TELEMATIC LIFE FORMS

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INTRODUCTION

By "telematics" I mean the combination of computer and telecommunications technology. The development of technology in general and of telematics in particular changes the life forms of human beings, and those of institutions, businesses, and so on, which further change the life forms of human beings. Prima facie, the changes are considerable and I am not suggesting that they should not be taken seriously. I do not want to underplay the changes, but in this paper I will propose, first, that the newness of some changes is exaggerated, and more importantly that there tends to be an overemphasis on the effects on the individual—reasoning as it were within some sort of philosophical anthropology. That is to say, I claim that there is an overemphasis on the effects of telematics on "the" (fragmented) individual—in most contexts an elitist notion (Strauss, 1997), at the expense of effects on human life forms in general.

In this paper I take for granted the notion of "form(s) of life" or "lifeworld(s)" (van Brakel, 1994, 1998). I also take for granted the primacy of manifest life forms over their scientific image (van Brakel, 1997). There are many near verbatim paraphrases in this paper, without quotation marks. They are traceable via references in the text in the relevant paragraphs.

Very briefly, the notion of life form(s) can be elucidated as follows. People understand one another because they share a certain form, pattern, or way of life. Growing up is to grow into a form of life. The form of life is the whole of the moral, social, historical, communicative, mythical, and private discernments and orders which ground these orders, without in turn being grounded in anything else. An explanation of what a form of life is makes no sense. Forms of life are constituted by patterns of human activity which cannot be given a theoretical explanation, because these patterns form the ground on which any explanation or justification rests. Starting from certainties, we can give reasons, but there is an end to giving reasons. The end is what is simply given in the form of life—it is

where my/your/our/their spade is turned. Queries and disputes arise, but only from within the certainties of a form of life. Talking about certainties here does not mean that they form a permanent bedrock, or that such a certainty is forever immune from criticism. Putnam (1987, p. 78) puts it this way: "This is where my spade is turned now. This is where my justifications and explanations stop now."

The use of a term, *viz*. "form of life," does not solve problems of similarity and difference (of universalism and relativism). Is there one form of life or are there many? The mistake is to look for one universal or "true" definition. Both one and many human form(s) of life crop up and disappear. It would be incorrect to talk about many human forms of life, because all have in common that they are human forms of life. But it is also incorrect to talk about one human form of life, because there are many variations without there being one defining core. Form(s) of life, understood interculturally, should be taken, at the same time, as both singular and plural, empirical and transcendental, local and universal (van Brakel, 1998).

THE WEB

I will start with a few comments on Heim's essays in his book, *The Metaphysics of Virtual Reality (*1993*)*. Among commentators, the virtual reality of the web calls up associations with Plato's cave or Leibniz's community of monads. Associations with the monastic, with solitude and isolation, are also called up. In contrast, there is an image of the omniscient system-monad, with power to remove information, relocate it or disconnect the user from the net, in the meantime reading her e-mail. More generally, the telematic life form on the web breaks through borders in the literal, metaphorical, and metaphysical sense. There is a form of personal net-contact that is surrounded with much less hierarchy and formality than one finds in almost any other life form. On the other hand, what is eroded, perhaps, is relations of dependence and recognition. Personal eye contact with other people is no longer self-evident, but is something that depends on a