-mechanical world has expanded that telematic power to embrace at least some of the aspects that we have already imagined. Our space programs, and space stations, our experiments with undersea environments are extensions of this telematic imagination and its realization. The Canada Arm: remote sensing, remote control, telematics -- and telegnosis.

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[226] See: Kroker, Arthur. "The Disembodied Eye: Ideology and Power in the Age of Nihilism." *Canadian Journal of Political and Social Theory* 7, no. 1-2 (1983): 194-234.

[227] O'Connell, Robert L. *Of Arms and Men: A History of War, Weapons, and Aggression.* (New York: Oxford University Press, 1989): see "thunder of hooves," p. 87 and "drama of infernal overtones," p. 110.

Telegnosis, knowledge at a distance, is a variation on this theme. The connection between action at a distance and the expansion of knowledge is an old one. Alexander traveled with his stable of scholars to learn from and about the peoples that his armies conquered. The record amassed by our civilization is another form of this telegnosis -- made possible by our material culture; books, films, videos, audio recordings, archeological evidence, the published discourses of various researchers in the multitude domains that make up our arts, human and natural sciences. Knowledge across the distances of space and time has been a figure in our folklore and religion -- indeed the "technicians of the sacred," as Eliade calls them, are often "shaped" by an "out of body" experience or an oneric or mythic journey to a world that is otherwise not visited by the "living[228]." It is their knowledge of what goes on in that world and how this affects the lives of "mortals" that gives them their power. The power of the Egyptian priesthood was based on writing -- and an enormous store of knowledge considered ancient by the writers of Greek antiquity such as Plato and Herodotus. Telegnosis across space and time. The power of that priesthood was affirmed by the correct prediction of celestial and meteorological events. Space and time. The shamanic experience and the prophetic imagination are both anticipations of telegnosis.

Our materiality had given us a corpus of very rich traces accruing and sedimenting in the wake of the exploratory sweeps of our consciousness across our universe. We map star systems that none so mapping will ever actually ever see in real time. We use our number-crunching machines to create credible models of our future "given current and foreseeable trends," as well as

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[228]Eliade, Mircea. *Essential Sacred Writings From Around the World.* (San Francisco: Harper, 1967).

the contours of planets and the paths of sub-atomic particles as they fly off from the collisions into which we have propelled them. Our books and audio-visuals recordings bring back the dead and place them amid the ideas, concerns and issues of the living. Our emergent materiality makes the expansion of our telematic and telegnostic enterprise possible and, in its projections, probable enough to support continuing efforts, allocation of resources and research.

The telegnostic figure accelerates into the hybrid of the TV, the telephone and the adding machine -- the teleputer. With the teleputer and the Internet our emergent materiality creates conditions which are conducive to a new form of communication, perhaps a new order of reality. Teihard de Chardin thought it; so had McLuhan[229]. But the idea goes back to the New Testament and is implied in theological speculation since ancient times. The "nooshpere" posited by de Chardin and the "electronic Pentecostalism" enthusiastically speculated by McLuhan in the *Playboy* interview, now takes the form of the network of cable -- wire and glass -- that links our computers and takes our telematic and telegnostic reach greater than ever before.

What de Chardin imagined was a membrane of consciousness linking more and more of us together into a planetary mind out if which we will continue to evolve into a "higher," or a more complex and sophisticated, state of consciousness and, presumably, being. McLuhan, on the other hand, foretold the externalization of our central nervous system into a neo-Pentecostalism -- a unity of mind that would be supported by our technoelectronic material culture. Neither had imagined the vast excess and final tedium of an infinite electronic

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[229]See: Jennifer Cobb Kreisberg. "A Globe, Clothing Itself With a Brain." *Wired,* June 1995, 108 - 113.

Yellow Pages. Nor did either, at least not at first, imagine the chaos and anarchy of the Internet. For de Chardin, the evolutionary path was ascendant. Within a decade of enthusing about the externalization of the central nervous system, McLuhan added an apocalyptic tone to the whimsy with which he approached the topic in the mid-60s. Whatever we make of it, our lively stuff continues to put probable to our dreams of an electronic melding of ourselves with the consciousness of others. As McLuhan said, all of history and human experience can now be compressed and made present at the turn of the dial -- or the tapping on a keyboard, as the case may be.

The development of increasingly sophisticated teleputing technologies in combination with an evolving but already well-developed graphic "vocabulary" of popular and specialized cultures, leads to yet a further evolutionary turn in the current history of our lively stuff: the dream of a frictionless interface and a post-symbolic language. We will begin with the latter. The PC was born in the early years of the 80s and began to generalize through the end of the decade. Teleputing came next. The World Wide Web and Internet were nascent when William Gibson's science fiction novels and stories created a darkly seductive image of the virtual world of the cyberspace. The image was seductive because the snippets of knowledge that constituted the "public mind" had already sketched out some of the convergences and developments that could make the cyberworld imaginable. Gibson combined these into a synthesis, gritty, sensational, colourful, disturbing but stimulating. The stories and characters were not bad, but the diagesis was fascinating -- as much to the pimply-faced juvenile males who immediately understood the autoerotic possibilities of this kind of world, as to the more mature minds who could see the glimmer of a dark utopia of applications and dollars implied in Gibson's world. Nor was it

Gibson's world alone. M.I.T.'s media lab, Jeron Lanier's experiments with the data glove, the accelerated colonization of the life-world with cyber technologies, all indicated that there existed a base of possibility to the Gibsonian synthesis. Among the technological promises of this synthesis are two that are particularly germane to our discussion -- but they conflate into one technology.

In the Gibsonian diagesis people literally "plug into" the computer and experience travel in the cyberspace of information through vivid images planted directly on to the sensory apparatus of the brain; the brain turns into the immediate computer screen and "travels" on a tide of digitized information. This takes on the "feel" of embodied travel with the acoustic, visual and tactile senses stimulated without actual physical or external world stimulation present. The technology also allows for a "transmigration" of sorts -- where minds can be interconnected, the experiences of one being experienced by any other, or, a "host" of others. Gibson calls this technology -- "simstims" where the music video of the 80s becomes a model for a variety of "canned" simulated experienced into which anyone can "jack". Not unlike the experience proffered by the "fidelity" of the audio equipment, the Simstim "takes you there[230]." The "there," in this case, is being experienced through the body and senses of an other. In this scenario we have the dream of the seamless or frictionless interface between people and people through things, as well as between people and things. We also have the idea of "post symbolic language."

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[230]William Gibson. *Neuromancer.* New York: Ace, 1984..

Again, nothing new. We have already examined the question of "virtual reality" and noted that its roots lie not in the technology, but in the imagination -- the bourgeois Romantic novel, after all, was supposed to move the reader into a virtual reality. Before that, and still current, religious ritual, and games and play of various kinds, have been and are aimed at producing a virtual reality. The roots, no doubt are deeply entwined with the oneric experience -- one common to virtually all of our species. What is new is the amplification of the inter-subjective domain of this by means of our lively stuff. A similar observation can be made about the ESP-like entelechy of teleputing. The idea of reading other's thoughts through gestures and visual or aural gestalts is not new -- indeed the origins of our written language are to be found in it. We communicated by pictographs and abstract gestalts before we learned to "digitize" these into alphabets. Our emergent materiality, with its bio-technical possibilities and the turn to the immaterials, accelerates and amplifies both the imagination and the efforts to realize its projections.

Nor is shift into a virtual reality by use of our material culture all that new if we include pharmacology, folk or otherwise. Psychedelic and mood-altering substances have been known by the species since time immemorial. The use of cannabis, various mushrooms, and fermented and distilled preparations, have long, and in nearly all parts of the world, provided the "technicians of the sacred," or significant portions of populations, with the ability to alter their states of consciousness; to amplify certain visceral and mental experiences. The implication of the implant, miniaturization of techno-mechanical technologies, bio-cybernetics and the whole raft of seemingly arcane sciences, creates a bridge from an internal, subjective experience into a shared one *via* the externality of the program and common channel through which subjects

together access the program. McLuhan had noted in the late 60s that drugs for A TV generation were an understandable escalation of the pursuit of a certain, altered, and mythic experience. After TV, not to mention after the multi-media teleputer, drugs were like "jam on jam[231]." Indeed, McLuhan's theorization of the physiological effects of the TV image suggested that it had the effects of a drug, but it accessed the central nervous system through the ocular sense rather than being ingested orally[232].

These figures or themes -- "mind link" and remote sensing and control -- converge on the point at which our emergent materiality seems to taking us, or put another way, to the point that responds to our experiences and so-influenced expectations of the emergent materiality -- the emphasis on experience rather than stuff; yet another variation, perhaps the most far-reaching one, on the theme of earlier dematerialization. As such, it creates a bridge to connect dematerialization with what we have called its attendant figure, disembodiment or discarnality. It becomes apparent with increasing clarity that experience is at the base of our technological and artefactual enterprise. The domain of the quotidian provides us with a foreground for the increasingly complex material infrastructure that supports it. *Experience*, if the current research on the meaning of consumer goods and services has anything to report on the trends, is now the chief benefit that producers and distributors of goods and services can offer[233].

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[231]Eric Norden. "Marshall McLuhan: A Candid Conversation with the High Priest of Popcult and Metaphysician of Media." *Playboy*, March 1969, 53, p. 66.

[232]Students of McLuhan could do far worse than accord two careful readings of Marchand's biography. While not an exhaustive intellectual biography, it is certainly an achievement and a significant contribution to any further discussion of McLuhan's work. For an exemplar of McLuhan on TV, see Philip Marchand. *Marshall McLuhan: The Medium and the Messenger.* (Toronto: Random, House, 1989), p. 238.

[233]Csikszentmihalyi and Rocheberg-Halton reported on the study of which things mattered to people. The study, conducted in Chicago and reported along with research protocols, found that next to personal photographs, people most cherished interactive objects -- those which accorded the largest amount of favoured experience. Mihalyi Csikszentmihalyi and Eugene Rochberg-Halton. *The Meaning of Things:*

If we have telegnosis and telematics, then why not telepresence? McLuhan had already noted that when one was "on the air" or "on the phone" one was disembodied -- "the sender is sent." Our emergent materiality does promise telepresence -- and it has made this promise since time immemorial. Mind altering substances mentioned above, illustrations of various kinds, the act of reading and writing, photography, video are all meant to bring some experience to the subject, and the subject to the experience. The telepresence promised now, and already available through the bedroom extension phone, is in the interactive here-and-now of the real-time paramount reality. Globally available teleconferencing makes this even more imaginable. Developments in virtualics could turn this into a real "mind trip."

The curious implications of disembodied consciousness in real-time at great or even near distance, were both congenial to the "Pentecostal" state articulated in the *Playboy* interview, and they were a dark glimmer of a potential apocalypse. In a letter to then Prime Minister of Canada, Pierre Eliot Trudeau, McLuhan writes that electric communication is simultaneous and confers autonomy on every part of the structure. He continues:

Domestic Symbols and the Self. (Cambridge, Mss: University of Chicago Press, 1981), pp. 243-44. See also Dean MacCannell. *The Tourist: A New Theory of the Leisure Class.* (New York: Schocken, 1976), pp. 17-23. With respect to the interactive object -- Lingis' re-reading of Aristotle sets out the parameters -- a fortiori in the context of the "replicant/android" to be discussed below -- for the animated thing as an "other." He writes:

> To recognize the another is to begin something with him – an exchange of words, goods, kinship. It is to see the other as a sign, to recognize his significance in an economy of products, powers, pleasures.

Alphonso Lingis. *Excesses: Eros and Culture.* (Albany: State University of New York Press, 1983), p. 153. A dynamic bundle at once tool, weapon and toy, come to mind. We will explore this figure further presently. For vectors in literature also see: David Porush. *The Soft Machine: Cybernetic Fiction.* (New York: Methuen, 1985). Another useful, applied discussion in John Chris Jones. "Softecnica." In *Design After Modernism: Beyond the Object,* edited by John Thackara, 216-225. (London: Thames and Hudson, 1988).

> At electronic speed, which is the speed of light, we are disembodied beings. On the phone, or "on the air," we are instantly present, but minus our bodies. Politically, discarnate man may have an image, but not a physical body. There is a corresponding loss of personal identity and responsibility which creates separatism in private life and family life and in all institutional existence[234].

This was consistent with what Marchand suggests was McLuhan's deepening sense that the necessities waiting to be revealed in our new material culture were to be dire. In the late 60s, McLuhan had already made it clear that the new explicit media were altering sense ratios and people's ideas of themselves. From his point of view, when in telepresence people would lose their senses of identities: violence was a way to establish identity. In *War and Peace in the Global Village*, McLuhan played out the tropes and logic of these observations around the events, media images and circumstances of a "nasty little war" in Viet Nam[235]. The discarnatism here was telegnosis, not yet telepresence. The events of the war were impelled by decisions made half a planet away. Telematics were involved, as they are with any weapon system equation between force and weight of impact over distance and time -- much easier to drop napalm than to dispatch a combatant into hand-to-hand combat. The discarnatism that McLuhan anticipated in the 70s, was an amplification, and the seed of the end of a fabric that binds people together into a society. Not six months after writing Trudeau, McLuhan wrote then President Jimmy Carter:

> "On the phone," or "on the air" we do not experience our physical bodies. When abstracted from our physical bodies in that way, we cease to relate to "Natural Law" and the consequent sense of morality and social responsibility. The numerous forms of separatism and dropoutism that are experienced in our time may well derive from this discarnate state of electronic man. With special attention to the act of reading the printed word, a key fact would seem to be that the TV watcher makes little or no motor response to the sensory experience. The act of

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[234]Written by McLuhan in February, 1977: Matie Molinaro, Corinne McLuhan, and William Toye, eds. *The Letters of Marshall McLuhan.* (Toronto: Oxford University Press, 1987), p. 528.

[235]Marshall McLuhan. *War and Peace in the Global Village.* (New York: Touchstone, 1968), pp. 97-147.

reading requires a great deal of visual motor energy which has become difficult for the TV generation to perform[236].

McLuhan's own "carnate" flesh had taught him that the sensory activity in various media and in various states of health were qualitatively different. Following the harrowing neurological surgery that set a record for duration of the procedure, McLuhan concluded that the idea of anesthetic was "ack-backwards[237]." The suffering of recovery should be obliterated rather than just the shock of surgical intervention. His journals during the period and immediately following the experience supply evidence of his awareness of the amount of mental and physical energy required to concentrate, write, or read. Troubled by a sickly body over which he fretted from youth onward and then increasingly severe strokes and heart attacks, like Descartes before him, McLuhan knew the body as both most cherished possession and source of suffering. Suffering, for McLuhan the Christian, was part and parcel of a reality far more significant than even the greatest "dis-ease" that could be visited on the flesh in *this life*. For, and this is a *significant* component of the overall McLuhan legacy, McLuhan believed in resurrection of the dead and "life everlasting."

Disembodiment, from a Christian point of view, is an uneasy problematic. God the Father "makes the Word flesh" in the Person of the Son in order to

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[236]Matie Molinaro, Corinne McLuhan, and William Toye, eds. *The Letters of Marshall McLuhan.* (Toronto: Oxford University Press, 1987), p. 531. This theme was to continue to come up. One of his last letters, some six months before the debilitating stroke, was to Claire Luce Booth. Again McLuhan brings up discarnatism, writing that "disembodied man" when on the air is a "figure with out a body. The Cheshire cat in Alice in Wonderland is a kind of parallel to our state." Molinaro, p. 543. In the archived 1978 journal, March 5th, McLuhan noted: "Suddenly saw discarnate man seeks not natural law but 'supernatural law' law via totalitarian state as God."

[237]Marchand reports that, up until then, McLuhan's brain tumor operation was the longest neuro-surgical operation in the history of American medicine lasting from 11:30 AM to 5 the following morning. Philip Marchand. *Marshall McLuhan: The Medium and the Messenger.* (Toronto: Random, House, 1989), pp. 201-2. In his journal for that year, McLuhan notes after the operation: "Ruddy gore -- on the table for 21 hrs."

redeem the flesh from the consequences, the entelechy, of original sin. The fulfillment is life ever lasting *but not* in some ethereal sense, but in embodiment now purified of the corruptions of time and disease. In the Christian doctrine, "Law" is inscribed on the flesh of Adam and Eve even into embodiment and is ever present in suffering, pain, sweat and decrepitude. The "Word made Flesh," redeems this body and leads the dead as resurrected (uniting body and soul) from the clutches of Death: "And Death shall be no more." This mortal flesh, still unredeemed, is the index of morality and promise of its redemption. Precisely its mortality, the knowledge that "this too shall pass," provides the initial fabric that grounds and reinforces the social contract, such as it ever is. We even trace our humanity archeologically through evidence of acts of kindness, care, succor, and mourning or enshrining the dead.

It is because we can suffer and yearn that we may be able to recognize and appreciate it within the primary reality of an Other. By various caresses, pressures and blows we are revealed to ourselves as selves in the world. What then are we to make of telepresence? And further, what are we to make of interactive telepresence where one or more interlocutor is a pure cybernetic construct. If pain and pleasure become a matter of controlling and modulating forms of input, embodied morality (do unto others as you would have done onto you), loses all its grounding. What sort of morality can one demand of things that do not exist at all except for their effects? Which of the Natural Laws does one apply to evaluate the ethics of the "nebulous informatic object" interacting with other "nebulous, protean, informatic objects?"

The community which produces the discourses and applications of virtualics, calls these objects -- representations which "act" as the masks worn

by participants in virtuality environments -- "avatars." An interesting choice of term. In the traditions of the Indian sub-continent, avatars are incarnations of deities into the history of humanity. This theology, in part, allows Hinduism to "appropriate" and "assimilate" other world religions to its own "pantheon[238]." A Nazarene carpenter or an ascetic can be the vehicle which can house a divinity. Christ or Gautama Sidhartha, can all be conceived as divinity made flesh in order to ease the suffering of mortals or make an impact on their affairs "at their level." The language of virtualics loads us into "avatars." But, at the end of the day, can telepresence and disembodiment be satisfactory? We may be able to sense and act at a distance, but will this capacity off-set the "Law" of death. What sort of device is needed for that[239]?

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[238]Such an assimilation is possible because of a fundamental theology built on the idea of re-incarnation (samsara and karma), and divinity which, while seen as a profound and singular totality, is manifest in all things, people, and gods. Houston Smith. *The World's Religions.* 1991 ed. (New York: Harpers, 1958), pp. 13-75; specifically, 59-63; also see Jonah Blank. *Arrow of the Blue-Skinned God: Retracing the Ramayana Through India.* (London: Simon & Schuster, 1993.

[239]An extended trope on this theme is offered in the Appendix.

CHAPTER 8

Needful Things: Coda . . .

People sometimes say I'm brilliant -- but superficial. There's only one alternative: to be profound -- but stupid[240].

I

Building on Innis, among many others, McLuhan presented us with a new "science," a renovated and pared down *organum* in aid of the detached deliberative sound-headed and pragmatic assessment of the potential implications of the "entelechies" in-wrought in our technologies and techniques. McLuhan drafted the rhetorics of the mass media (electronic) revolution to criticize the deep structures (hidden) of the mechanical (print) revolution of the Renaissance. At first he saw in the electronic something potentially spiritual, corporate, congregational, and mystical. Later McLuhan grew pessimistic observing that the advent of the electronic media also brought barbarism and a discarnatism that threatened the psychic and social stability of the species[241]. He saw himself as a preventative physician speaking inoculation: a discourse under the sign of the *caduceus* -- a symbol, worth noting, of both healer (Aesculapius) and rogue-messenger, inventor of writing, most beloved of all the gods and protector of thieves (Hermes).

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[240]Marshall McLuhan reported by Arnold Rockman. "McLuhan." *Daily Star*, February 15 1964.

[241]Kroker provides an insightful re-reading of McLuhan's contribution to thinking about technology in Canada. While his discussion of Innis mainly ignores the Innian contribution to communication studies, and one could pause on Kroker's assertions as to the relationships between the ideas of Nietzsche, Heidegger and Grant, his re-working of McLuhan's ideas on the sensorium is very instructive. See: Arthur Kroker. *Technology and the Canadian Mind: Innis/McLuhan/Grant.* (Montreal: New World Perspectives, 1985), pp. 52-86.

McLuhan believed that the worst effects of any new media innovation were transparent to those who had to suffer them. In a kind of cultural persistence of vision or coma, we imagined that new media left our world unchanged and that behaviours, plans, intentions, expectations which had been good before, continued to obtain under new technological conditions. The consequences of this "blind spot" were social and psychological dis-ease, dislocations and upheavals. Innis had said that someone moving forward should be looking sideways to see what is going on[242] -- McLuhan urged people to at least take their eyes of the rearview mirror (and slow down). He too had a perceptual strategy in mind -- what we have dubbed his "method." The toggling between figures and grounds and tetradic variations were a more systematic stab at a way to "look around."

Like Innis before him, McLuhan took the formal properties of media very seriously. The concrete properties of various media, according to Innis, biased them to either time or space. McLuhan moved the discussion to another level of sophistication by suggesting that the concrete properties of media structured our internal perceptual "machinery," thereby framing the way we see the world and make decisions in it. During the 60s, McLuhan had tried to add to the Innian "time/space" media structure by suggesting that media were also "hot" or "cool." The hot media -- newspaper, film, prose in general -- provided a great deal of information had a different psycho-dynamic effect that cold media. Hot media distanced and accommodated critical separation of subject from mediated object. "Cool media," on the other hand, provided very little

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[242]H. A. Innis. *The Idea File of Harold Adams Innis.* Edited by William Christian. (Toronto: University of Toronto Press, 1980).

information and relied on implication to draw the subject in. The TV and the poem were two examples of the "cool" media that McLuhan gave frequently.

Like other things in the corpus, these categories were not as supple as McLuhan, nor his critics, would have liked. But, again as with other ideas and apperceptions, the categories were provocative and opened a venue for thinking. True enough, Hitler had "worked" on film and radio, but probably would not have on TV. Among the enormity of other factors, the over-blown posing and oratory would have looked as silly as any over-played scene. The road from the stage to the TV screen is much longer than one might think[243]. Additionally, the "cool" metaphor was reinforced by the concrete properties of the glass screen and its cool glow. The effects of the bluish glow of the screen, among others, and at various times in one's life, can be "mesmerizing." The Narcissus narcosis of the gadget lover was not limited to just the visual sense -- though the optic was central to the shape our civilization had assumed.

Against the flood of cold media images McLuhan posited the tetrad. This set of four questions -- what is extended, obsolesced, recovered, and reversed by any innovation? -- was mounted to prevent us from imploding into our media and to sustain sufficient critical distance to preserve the sense of balance that Innis argued was necessary for an enduring and healthful society[244]. McLuhan's own work -- which had begun with cultivations of the word (written and spoken) took him into the electronic media and beyond into the tactile

[243]This is only meant to underscore the qualitative differences of stage performance done in "larger than life" gestures as opposed to the "underplay" required for television or more sophisticated radio presentation. There is also a qualitatively different experience inherent in going to live theatre, to a film, and TV in one's home, den or bedroom.
[244]Harold Innis. *The Bias of Communication.* 1991 ed. (Toronto: University of Toronto Press, 1952), p. 139.

sense not only of the TV screen but to the "mechanical bride," and from her matrix, to much of our contemporary material culture -- was meant to inoculate. Little wonder then that there are matters missing and some things unsaid and unthought amid things spoken and thought.

Whether further research on the McLuhan corpus will contribute to a fuller- blown method of "pre-science," remains a question for descendants. Eric McLuhan is firm that his father never saw himself as a prognosticator of the future -- only of the present[245]. The business of the present, said McLuhan, was to be as dangerous, even more dangerous than the future, because it was in the present that the world happened. And, in some deeper sense, the future had already been before us, because we had been there before by way of *recorso* -- the young face of the future had always had older, if re-invigorated, eyes. The final synthesis, the deceptive simplicity of the tetrads and torturousness of the "Laws," was/were to aid in apperceiving *in simultaneity* the work of the past on us even as we shape the future. Theoretically a tall order, and it will take some significant intellectual archeology to convincingly demonstrate a rigour, logic and system in the McLuhan method -- an archaeology beyond our ambitions and means.

Such a system would have to include the insights of the 60s and the larger structure that was to emerge as the "Laws." Given that McLuhan had believed that the insights which provided the substance of the matters to be reported in the posthumous publications as the culmination -- the final synthesis -- of his work, the integration of the insights of the 60s should support and

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[245]Daniel Beer. *Understanding McLuhan: A cd-rom on the ideas and life of media guru Marshall McLuhan*, edited by Paul Benedetti. (Irvington, New York: Southam Interactive and Voyager, 1995). "On McLuhan: Eric McLuhan."

sharpen the applicability of the "Method[246]." Then again, maybe not. McLuhan was proceeding by probe. Marchand, McLuhan's biographer, tells us that McLuhan refused to read his own books once published -- McLuhan said so himself to the press on more than one occasion. (On a good day) McLuhan always said that he was quite willing to drop ideas if he was shown to be wrong because he had many more "where those came from[247]."

McLuhan's intent may have been prevention of a media-induced somnambulistic state, his *modus operandi*, however, was the probe and the provocation. The obscurity of some of the corpus is a good thing -- McLuhan's shifting of masks, his feints and dodges, his preposterousness and attitude are all the spiced sauce for an otherwise boring porridge or fare. For there is credit to be had in poetic virtuosity, be it applied to telling the founding myths, explaining a pattern in the consequences of innovations, or selling soap. If anyone knew this, then it was most certainly McLuhan. McLuhan always claimed that his intent was to provoke and more than one critic has discovered the frustrations and invigorating effects of grappling with the "Sage of Wychwood Park."

McLuhan's method, shaped in the whirlwind of technological change that was the 20th century, combined "history as a laboratory," with the evidence of disciplined senses and deliberation of a trained imagination. No doubt, in the

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[246]At minimum this would require a re-reading of McLuhan's "Report on New Media," McLuhan's later notes and coming to terms with the shorthand and "calculus" implied in terms such as LOM, HD, and LOS that appear throughout McLuhan's often gnomic formulaic "percepts." In the archives, Vol. 8, No. 4 two small handwritten sheets, but dated January 18, 1982 [Marchand?, Eric?] lists at least 30. Among these: SISC = structural impact/sensory closure (NOT stimulus-response); C/M - centre/margin -- generally fragmented, visual stress/space; LOS - Law of situation; HD - high definition; V div. - the five divisions of rhetoric; Quid - quest for identity."

[247]Philip Marchand. *Marshall McLuhan: The Medium and the Messenger.* (Toronto: Random, House, 1989), pp. 180-1.

"right hands" we could have a new school of futuristics and tetradology, and money and professional reputations could (can) be made. The McLuhan corpus is just obscure enough to provide a more than fertile ground for interpretation, tribalism, and competing opinion for many years to come. Given the recently re-kindled interest in him by his generation's grandchildren, there is some likelihood that as long as we are grappling with the self-extensions of ourselves into increasingly sophisticated things, Herbert Marshall McLuhan will have something (more) to "say."

II

As we have argued above however, a significant aspect of McLuhan's contribution to media theory may also be found in what he *did not say* but *implied* throughout his work -- what we have explored under the rubric of the "missing matters:" Taxonomics, topographics and psycho-dynamics of material culture as media. While grappling with the explicit media and their historio-socio-rhetorical implications, McLuhan also found himself beginning to elaborate a broader rhetorics of materiality as media. While McLuhan knew that there was more to it than a leap from TV to the tetrad, he did not elaborate on the detail. His oscillation between poetics and perception; metaphor and empiricism, did not leave much room for painstaking scholarship and detail. McLuhan had bigger fish to fry.

As we have seen, material culture played a role in McLuhan's thinking from early on in his career. McLuhan may have begun with the electronic media, but beneath this surface he clearly understood that there was a hidden area that facilitated the media -- this was technology. From his own studies in

rhetoric, McLuhan understood that all artefacts are "utterances." Like it or not, he was working in a unified field of media which had to include the world of day-to-day life and all its myriad objects. While he included them in his own tetradic variations, McLuhan never gave us with a systematic approach to the study of our material culture as media.

Our inquiry in this area of the "unspoken" has supplied us with a number of important tools with which we can return to the McLuhan corpus, and the study of media in general. Particularly important for the study of communication are the connections between McLuhan's ideas and the heritage of the rhetorical tradition[248]. The recognition that things themselves are utterances that simultaneously respond to three interlocked vectors -- the technical, ethical and aesthetic -- must elaborate our critical tool kit. Our preliminary schematics of the topography and taxonomy of material culture helps enrich our understanding of the dynamics within which, and by which, we navigate within this vast "media" ecology.

From our own perspective, the most important part of these explorations lead into the psycho-dynamics and social uses of projective logic, the serial and ensemble-performativity, of things. Close to heart of these matters we have found McLuhan's apperception that objects are vorticies of power that alter **both** users and their contexts. Perhaps, and more even-handedly, McLuhan gave us this perception -- we have seen it in Innis, and are aware that the "votricist" metaphor arrived in McLuhan's language *via* British Literary

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[248]The inheritance is clear on examination of F. R. Leavis and Denys Thompson. *Culture and Environment: The Training of Critical Awareness.* 1959 ed. (London: Chatto and Windus, 1933). Barilli, writing in Italy in the 80s welcomed the return of rhetoric into the human sciences canon. He attributes a significant if not pivotal updating of the rhetorical canon to McLuhan. See: Renato Barilli. *Rhetoric.* Translated by Giuliana Menozzi. (Minneapolis: University of Minnesota Press, 1989), pp. 123-129.

Modernism and the Vorticist discourse within that Modernism -- but it was McLuhan that built a the first blue-print of a method out of it[249]. If things we make and chose thereby acquire the "energy" to transform us, then every move "forward," will render an effect, a chain of interlocutions, suggestions, appresentations, inferrals, actions, transactions and reactions. These chains can be designed, presented, made performative, imposed and subverted[250].

McLuhan believed that entelechy -- the effects of media, actuated and in-wrought; domesticated and wild -- was (were) a force to be reckoned with. From McLuhan's point of view, denial of this fact was also refusal of the possibility of seeing beyond the structuring capacities of the media. As we have argued above, in another reversal, McLuhan adopted "technological determinism" as a way of overcoming it. In effect, recognizing that *a* technological imperative existed, McLuhan developed a prescriptive method in aid of critical analysis and informed pragmatic public deliberation on the future implications of the development of new needful things. Whether he ever made this explicit or not, it is clear from the corpus that the "exigence" to which, and inspite of which, he spoke was our emergent materiality.

Our emergent materiality, the convergence of explicit and implicit media forms, cannot but urge itself on the research-driven imagination of the study of human communication. Never before have we been able build worlds such as our own *except* in imagination. Even though we are puny, and our nuclear arsenals small potatoes compared to what a Krakatoa or a comet can do, we

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[249]See: Richard Cork. "Introduction." In *Vorticism and Its Allies*, 5 - 26. (London: Arts Council of Great Britain, 1974).

[250] In a sense we are here only underscoring the tri-partite sign. See Dean MacCannell and Juliet Flower MacCannell. *The Time of the Sign: A Semiotic Interpretation of Culture.* (Bloomington: Indiana University Press, 1982), pp. 26-27.

have developed simulacra so effective that we might yet see our way to melding our actuation abilities with our imaginative horizons. In the background, ever there, the body will still need to confront the Law (of death) -- and perhaps this need to overcome these "Last Things" will transfigure us and our stuff. Maybe. Maybe not. For we really cannot know where we cannot go -- we only discover by trying to get there. For all we really know we may have arrived at a plateau whence we cannot leave: Not a "bang," but, as Eliot said, "a whimper," against the enormity of an indifferent universe and the final soulessness of our lively stuff.

III

We say "needful things." In our day-to-day transactions with each other and our stuff this formulation conveys the sense that things are fulfillments of needs. Yet, were we to keep our attention on the surface of the words, it appears to be clearly otherwise. The phrase says baldly enough that the **_needfulness resides in things themselves_**. To be sure, the phrase assumes that the things are need-fulfilling, but the tension in the phrase serves as good coinage for where we have arrived and from where we must depart once again.

"Invention is the mother of necessity." This is the most significant insight and the most deeply rooted observation within the discipline that McLuhan helped found -- media and/or communication studies. There is a cocky intelligence in this pronouncement -- not uncommon to the man who said of our emergent materiality and its effects:

It is vital to adopt a posture of arrogant superiority; instead of scurrying off into a corner and wailing about what the media are doing to us, one should charge straight ahead and kick them in the electrodes[251].

There is more than cockiness at work here. There is also a profound insight into the fact that what we produce comes to condition us and that *no chain of development inevitably ends at a happy and permanent closure.* Our solutions to today's problems render the problems for tomorrow's solutions.

Even in McLuhan's lifetime, the changes in technology and consumer goods were awesome. The material culture of his day, could easily been perceived and articulated as either figure of the future, or rich implication of the things to come. Discarnality and dematerialization were already present *via* electronic media and consumer market. The immaterials (virtualics) as well as telematics, telegnosis, telepresence were also "there' -- as they had been in dreams, myths and legends since human antiquity. What was changing was that the visions were producing concrete three-dimensional palpable metaphors at increased pace: the metaphors were "real" as they had real enough effects. So much could be learned from history. History had now produced a material culture which was at once proliferant, pervasive, productive, programmed, performative, permutative, accelerated, intrusive and, apparently containing the promise of increasing semi-autonomy. Most of all, McLuhan had recognized that this new materiality was" fascinating."

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[251]McLuhan, Marshall. "Playboy Interview." *Canadian Journal of Communication* December (1989): 134 - 137., p. 136.

"After three thousand years of explosion, by means of fragmentary and mechanical technologies, the Western world is imploding," McLuhan writes in the introduction to *Understanding Media*. He continues:

> During the mechanical ages we had extended our bodies in space. Today, after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as our planet is concerned. Rapidly, we approach the final phase of the extensions of man -- the technological simulation of consciousness, when the creative process of knowing will be collectively and corporately extended to the whole of human society, much as we have already extended our senses and our nerves by various media. Whether the extension of consciousness, so long sought by advertisers for specific products, will be a "good thing" is a question that admits of a wide solution[252].

This begs the question -- did McLuhan fetishize technology? Throughout this discussion I have remained silent on this topic, and it is too late to start now. But I can offer one note. If, by fetishism, we mean the ascription of power to objects or their apprehension, then to be sure, McLuhan fetishized materiality. No more so then an art historian, a plumber, a potter, a weaver, an economist, or someone contemplating the satisfactions and subtle nuances of good dark chocolate during a "craving." McLuhan, no more than a man eyeing the gibbet from which he is about to hang, or the images of cancerous cells that are destroying him, "fetishized" materiality. As a pointed aside, there seems to be no biographical evidence to support suggesting that McLuhan suffered from a sexual pathology which required certain objects for the consummation of a sexual act.

McLuhan disliked change. And if his biographer is telling us the truth, clearly McLuhan was both a techno-peasant and techno-phobe, hardly a fetishist. From our informed, if guarded, perspective, McLuhan was a *qualified* and

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[252]Marshall McLuhan. *Understanding Media: The Extensions of Man.* (New York, 1964), pp. 3-4.

sometimes "technological determinist," If the literature and record tell us anything, then we can safely say that McLuhan saw unhappy consequences in the proliferation of our stuff. But even as we end, we remind ourselves, that it was also McLuhan who said repeatedly that ***nothing need necessarily happen if people remain awake.***

McLuhan left us with a challenging task. On the one hand he suggested that we must work out in detail what the effects of our new media and technologies will be -- what will entelechies of the relationships between our technologies and the organs, faculties and abilities which they extend. On the other hand, McLuhan's work further expanded our "discipline" of communication and media studies. My reading of McLuhan considered these two domains, and I freely admit to only having scratched the surface of a complex and insightful corpus of ideas, precepts and implications. What it does say, in answer to the question "So?" is that we cannot work in our field and continue to ignore McLuhan or let our ideological arguments with him get in the way of critical but resourceful reading of his "method" and his legacy to our field.

Our world is changing. In some ways it is for the good, in some ways for the worse. As our grasp and reach meet each other in scope and energy, in extent and power, we build a world of forces and tempos far greater than any of our ancestors could have aspired to. Our experiments in space, in technology, even our struggle with the human predicament, take us into what appear to be new and uncharted realms of experience, promise and perhaps threat and potentially dread. We may be courting the consequences our own *hubris*, but we also court the possibility for a transfigured humanity. It is to be hoped that McLuhan's contribution will assist us in producing the ***wisdom*** that will allow us

to side-step *Nemesis* as we plod our way to the "promised land" of the consumer and cybernetic paradise. But we must also pause to remember -- for without memory there is no identity, and perhaps no shield, shelter nor succor should *Nemesis*[253] come home to roost.

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[253]Nemesis: a Greek goddess who measured out to mortals happiness and misery, and visited with losses and suffering all who were blessed with too many gifts of fortune. This is the character in which she appears in the earlier Greek writers; subsequently she was regarded, like the Erinnyes or Furies, as the goddess who punished crimes: "she who cannot be escaped." E. H. Blakeney, ed. *A Smaller Classical Dictionary.* (London: J. M. Dent & Sons, 1910), p. 354. Often Nemesis punished the greatest and probably most delicious, if tragic, of all affronts to the gods -- hubris -- exaggerated and overweening pride or self-confidence.

APPENDIX 1

Discarnatism, Death and Stuff[254]

Consume my heart away; sick with desire
And fastened to a dying animal
It knows not what it is; and gather me
Into the artifice of eternity.

Once out of nature I shall never take
My bodily form from any natural thing,
But such a form as Grecian goldsmiths make
Of hammered gold and gold enameling
To keep a drowsy Emperor awake;
Or set upon a golden bough to sing
To lords and ladies of Byzantium
Of what is past, or passing, or to come[255].

I

The emergence of our lively stuff has also brought us closer than we have ever been to the secret mechanics of life itself. Writing in the late 60s, McLuhan had already suggested that the main stage of human evolutionary curve of our development had entered an extrasomatic stage. Not only have we learned to "splice DNA," and "farm organs," we have rehearsed the creation of life-forms. On the face of it, once one takes an evolutionary approach to our new silicon technologies, it does appear as if they are evolving into multi-cell organisms. And as we insert them into our stuff, material culture turns livelier in new and improved ways. Romanyshyn, among others, has argued that in this we can locate a deep entelechy at work at the heart of what we as a species seem to be doing with our stuff. It is, as if, we are trying to be rid of the body and its conditions and our human predicament and "re-colonizing" our stuff. Ultimately, the material adventure of the West is a flight from death[256].

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[254]On the recommendation of the examining committee, what was the eighth chapter became an appendix.

[255]William Butler Yeats (1865-1939). 1927; In O. B. Hardison Jr. *Disappearing Through the Skylight: Culture and Technology in the Twentieth Century.* (New York: Viking, 1989), pp. 347-8.

[256]For the invention of the body as specimen, that is body as subject of the anatomical gaze see: Robert Romanyshyn. *Technology as Symptom and Dream.* (London: Routledge, 1989), pp. 103-132. The same

In *The Human Condition* Arendt recounts the "tragic" view of life held by the ancient Greeks[257] . Their view of the afterlife was hardly appealing, and the tragedy was that human life was doomed to it from the outset. Yet ironically, immortality was a condition of nature herself -- species unfolded generation into generation but individuals blended into species -- *only* "man," as distinct from the gods and the surrounding world, was finite, *mortal.* The only way that "the one who dies" could attain to immortality was through "works," "words," and "deeds" -- those externalizations to which we have ascribed a thingly nature -- the things that "stay a while." This bid for immortality, and some of the cultural structures that anticipate and support it, form this last excursus in our inventory of our emergent lively stuff. Here we encounter the meeting of our materiality, the "objectivity of things," and the Fact of the human condition, which is, when all is said and done, death: "Law," if you will.

The realization of the bid for immortality is evident in those human works that endure into time and memory immortalizing heroes, builders, leaders and events of the past. As Canetti beautifully demonstrates, the same "noble" bid can be found in the culture of the book[258]. Not everyone can so focus to live an exemplary life, face great circumstances, or write a book. Why not a device for immortality: why not then in the machine, a function, an image, a material permutation? If we are the sex organs of our machines, as McLuhan said, then why not an "eternal life" in/through them? Why not a transfiguration of that material culture and an attendant transmigration of our "souls" into it?

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question, with respect to Descartes, is given a deeper phenomenological treatment by Drew Leder. *The Absent Body.* (Chicago: University of Chicago Press, 1990), pp. 141-8.

[257]Hannah Arendt. *The Human Condition.* (Chicago: University of Chicago Press, 1958), pp. 17-21.

[258]Elias Canetti. *Crowds and Power.* Translated by Carol Stewart. (London: Penguin, 1962), p. 324.

Perhaps no clearer formulations of the role of our new technologies in the dream to escape the putrefaction of the flesh are given than those provided by O. B. Hardison Jr. and R. D. Romanyshyn. The latter is a professor of psychology and practicing clinical psychologist; the former is a professor of humanities. Romanyshyn provides a strong critique of the flight from carnality and flesh. Hardison, on the other hand, embraces the arrival of silicon-entities (a significant species of our lively stuff), as the point of a disappearance and transformation of "man."

Hardison observes that every advance in culture has been an advance in communication. He agrees with "transformation theorists" that advances in communication encourage and facilitate increasingly complex organizations which master and use them. Progress may not be a steadily rising line of ascent, but the rate and pace of development has been quickening. With permutation of new levels of communication performativity, orders of growing complexity and sophistication have also emerged. For Hardison the emergent media -- silicon-based -- indicate an enormous step in the "curvature of evolution."

Silicon "intelligence" follows an evolutionary path that begins with cybernetic machines. Hardison calls these "3D metaphors for our self-awareness[259]," which fascinate us because they resemble us: rather than a mirror of our limbs, this stuff is a mirror of an aspect of our minds[260] Hardison's

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[259]O. B. Hardison Jr. *Disappearing Through the Skylight: Culture and Technology in the Twentieth Century.* (New York: Viking, 1989), pp. 290-2.

[260]In his exploration of auto-amputation and the fascination with self-extensions McLuhan writes "men at once become fascinated by any extensions of themselves in any material other than themselves." See Marshall McLuhan, *Understanding Media: The Extensions of Man.* (New York, 1964), p. 41.

tracery of the trajectory of the evolutionary line of our smart technologies runs from Pascal's computational machine, then to Leibniz and Jaquard's punch-card loom (in the service the diversification of patterned fabric for the "whims" of fashion) through to Babbage's never-realized steam-driven mathematical engines. In each of these cases progress is halting. The vacuum tube adds the impetus, but it is Ares who provides the final push. This is where the progression "takes off" -- impelled by the exigencies of the Second World War.

Colossus was built in 1943 to decipher secret codes. War-effort concentration on improvements led to ENIAC in 1946. Neumann then shaped the next set of developments by proposing that the computer should store data and the instructions on what to do with it. At this point, Hardison observes, the computer ceased resembling a single-celled animal and began to resemble small multi-celled organisms -- a specialization of functions was taking place, or being put into place[261]. This is also the point in the evolution of our material culture that we can begin to talk about an aspect of it as an "entity."

Hardison observes that *what took carbon-based intelligence more than a billion years to achieve, silicon intelligence, through the ministrations of our carbon-based intelligence, has attained in a mere 25 years.* We have accelerated the development. By 1956 cybernetic science was beginning to explore the idea of AI, "artificial intelligence." Silicon technologies were teaching us new things about our intelligence and we were in turn modeling them on it. The major stumbling blocks to the model approximating the original, lay in what is exactly human about us: common sense and the richness of

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[261]O. B. Hardison Jr. *Disappearing Through the Skylight: Culture and Technology in the Twentieth Century.* (New York: Viking, 1989), p. 299.

implication nested in the contextual interplay of any language, i.e. translation. While stumbling blocks existed -- they were just that, "stumbling blocks" on the way to an often implicit aim -- stuff that could do what we do with our heads: play chess, do sophisticated engineering-driven math, remember, visualize and so on.

The decade following McLuhan's death witnessed enormous advances in the evolution of silicon intelligence and entities. The development of parallel processing displaced serial processing and drew a greater approximation between our number-crunching machines and the way we do things with our brains. Sejnowski's self-organizing machine, mentioned previously, implied that the smart machines could be programmed to organize their own functions. Sejnowski also admitted a certain loss of control -- while he had input the principles, the machine itself applied them[262].

The autonomy was further demonstrated in rudimentary form in programs that employed randomness in selection of data to operate with. Computer chips strengthened the evolution of our prosthetics through PIMS -- "programmed and implantable medication systems" -- smart prostheses. Hardison suggests that with the development of PIMS, silicon "entities" were demonstrably developing a deep symbiotic relationship with their carbon-based makers. The major influence on the development of cybertechnology, and the silicon entities implied by it, Hardison argues, was the effort to realize the "metaphor of machine intelligence." Hardison's choice of words is nuanced, for it is not a pursuit of this metaphor, but the "Imperative" that was at issue.

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[262]Ibid., p. 311.

Throughout his inventory of the nature of our culture of the late 20th Century, Hardison is forthright -- the technological imperative is just that, an imperative. He points out how the American automobile design during the 1950s strayed off course; the imperative that was first articulated in the Streamline idiom of the 30s could be delayed, but not put off for good. The Japanese rejected the use of the gun after a brief and brilliant encounter with it, the gun would return to Japanese society. The gun was inevitable because Japan could not keep itself a closed society. It did not take the Japanese long to recover their skills with firearms and demonstrate them in the Russo-Japanese War in 1904, the year my father was born. From Hardison's point of view, it is not a question of the technological imperative, it is a question of technological inevitability. Our diligence as the sex organs of the machines, however, does not go un-rewarded.

Silicon entities, Hardison suggests, are the future of our consciousness: Silicon entities are better suited to survive in space than are we. The human body, Hardison argues, "is the most beautiful machine of all" but our relationship with our human limitations and technological possibilities has "forced" us to invent silicon-atom-based entities; our relationship to them is the relationship between the caterpillar and the butterfly. Humanity is earth-bound, but the silicon entities would be the shimmering gold and silver extensions of our consciousness liberated from the earth and ash to which we must, in the end, return. Voyager, which is just now taking a plaque of species-self-introduction and a full lab out of our solar system, is the first of these new entities, says Hardison. As far as he is concerned, technology does exhibit an "imperative," a forceful and irrefutable entelechy that must be realized. "Silicon

entities" will pursue their own "destiny" and we will witness the "disappearance of man" into his machines.

The disappearance of "man" is not the death of "man." According to Hardison, rather than the death of "man," the implications of the evolution of silicon intelligence and entities, our "animated" stuff, heralds the rebirth of man, an emergence of a new humanity. The theme plays out not that far off the "neo-Pentecostalism" that McLuhan had articulated in the late 60s, but Hardison pushes it further into an incorporate and excorporate conclusion. While McLuhan, following Nietzsche, suggested that we get into what we fear most; Hardison concludes that we get into our technology to escape what we fear most -- our own limitations. We will become part of our machines, and through them we will ascend into a re-embodied immortality. A transfiguration of the species and its stuff. We will disappear into the artifice of eternity.

Hardison provides a compelling image of the new entities -- anthropo-technoid hybrids that will liberate old men from the dying animal to which, in which, they are bound unto death.

> What will those shining constructs of silicon and gold and arsenic and germanium look like as they sail the spaces between worlds? They will be invisible, but we can try to imagine them, even as fish might try to imagine the fishermen on the other side of the mirror that is the water's surface. They will be telepathic since they will hear with antennas. They will communicate in the universal language of 0 and 1, into which they will translate the languages of the five senses and a rainbow of other senses unknown to carbon man. They will not need sound to hear music or light to see beauty. It was only the need to survive on a dangerous planet sculpted by gravity, covered with oxygen and nitrogen, and illuminated by a sun that led carbon creatures to grow feet for walking and ears for hearing and eyes for seeing. These are part of the dying animal to which carbon man is tied. It was only the need to make silicon thought intelligible to creatures who communicated by sounds and images that led to such clumsy devices as cathode ray tubes and printers and voice simulators.

Silicon life will be immortal. The farthest reaches of space will be accessible to it. For silicon beings, 100,000 light-years will be as a day's journey on earth, or, if they wish, as a refreshing sleep from which, when the sensors show the journey is over, they will awaken with no sense of passage of time or -- what is the same thing -- with vision "Of what is past, or passing, or to come[263]."

II

For *anthropos*, "a heart sickened with desire stuck to a dying animal," silicon life will take the "greatness" of our species, the history of our greatest achievements, into the oceans of space; smart stuff in an infinity of nothingness looking for the sex organs of some other smart stuff. Artifice of eternity, lively stuff, the seeming animation of our things -- our reduction of a once sacred, animating, psychological, immaterial soul to the operation of mere stuff and the concomitant transfiguration of our stuff into the erotics of flux, sentience and language[264]. An amazing trajectory followed by a small omnivorous, pack-dwelling, curious little ape.

How can what we are saying or are about to say be considered scholarly or scientific? What we are reporting, if provocative, is still only a report on what has come before. We are reporting on, and working out some of the implications of, both the imagination as externalized in texts and other reports of various kinds, and what the vorticies in our current adventure with materiality suggest. If we can program a door to recognize certain voices and open while eschewing others, if we can record voice and image, if we can remote-sense and telepute, if we can imagine and approximate telepresence, then why not a

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[263]Ibid., p. 348.

[264]Robert Romanyshyn. *Technology as Symptom and Dream*. (London: Routledge, 1989), pp. 225-229.

machine that can house a soul, our soul, our consciousness, our something or other that will make a bid at the immortality of the gods in the face of the enormous indifference of the cosmos? Enormities of technological reasons, to be sure; but there is a compulsion here, an insistence, a tenacity of vision and effort. Technology, rather than a resurrected god, will overcome death? For this is the "last frontier" from "beyond which" no reports reach us and our inquiries and demand for reasons meets with an obdurate silence.

Let us allow ourselves a moment to play out some tropes of this convergence of our insistent technologies and daily life. Insistent technologies have included flight and health[265]. In each case, they have had to do with exceeding the confines of the reach of the body and embodied consciousness and with circumventing or ameliorating the vicissitudes of the human condition - that which persists, which demands, which hurts, enervates, discomfits -- the Law: Illness, age, death. Deep down, materiality is not only a shelter and extension of capabilities, it is also a dream of by-passing the "vale of tears." Hardison's discussion of the silicon-based life is such a plan. Except that with cryogenics, bio-engineering, hacking the DNA code, cloning, robotics, and all that stuff, the fantasy of the "perfect machine," the Galatea[266], not the Golem, beckons even more seductively: The mechanical animal of Dyck's imagination, the "friendly" object.

To be sure, why a Galatea and not a Golem? If the truth be told, it would be "*both/and*," would it not? The leap between either and the mechanical

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[265]Zingrone, Frank. "Laws of Media: The Pentad and Technical Syncretism." *McLuhan Studies: Explorations in Culture and Communication I*, no. 1 (1991): 109-115., p. 112.

[266]By a number of traditions the name of the maiden Pygmalion, king of Cypress, first carved in ivory and then saw transformed into a young woman in answer to his ardent prayer to Aphrodite. This myth became the basis for the popular musical "My Fair Lady."

servant is not all that far. The idea of the mechanical warrior is already assumed in the weapons our species has produced to advance its intra-specific political and economic ends. The "smart" weapons demonstrated by the Americans in the Gulf War were as much a commentary on the projections of the future of war as they were on the projections of the future of the conveniences of daily life. A cyborg army is what the first Chinese emperor imagined that he had himself buried with -- its efficacy was demonstrated when it raised not one clay-molded hand to prevent the sacking of the tomb within two generations of the Emperor's death. But that was way back then, and now we have sophisticated security systems with motion sensors, alarms, all of which could be linked to robotic weapon arrays. It may not look like much, but it could do the job.

The question that lingers is the metaphoric one, a question of the "presentative." Will the same impulse that demanded more bang for the florin in the Renaissance artillery, also push us toward discrete, "multi-celled," intelligent and semi- or fully-autonomous weapon systems that will give effective yet humanoid substance to the Emperor's dream[267]? The ideal future army would still be made up of discrete "shining constructs of silicon and gold and arsenic and germanium," with a lot of teflar, lead, molybdenum and hardened steel thrown in -- a realization of the (heroic) embodied metaphor. One feels like more of a general with tin-soldiers than one does with mute elemental forces[268]. Remote control and remote sensing, telepresence, automation and robotics all

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[267]This is perhaps less "futuristic" than meets the eye. See: Douglas Waller. "Onward Cyber Soldiers." *TIME*, July 21 1995, 31-38., pp. 31-38 and Bridget Mintz Testa. "Creation of the Humanoids." *Popular Mechanics*, July 1995, 39-42..

[268]The predilection for the presentative aspect over the performative is elaborated with respect to wars of the age of Enlightenment. For pre-20th century international weapons control see: Robert L. O'Connell. *Of Arms and Men: A History of War, Weapons, and Aggression.* (New York: Oxford University Press, 1989), pp. 151-160.

suggest that there is still much grist for that mill. But the issue is destruction, warfare, and the denial of life (at least to the machines and men of the Enemy). The other polarity of the continuum, the one that both Hardison and Romanyshyn develop, is the more congenial pole. Rather than silicon entity as foe, or friend against Foe, the concern is with the domesticated machine and silicon entity as friend.

Let us imagine this lively stuff of ours under two guises - as perfect fellow-traveler and as the final, immortal, abode. Both Golem and Galatea on the one hand, and Immortal on the other. And why not a friendly and fulfilling thing? Part of the problem of the human condition is that "hell is living with people." Why not the friendship of an accommodating, congenial thing? An object on/of which, like the volume or equalization, mood and free will could by amplified, attenuated and mixed like the output of a CD player? We can imagine a habitus (a car included) where a friendly program of interface is diffused like a soul in the entire carapace. My room, my bed, my car, my clothes, my craft, my tools and toys, all responding with the same friendly nuanced (aggressive, cloying, seductive -- take your pick) synthetic voice, processing wants, needs and commands into events and realizations - modulating temperature, turning lights on and off, increasing speed, reminding me of appointments, connecting me with cousin Irene half a world away.

Going to yet border of abstraction -- here we encounter the perfect servant or replicant. Besides carrying out commands, we are imagining a "being" capable of the replacement of people (with their inconsistencies)[269].

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[269]Ursula Franklin. *The Real World of Technology, CBC Massey Lectures.* (Montreal: CBC Enterprises, 1990), pp. 30-31.

This scenario begs a series of psychological questions (at minimum, never mind the universe of technical ones). Among such questions is the one about personality: A relationship with a mirror is not very rewarding -- How much of a relationship can one have with, not through, an answering machine? We develop relationships with things because they resist us in certain ways. One thinks of Heidegger's discussion of how it is that things enter our consciousness -- when they break, don't work in the desired application of the moment etc. The textures of performativity of things give them aspects of their "personalities." A thing, bit of lively stuff, that could accompany, accommodate, entertain and enrich in relationships would have to do so with an "attitude" and personality above and beyond mere performances of "utility" functions.

Hardison poses this question when he asks if silicon life can be given human qualities. Among these qualities Hardison lists love and the capacity to procreate but most of all the will to survive, what Hardison calls the "*anatropic knot*". This anatropic knot or "*will to survive*" and by extension the will to protect one's young, Hardison sees as the greatest challenges on the road to silicon intelligence. One is left wondering if there is more to it than just that. For it seems that to begin to approximate the dynamic field which produces human intelligence as opposed to the operation of instinct, a number of other qualities seem to be required if the model realize "Homo Sapiens." Of his projected entities Hardison writes:

> [A] great deal that is important to the spirit of carbon man -- his soaring imagination, his brilliance, his creativity, his capacity for vision -- will probably modeled in silicon before long, at least as time is measured in biological evolution. Many of the undesirable, self-defeating traits will be filtered out[270]."

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[270]O. B. Hardison Jr. *Disappearing Through the Skylight: Culture and Technology in the Twentieth Century.* (New York: Viking, 1989), p. 346.

Given that the new entities will be immortal, one need not look to the

Existentialist equation for generation of meaning -- death is removed as a factor.

Many of the "undesirable, self-defeating traits will be filtered out." No doubt that

is what the monk-editors of the Classical canon in the early Medieval Ages

thought they were doing too. As far as our "soaring imagination, brilliance,

creativity, and capacity for vision," -- one has to assume that a great deal of

memory will be required to run such a program, and here is perhaps the flaw in

Hardison's "immortal machine." Memory, argued Nietzsche, usually comes

from/through experiences of pain[271]. If all sensation is literally a question of

modulation of input, then what place for pain?

In order to have all the good stuff that Hardison imputes to his

"immortals," would they also not have to possess a sense of dignity, a "sense of

face." Yet this dignity is born of life with Others. Life with Others is also the "site"

for the possibility of shame, sorrow and regret. Regret alone, should be a

challenge to keep the technicians of the eternally interactive mausoleum busy

for a generation or two. For the "soaring imagination," the creativity and

capacity for vision, will the immortal not also need to feel the internal

psychological work of desire? Will the thing not have to appreciate the sense of

"lack," or "disgust" with the current arrangements in order to "want" to "negate,"

to do something about them?

Perhaps the immortal is flawed because it is an artefact lacking its ethico-

techni-affective dimension? We may be able to grow human skin in vats and by

injecting human DNA genetically alter and farm pigs for to facilitate easier organ

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[271]See: Friedrich Nietzsche. *On the Genealogy of Morals.* Translated by Walter Kaufmann and R. J. Hollingdale. (New York: Vintage, 1967 (1887)), pp. 84-90.

transplants[272], but can we produce an algorithm for that within the human condition which separates us and our paramount reality from our myths and dreams? How will we teach machines ethics? Can the techni-etho-affective object also know itself as such? How much processing power and memory would be required to digitize and *translate* (at least) the fruits of nearly three generations of Husserlean (and derivative) phenomenology into the substance and tool kit of silicon intelligence?

For the immortal to approximate the maker, would not the machine also need to have the ability to dance and dream? If the question of the anatropic knot is resolved and desire can be manufactured, will it be enough? We have already suggested that there must also be room for dignity, face and regret. What then of the unbounded joyful movement of limbs and corpus in dance? For the Hindu the world is both engendered by the dance of a god, and its very being is *lila* or the "play of the gods." Dance and play: Will the product of reason, bioengineering, algorithm and plastics have the capacity to play? When we say play we can mean either play as associated with childhood, the absorbing seriousness of a child at play, and the playing of musical instruments with compelling feeling.

And laughter? And sorrow? And awe? In short, can we create a machine that can "feel." I do not mean "sense." Feedback loops and auto-monitoring already exist in the lifeworld in both profusion and abundance. My

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[272]As reported in the news media, pigs are now being injected with human DNA to ensure lower rates of organ transplants. See Charles Jennings. "Shape of the Future: Five things that will change your life." *The European: Elan*, 10-16 June 1994, 2-3. *TIME* also reports that "The more scientists learn about why we grow old, the more they believe that life-spans can be prolonged dramatically." The report contains sidebar reports on What's available now (hormones, antioxidents); What's next (cryonics, nanotechnology, DNA therapy) ; and War on Cancer ("the tide starts to turn. . ."). See: Jeffrey Kluger. "Medicine: Can We Stay Young?" *TIME*, November 25 1996, 52-62. and also Reuter. "6 New Organs Keep Man Going." *Province*, 26 June 1994, A 11.

car already lets me know when it is low on gas, when there are potential problems developing with the brakes and when a door is ajar. By "feeling" here I mean "emotion," the rush and gnaw of envy, covetousness, jealousy; the elation of joy? Will my car, at some point, be able to tell me how it feels about the fact of my driving, about my plans to trade it in? Will the device be endowed with the sort of feeling and emotion by means of which we confer meaning onto the myriad forms and events that make up our "world." Which textures will blend in the potential machine's eye of desire for its maker?

These need not be questions as long as the silicon entity provide us with a vicarious immortality -- the sort promised in the crap-shoot of works, words, and deeds. The machine, an it; me an I: Object beheld by subject. But with our increasing appetite for virtualics and experience, why not some way to deny death through a device? Not a sarcophagus, nor a talking tombstone[273] -- not interactive enough. Better a device for the immortality of the individual subjectivity. Dying to escape death? The prospect can be seductive.

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[273]As Gumpert reports:

> A solar powered headstone containing a recording device (for epitaph or words of admonition) and a video display screen on which can be beamed a biographical account, a genealogy and a computerized photograph. What's more, Dilks' Creative Tombstone, Inc., could add such options as sensors to tell when a visitor approaches or the grass needs watering, a nozzle to spray incense and a mechanized arm that emerges to trim the grass. The price is $39,5000 for a vandal-proof headstone covered by bullet-proof glass. . .
> Dilks is already making sure no man will write his epitaph. He is designing a headstone with into about his wife. Sherry, and their four kids and some advice "for my great-great-great-great-grandchildren." It may be worth waiting that long. The message is, "Do what's right, come what may."

"Inventors," People, November 7, 1977, p. 39.; cited in Gary Gumpert. *Talking Tombstones & Other Tales of the Media Age.* (New York: Oxford University Press, 1987), p. 5.

III

Imagine arriving at the point where *the* Piper has to be paid, so to speak. As you lie on your death bed, with consciousness and intellect intact, the rest of you is an aged, wrinkled, dim-eyed, feeble, hapless and helpless and soon a thing given to putrefaction. Your shriveled, bony hand is cradled in the hand of a person at the prime of their life. This person holding your hand is robust and vigorous and there is a curious, friendly, forgiving and encouraging light in their eyes. In the glow of their cheeks, in the tone of the musculature hidden beneath the skin you can feel a disciplined but boundless energy *and* you know that this person is a product of the astonishing technology that your civilization has bequeathed you. You also know that you memories, your personality, your likes and dislikes, your intelligence, have been "down loaded" into this thing that has been cloned from your very flesh. No, it's not your child. None of that baggage of "mommy, daddy and me nor the 3 o' clock in the morning feedings." When the light flickers out in your eyes and you -- your body -- you, the embodied you, dies -- *do you die*? This ever-young thing is probably better at being the best of you than you could have ever been. For one thing, it never gets old and the parts can be replaced at Canadian Tire.

Grand theory as speculative fiction? Neither I'm afraid. All I am doing is reporting some of the features of our emergent materiality and the operation of it as a dynamic within our relatively old imagination (we are a young species). "Replicants", "androids", "C3PO" and "R2D2" may be complete fluff and bosh but they are also insistent technologies for they promise us a control over the world and an access to experiences that we still see as frontiers and challenges before us. I am not suggesting that these things are either good or desirable, I

make no judgment about the imagining, I only report what we see around us delivered through our enormous entertainment industries, popular culture, but with an emphasis on an observation that I borrow from Adrian Forty: that notions reinforce objects and that objects reinforce notions.

The sheer fact that I take the license to play with metaphors within the human sciences that in the past would have belonged in literature or the comparative study of the history of religions and folklores -- transfiguration of materiality, animation of things, lively stuff and objects as vortices -- is supported by the stuff around us in our daily lives. To be sure there are no androids running about (except for TV, CDs and film); at the same time we can extend our limbs and senses, indeed our intelligence into time and space in ways never before possible within the 'paramount reality' or the reality of daily life.

Romanyshyn, in his critique of technology, argues that to attain to our current scientific plateau we have had to remove from ourselves everything that "matters." The Ptolmeic cosmos, centered on the earth, was one of an embodied imagination. To imagine the cosmos as Copernicus did, and Galelio saw, was only possible through a disembodiment -- of the intellect in the former, of the eye in the latter. As we push off into space, we have to wear an elaborate machine of micro-environment to live in conditions absolutely prohibitive to us in our mere embodied state. The evolution of our technology has produced the prosthetized body and its "shadows[274]." The shadows are the historical

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[274]Part of Romanyshyn's thesis is based on his critical analysis of a series of socio-cultural and technologic projections of the body, "extensions," which Romanyshyn calls "the abandoned body and its shadows. His account begins with the "anatomical gaze" and the corpse (1425-1543). This figure is then resurrected as machine (1628) and "re-animated" through discovery of reflex in 1641 and applied through efficiency and motion studies to produce the industrial worker between 1700 and the latter half of the 1800s. The robot then makes an appearance in 1928 (1926 by other accounts) and made ready to depart "all that matters," i.e. carnality and its condition, in 1945 as an astronaut. To this Romanyshyn counterpoises, "below the threshold of remembrance and barrier of repression," the body as symptom, often a woman's

repressed bodies of the burned witch, the mad, the hypnotized body, the diagnosed hysteric, and today the anorexic. But were we to create a device into which to transmigrate our consciousness, then it would not matter. For the "immortal" could be fabricated for any and all conditions, and still leave the implanted rather than in-wrought consciousness only that level of immediacy as the consciousness found desirable or useful. The imaginative trajectory of our lively stuff takes us from soul and body to program and device -- the rest is performativity.

It is perhaps too easy to say that our emergent materiality is both a force for good or ill. It is also too easy to come down heavily on one or another of the two poles in this spectrum. It is certainly too easy, and far too seductive to deny the operations of what appears to be an entelechy within our materiality -- the technological imperative. It is even far too easy to apply the language of fetishism to this permutative, performative, complex network of interconnected things that constitute the micro geography of our civilization (and through their guise as technology extend history even to nature). If anything it seems that the experiment with materialism described by Mukerji as originating with the Renaissance, has rendered a world in which a great many more have more but even more have less. It is a world of immense promise but it is also a world that dangerously advances it is reach through things that may not be entirely within its control.

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body. Along this continuum Romanyshyn poses first the burned witch of the 15th to 18th centuries. In some European social formations, by 1656 this figure is transformed into the imprisoned madman/woman. This legacy then runs to the "mesmerized and hypnotized body of therapy (1778-84). The figure undergoes a further permutation in 1816 in the person of Mary Shelley's Frankenstein's monster. This legacy, argues Romanyshyn, then runs through the diagnosed hysteric of 1888 and down to the anorexic of today. See: Robert Romanyshyn. *Technology as Symptom and Dream.* (London: Routledge, 1989), pp. 133-75. See also a particularly useful and concise discussion of the history of the idea of "man machine" in Aram Vartanian. "Man-Machine from the Greeks to the Computer." In *The Dictionary of the History of Ideas: Studies of Selected Pivotal Ideas*, edited by Philip Wiener, P., 131-146. (New York: Charles Scriber's Sons, 1973).

BIBLIOGRAPHY

"A Little Potential." *The Economist*, November 23 1996, 97-98.

"Adult mammal cloned successfully." *Globe*, February 27 1997.

Allen, James Sloan. *The Romance of Commerce and Culture: Capitalism, Modernism, and the Chicago-Aspen Crusade for Cultural Reform.* Chicago: University of Chicago Press, 1983.

Anderson, Benedict. *Imagined Communities: Reflections on the Origin and Spread of Nationalism.* London: Verso, 1983.

Arendt, Hannah. *The Human Condition.* Chicago: University of Chicago Press, 1958.

Ballard, J. D. "Myths of the Near Future." In *Myths of the Near Future*, 7-43. London: Jonathan Cape, 1982.

Barilli, Renato. *Rhetoric.* Translated by Giuliana Menozzi. Minneapolis: University of Minnesota Press, 1989.

Baritz, Loren. *The Good Life: The Meaning of Success for the American Middle Class.* New York: Harper & Row, 1989.

Barnicoat, John. *Posters: A Concise History.* London: Thames and Hudson, 1972.

Basalla, George. *The Evolution of Technology.* Cambridge: Cambridge University Press, 1988.

Bateson, Gregory. "Experiments in Thinking About Observed Ethnological Material." In *Steps to an Ecology of Mind.* New York: Ballantine, 1972.

Baudrillard, Jean. "Design and Environment, or How Political Economy Escalates into Cyberblitz." In *For a Critique of the Political Economy of the Sign*, 185-203. St. Louis, Mo.: Telos, 1981.

_____. *The Ecstasy of Communication.* Translated by Caroline Schultze. New York: Semiotexte, 1987.

_____. *For a Political Economy of the Sign.* Translated by Charles Levin. St. Louis, Mo.: Telos, 1981.

_____. "Requiem for the Media" in *For a Political Economy of the Sign.* Translated by Charles Levin. St Louis. MO. : 1981.

Bayer, Patricia. *Art Deco Source Book: A Visual Reference to a Decorative Style 1920-40.* London: Quatro, 1988.

Beaune, Jean-Claude. "The Classical Age of Automata: An Impressionistic Survey from the Sixteenth to the Nineteenth Century." In *Fragments for a History of the Human Body: Part One*, edited by Michel Feher, Ramona Naddaff and Nadia Tazi, 430-480. New York: Zone, 1989.

Beer, Daniel. "Understanding McLuhan: A cd-rom on the ideas and life of media guru Marshall McLuhan." Edited by Paul Benedetti. Irvington, New York: Southam Interactive and Voyager, 1995.

Benedetti, Paul and Nancy DeHart, ed. *On McLuhan: Forward Through the Rearview Mirror -- Reflections On and By Marshall McLuhan.* Scarborough: Prentice Hall, 1996.

Beniger, James R. *The Control Revolution: Technological and Economic Origins of the Information Society.* Cambridge, Massachusetts: Harvard University Press, 1986.

Benjamin, Walter. "The Work of Art in the Age of Mass Reproduction." In
    Illuminations. edited by Hannah Arendt, 217-252. New York: Schocken,
    1969.

Berger, John. *Ways of Seeing.* London: BBC & Penguin Books, 1973.

Berman, Marshall. *All That is Solid Melts into Air: The Experience of Modernity.*
    New York: Penguin, 1982.

Blakeney, E. H., ed. *A Smaller Classical Dictionary.* London: J. M. Dent &
    Sons, 1910.

Blank, Jonah. *Arrow of the Blue-Skinned God: Retracing the Ramayana
    Through India.* London: Simon & Schuster, 1993.

Borgmann, Albert. *Technology and the Character of Contemporary Life: A
    Philosophical Study.* Chicago: University of Chicago Press, 1984.

Bourdieu, Pierre. *Distinction: A Social Critique of the Judgement of Taste.*
    Translated by Richard Nice. Cambridge, Mss.: Harvard University Press,
    1984.

Brand, Stewart. *The Media Lab: Inventing the Future at MIT.* New York:
    Penguin, 1987.

Branzi, Andrea. *Learning from Milan: Design and the Second Modernity.*
    Translated by Hew Evans. Cambridge, Mss: University of Chicago
    Press, 1988.

_____. "We Are the Primitives." In *Design Discourse:
    History/Theory/Criticism.* Edited by Victor Margolin, 37 - 42. Chicago:
    University of Chicago Press, 1989.

Buchanan, Richard. "Declaration by Design: Rhetoric, Argument, and
    Demonstration in Design Practice." In *Design Discourse:
    History/Theory/Criticism,* edited by Victor Margolin, 91 -110. Chicago:
    University of Chicago Press, 1989.

Burke, Peter. *Popular Culture in Early Modern Europe.* London: Temple Smith,
    1978.

Bush, Donald. *The Streamlined Decade.* New York: Braziller, 1975.

Caillois, Roger. *Man, Play and Games.* New York: Schocken, 1961.

Campbell, Joseph, and Henry Morton Robinson. *A Skeleton Key to Finnegan's
    Wake: Joyce's Masterwork Analyzed.* New York: Penguin, 1944.

Canetti, Elias. *Crowds and Power.* Translated by Carol Stewart. London:
    Penguin, 1962.

Caplan, Ralph. *By Design: Why there are no locks on the bathroom doors in
    the Hotel Louis XIV and other object lessons.* New York: McGraw-Hill,
    1982.

Carey, James, W. "Mass Communication Research and Cultural Studies: An
    American View." In *Mass Communication and Society,* edited by J
    Curran, Michael Gurevitch and Janet Woollacott, 409-439. Beverly Hills:
    Sage, 1977.

Carpenter, Edmund. *Oh, What A Blow That Phantom Gave Me!* Toronto:
    Bantam, 1974.

_____. "Remembering Explorations." *Canadian Notes and
    Queries* 46, no. Spring (1992): 3-13.

_____. *They Became What They Beheld.* New York: Ballantine,
    1970.

Carpenter, Thomas. *Inventors: Profiles in Canadian Genius* Camden, Ont.: Camden House, 1990.

"Computers = *more* paper." *Province*, August 18 1994, A 36.

Cork, Richard. "Introduction." In *Vorticism and Its Allies*, 5 - 26. London: Arts Council of Great Britain, 1974.

Couliano, Ioan, P. *Eros and Magic in The Renaissance*. Translated by Margaret Cook. Chicago: University of Chicago Press, 1987.

Csikszentmihalyi, Mihalyi and Eugene Rochberg-Halton. *The Meaning of Things: Domestic Symbols and the Self*. Cambridge, Mss: University of Chicago Press, 1981.

Czitrom, Daniel J. *Media and the American Mind: From Morse to McLuhan*. Chapel Hill: University of North Carolina Press, 1982.

Diani, Marco. "The Social Design of Office Automation." In *Design Discourse: History/Theory/Criticism*, edited by Victor Margolin, 67 - 76. Chicago: University of Chicago Press, 1989.

Dick, Philip K. *Blade Runner (Do Androids Dream Electric Sheep)*. New York: Ballantine, 1968.

Drexler, Eric K. *Engines of Creation: The Coming Era of Nanotechnology*. New York: Doubleday, 1986.

Eco, Umberto. *The Aesthetics of Chaosmos: The Middle Ages of James Joyce*. Translated by Ellen Estrock. Cambridge, Mss: Harvard University Press, 1989.

Eisenberg, Evan. *The Recording Angel: The Experience of Music from Aristotle to Zappa*. New York: Penguin, 1987.

Eksteins, Modris. *Rites of Spring: The Great War and the Birth of the Modern Age*. London: Bantam Press, 1989.

Eliade, Mircea. *Essential Sacred Writings From Around the World*. San Francisco: Harper, 1967.

_____. *The Forge and the Crucible: The Origins and Structure of Alchemy*. Translated by Stephen Corrin. 2 ed. Chicago: University of Chicago Press, 1962.

Ellis, John. *The Social History of the Machine Gun*. Baltimore: Johns Hopkins University Press, 1975.

Enzensberger, Hans Magnus. The Consciousness Industry: On Literature, Politics and the Media. New York: Seabury Press, 1979.

Ewen, Stuart. *All Consuming Images: the Politics of Style in Contemporary Culture*. New York: Basic Books, 1988.

Ewen, Stuart and Elizabeth Ewen. *Channels of Desire: Mass Images and the Shaping of American Consciousness*. New York: McGraw-Hill, 1982.

Ferebee, Ann. *A History of Design from the Victorian Era to the Present: A Survey of Modern Style in Architecture, Interior Design, Graphic Design and Photography*. New York: Van Nostrand, 1970.

Flink, James J. *Automobile Age*. Cambridge: MIT Press, 1992.

Forty, Adrian. *Objects of Desire: Design and Society from Wedgewood to IBM*. New York: Pantheon, 1986.

Foucault, Michel. "What is Enlightenment?" in *The Foucault Reader*. Ed. Paul Rabinow. pp. 32-49. New York: Pantheon, 1984.

Franklin, Ursula. *The Real World of Technology, CBC Massey Lectures*. Montreal: CBC Enterprises, 1990.

Frye, Northrop. Edited by James Polk. *Divisions on a Ground: Essays on Canadian Culture.* Toronto: Anansi, 1982.

Fussell, Paul. *Wartime: Understanding and Behavior in the Second World War.* New York: Oxford University Press, 1989.

Gadamer, Hans-Georg. *Dialouge and Dialectic: Eight Hermeneutical Studies on Plato.* Translated by P. Christopher Smith. New Haven: Yale University Press, 1980.

Geertz, Clifford. *Local Knowledge: Further Essays in Interpretive Anthropology.* New York: Basic Books, 1983.

Gibson, William. *Neuromancer.* New York: Ace, 1984.

Gideon, Sigfried. *Mechanization Takes Command: A Contribution to Anonymous History.* 1969 ed. New York: Norton, 1948.

Gordon, Anita, and David Suzuki. *It's A Matter of Survival.* Toronto: Stoddard, 1990.

Grant, George. *Technology and Empire.* Toronto: Anansi, 1969.

Grossberg, Lawrence. "MTV: Swinging on the (Postmodern) Star." in *Cultural Politics in Contemporary America* . Edited by Ian Angus and Sut Jhally. New York: Routledge, 1989.

Gumpert, Gary. *Talking Tombstones & Other Tales of the Media Age.* New York: Oxford University Press, 1987.

Hannerz, Ulf. *Exploring the City: Inquiries Toward and Urban Anthropology.* New York: Columbia University Press, 1980.

Hans, James F. *The Play of the World.* Amherst: University of Massachusetts Press, 1981.

Hardison, O.B. Jr. *Disappearing Through the Skylight: Culture and Technology in the Twentieth Century.* New York: Viking, 1989.

Havelock, Eric A. *The Muse Learns to Write: Reflections on Orality and Literacy from Antiquity to the Present.* New Haven: Yale University Press, 1986.

Heidegger, Martin. "Building, Dwelling, Thinking." In *Poetry, Language, Thought,* 143 - 162. New York: Harper Colophon, 1971.

_____. "The Origin of the Work of Art." In *Poetry, Language, Thought,* 15 - 88. New York: Harper Colophon Books, 1971.

_____. "The Thing." In *Poetry, Language, Thought,* 165 - 182. New York: Harper Colophon, 1971.

Heim, Michael. *Electric Language: A Philosophical Study of Word Processing.* New Haven: Yale University Press, 1987.

Herzstein, Robert Edwin. *The War That Hitler Won: The Most Infamous Propaganda Campaign in History.* New York: Putnam's & Sons, 1978.

Heskett, John. *Industrial Design, World of Art.* New York: Oxford University Press, 1980.

Heyer, Paul. *Titanic Legacy: Disaster as Media Event and Myth.* Westport, Connecticut: Praeger, 1995.

Hillier, Bevis. *The Style of the Century: 1900 – 1980.* New York: Dutton, 1983.

Hine, Thomas. *Populuxe.* New York: Knopf, 1987.

Hughes, Robert. *The Shock of the New: The Hundred Year History of Modern Art, Its Dazzling Achievement, Its Fall.* 1991 ed. New York: McGraw Hill, 1976.

Huizinga, Johan. *Homo Ludens: A Study of the Play Element in Culture.* Translator not given. Boston: Beacon Press, 1950.

Hyde, Lewis. *The Gift: Imagination and the Erotic Life of Property.* New York: Random House, 1979.

Ihde, Don. *Existential Technics.* Albany: SUNY Press, 1983.

_____. *Experimental Phenomenology.* New York: Outnam's Sons, 1977.

_____. *Listening and Voice: A Phenomenology of Sound.* Athens, Ohio: Ohio University Press, 1976.

Innis, Harold. *The Bias of Communication.* 1991 ed. Toronto: University of Toronto Press, 1952.

_____. *The Idea File of Harold Adams Innis.* Edited by William Christian. Toronto: University of Toronto Press, 1980.

Jakle, John A. *The Tourist: Travel in Twentieth Century North America.* Lincoln: University of Nebraska Press, 1985.

Jennings, Charles. "Shape of the Future: Five things that will change your life." *The European: Elan,* 10-16 June 1994, 2-3.

Jones, John Chris. "Softecnica." In *Design After Modernism: Beyond the Object,* edited by John Thackara, 216-225. London: Thames and Hudson, 1988.

Kellner, Douglas. *Jean Baudrillard: From Marxism to Postmodernism and Beyond.* Stanford, California: Stanford University Press, 1989.

Kern, Stephen. *The Culture of Time and Space: 1880-1918.* Cambridge Mass: Harvard University Press, 1983.

Kesterton, Michael. "Sheep, Sheep, Sheep." *Globe,* February 25 1997, A i6.

Kluger, Jeffrey. "Medicine: Can We Stay Young?" *TIME,* November 25 1996, 52-62.

Krantz, Michael. "Technology: 64 Bits of Magic." *TIME* 1996, 43.

Kreisberg, Jennifer Cobb. "A Globe, Clothing Itself With a Brain." *Wired,* June 1995, 108 - 113.

Kroker, Arthur. "The Disembodied Eye: Ideology and Power in the Age of Nihilism." *Canadian Journal of Political and Social Theory* 7, no. 1-2 (1983): 194-234.

_____. *Technology and the Canadian Mind: Innis/McLuhan/Grant.* Montreal: New World Perspectives, 1985.

Landa, De. *War in the Age of Intelligent Machines.* New York: Swerve Editions, 1991.

Lanham, Richard A. *The Electronic Word: Democracy, Technology, and the Arts.* Chicago: University of Chicago Press, 1993.

Leavis, F. R., and Denys Thompson. *Culture and Environment: The Training of Critical Awareness.* 1959 ed. London: Chatto and Windus, 1933.

Leder, Drew. *The Absent Body.* Chicago: University of Chicago Press, 1990.

Leiss, William, Stephen Kline, and Sut Jhally. *Social Communication in Advertising: Persons, Products and Images of Well-Being.* 2nd ed. Scarborough, Ont.: Nelson, 1990.

Lingis, Alphonso. *Excesses: Eros and Culture.* Albany: State University of New York Press, 1983.

Logan, Robert K. "The Axiomatics of Innis and McLuhan." *McLuhan Studies* 1, no. 1 (1991): 75-102.

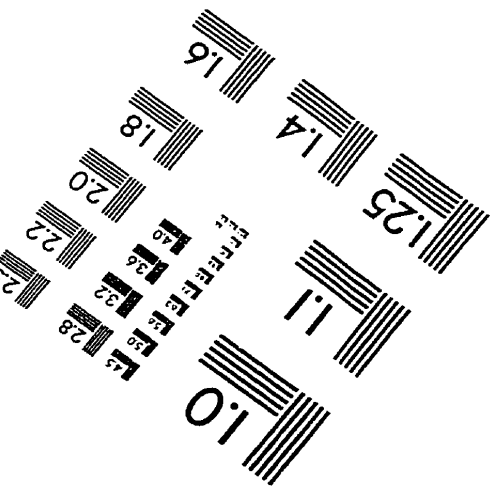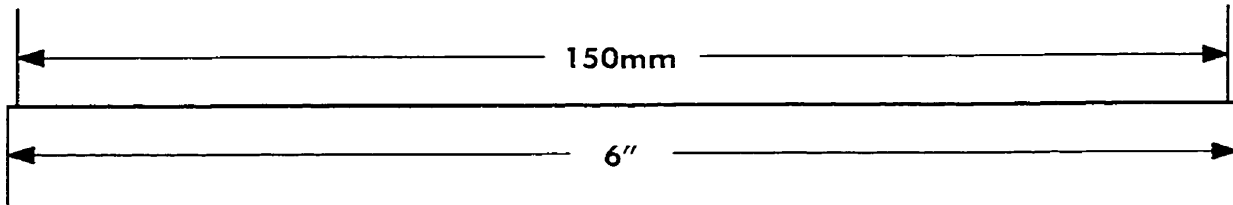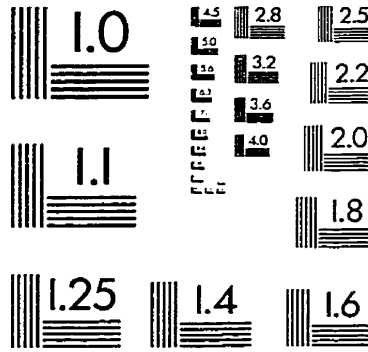Lyotard, Jean Francois. "Les Immateriaux (The Immaterials)." *Art & Text* 17, no. April (1985): 47-57.
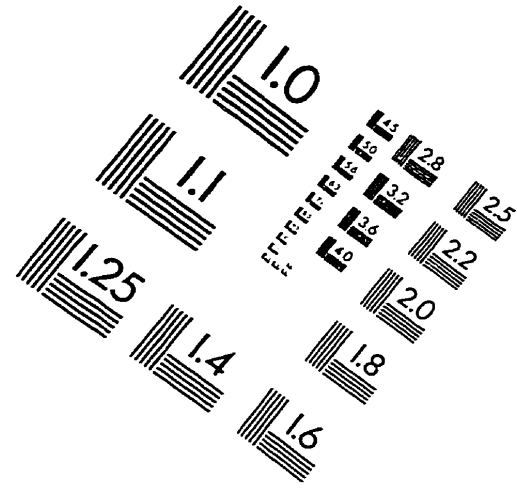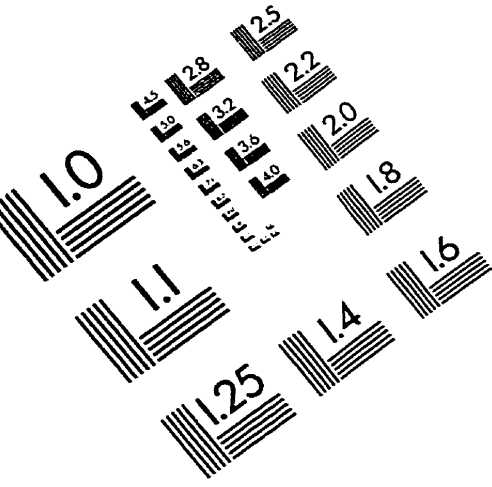
MacCannell, Dean. *The Tourist: A New Theory of the Leisure Class.* New York: Schocken, 1976.

Mallarme, Stephane. *Selected Poetry and Prose.* Edited by Mary Ann Caws. New York: New Directions, 1982.

Manchester, William. *A World Lit Only by Fire: The Medieval Mind and the Renaissance, Portrait of an Age.* Boston: Little, Brown, 1992.

Marchand, Philip. *Marshall McLuhan: The Medium and the Messenger.* Toronto: Random, House, 1989.

Marchand, Roland. *Advertising the American Dream -- Making Way for Modernity 1920 - 1940.* Berkeley: University of California Press, 1985.

Margolin, Victor, ed. *Propaganda: The Art of Persuasion: World War II.* New York: Chelsea House, 1976.

Marvin, Carolyn. *When Old Technologies Were New: Thinking About Communications in the Late 19th Century.* New York: Oxford University Press, 1988.

Mauss, Marcel. *The Gift: Forms and Functions of Exchange in Ancient Societies.* Translated by Ian Cunnison. 1969 ed. London: Cohen and West, 1925.

McCracken, Grant. *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities.* Bloomington: Indiana University Press, 1988.

McKenna, Terence. "Marshall McLuhan: The Cognitive Agent as Cyberpunk Godfather: Reviewing The *Letters of Marshall McLuhan.*" *Mondo 2000* 1988, 48-49.

McLuhan, Marshall. *Gutenberg Galaxy: The Making of Typographic Man.* Toronto: University of Toronto Press, 1962.

_____. *The Mechanical Bride: Folklore of Industrial Man.* 1967: Beacon (Boston) ed. New York: Vangaurd, 1951.

_____. "Playboy Interview." *Canadian Journal of Communication* December (1989): 134 - 137.

_____. *Understanding Media: The Extensions of Man.* New York, 1964.

_____. *War and Peace in the Global Village.* New York: Touchstone, 1968.

_____, and Quentin Fiore. *The Medium is the Massage.* 1989 ed. New York: Simon & Schuster, 1967.

_____, Eric McLuhan, and Kathryn Hutchon. *City as Classroom: Understanding Language and Media.* Agincourt, Ont: Book Society of Canada, 1977.

_____, and Barrington Nevitt. *Take Today: The Executive as Dropout.* Don Mills, Ont: Longman, 1972.

_____, and Wilfred Watson. *From Cliche to Archetype.* New York: Viking, 1970.

_____ and, Harley Parker. *Through the Vanishing Point.* Edited by Ruth Nanda Anshen, *World Perspectives.* New York: Harper & Row, 1968.

_____, and Bruce C. Powers. *The Global Village: Transformations in World Life and the Media in the 21st Century.* New York: Oxford University Press, 1989.

_____, and Eric McLuhan. *Laws of Media: The New Science.* Toronto: University of Toronto Press, 1988.

Megill, Allan. *Prophets of Extremity: Nietzsche, Heidegger, Foucault, Derrida.* Berkeley: University of California Press, 1985.

Meikle, Jeffery, L. "Plastic, Material of a 1,000 Uses." In *Imagining Tomorrow: History, Technology and the American Future*, edited by Joseph J. Corn, 77-96. Cambridge, Mss: MIT Press, 1986.

_____. *Twentieth Century Limited: Industrial Design in America, 1925 – 1939.* Philadelphia: Temple University Press, 1979.

Meyrowitz, Joshua. *No Sense of Place: The Impact of Electronic Media on Social Behaviour.* New York: Oxford University Press, 1984.

Miller, Daniel. *Material Culture and Mass Consumption.* Oxford: Basil Blackwell, 1987.

Mintz Testa, Bridget. "Creation of the Humanoids." *Popular Mechanics*, July 1995, 39-42.

Molinaro, Matie, Corinne McLuhan, and William Toye, eds. *The Letters of Marshall McLuhan.* Toronto: Oxford University Press, 1987.

Mopsik, Charles. "The Body of Engenrderment in the Hebrew Bible, the Rabbinic Tradition and the Kabbalah." In *Fragments for a History of the Body*, edited by Michel Feher, 48-73. New York, 1989.

Morgan, Jas. "Digits Run Riot: Synaesthetic Electronic Technologies." *Mondo 2000*, Summer 1990.

Morgantini, Maurizio. "Man Confronted by the Third Technological Revolution." In *Design Discourse: History/Theory/Criticism*, edited by Victor Margolin, 43 - 47. Chicago: University of Chicago Press, 1989.

Mukerji, Chandra. *From Graven Images: Patterns of Modern Materialism.* New York: Columbia University Press, 1983.

Nevitt, Barrington. *The Communication Ecology: Re-presentation versus Replica.* Toronto: Butterworths, 1982.

Nietzsche, Friedrich. *On the Genealogy of Morals.* Translated by Walter Kaufmann and R. J. Hollingdale. New York: Vintage, 1967 (1887).

_____. *Thus Spake Zarathustra: A Book for Everyone and No One.* Translated by R. J. Hollingdale. Harmondsworth: Penguin, 1961 (1892).

Norden, Eric. "Marshall McLuhan: A Candid Conversation with the High Priest of Popcult and Metaphysician of Media." *Playboy*, March 1969, 53.

O'Connell, Robert L. *Of Arms and Men: A History of War, Weapons, and Aggression.* New York: Oxford University Press, 1989.

O'Neill, John. *Five Bodies: The Human Shape of Modern Society.* Ithaca: Cornell University Press, 1985.

Ong, Walter, J. *Orality and Literacy: The Technologizing of the Word.* London: Methuen, 1982.

Pacey, Arnold. *The Culture of Technology.* Cambridge Mass: MIT Press, 1986.

Petroski, Henry. *To Engineer is Human: The Role of Failure in Successful Design.* New York: St. Martin's Press, 1982.

Porush, David. *The Soft Machine: Cybernetic Fiction.* New York: Methuen, 1985.

Pulos, Arthur J. *American Design Ethic: A History of Industrial Design.* Cambridge, Mass: MIT Press, 1983.

"Robotic lawnmower." *Province*, 15 May 1994, C3.

Rockman, Arnold. "McLuhan." *Daily Star*, February 15 1964.

Romanyshyn, Robert. *Technology as Symptom and Dream*. London: Routledge, 1989.

Ronnell, Avital. *The Telephone Book: Technology, Schizophrenia and Electric Speech*. Lincoln, Nebraska: University of Nebraska Press, 1989.

Rucker, Rudy. *Freeware*. New York: Avon, 1998.

Rybacki, Karyn and Donald Rybacki. *Communication Criticism: Approaches and Genres*. Belmont, CA: Wadsworth, 1991.

Rybczynski, Witold. *Home: A Short History of an Idea*. New York: Penguin, 1986.

Rybczynski, Witold. *Taming the Tiger: The Struggle to Control Technology*. New York: Penguin, 1983.

Sahlins, Marshall. *Culture and Practical Reason*. Chicago: University of Chicago Press, 1976.

Schutz, Alfred. *Collected Papers: The Problem of Social Reality*. III vols. Vol. I. The Hague: Martinus Nijhoff, 1962.

Schwartz, Tony. *The Responsive Chord*. Garden City, New York: Anchor/Doubleday, 1974.

Scitovsky, Tibor. *The Joyless Economy: An Inquiry Into Human Satisfaction and Consumer Dissatisfaction*. Oxford: Oxford University Press, 1976.

Scripps, Howard. "They left footprints on moon." Vancouver: *Province* 17.05.94; A 42.

Segal, Howard P. "The Technological Utopians." In *Imagining Tomorrow: History, Technology and the American Future*, edited by Joseph J. Corn. Cambridge, Mss.: MIT, 1986.

"Six New Organs Keep Man Going." *Province*, 26 June 1994, A 11.

Smith, Houston. *The World's Religions*. 1991 ed. New York: Harpers, 1958.

Sparke, Penny. *Japanese Design*. New York: Dutton, 1987.

"Stonehenge Much Older Than Thought." *Vancouver Province* 1996.

Tuan, Yi-Fu. *Landscapes of Fear*. Minneapolis: University of Minnesota, 1979.

_____. *Passing Strange and Wonderful: Aesthetics, Nature and Culture*. Washington, D.C.: Shearwater Books, 1993.

_____. *Segmented Worlds and Self: Group Life and Individual Consciousness*. Minneapolis: University of Minnesota Press, 1982.

Tucker, Robert C., ed. *The Marx-Engles Reader*. New York: Norton, 1978.

Tufte, Edward R. *Envisioning Information*. Cheshire, Connecticut: Graphics Press, 1990.

Vartanian, Aram. "Man-Machine from the Greeks to the Computer." In *The Dictionary of the History of Ideas: Studies of Selected Pivotal Ideas*, edited by Philip Wiener, P., 131-146. New York: Charles Scriber's Sons, 1973.

Vernant, Jean-Pierre. "Dim Body, Dazzling Body." In *Fragments for a History of the Human Body*, edited by Michel Feher, Ramona Naddaff and Nadia Tazi. New York: Zone, 1989.

Waller, Douglas. "Onward Cyber Soldiers." *TIME*, July 21 1995, 31-38.

Warner, Marina. *Maidens and Monuments: The Allegory of the Female Form*. London: Picador, 1985.

Watson, Lyall. *The Nature of Things: The Secret Life of Inanimate Objects.*
London: Sceptre, 1991.

Whetmore, Edward Jay. *Media America: Form, Content, and Consequence of Mass Communication.* Belmont CA. : Wadsmorth, 1989.

Zingrone, Frank. "Laws of Media: The Pentad and Technical Syncretism."
McLuhan Studies: Explorations in Culture and Communication , no. 1
(1991): 109-115.

IMAGE EVALUATION
TEST TARGET (QA-3)

150mm

6"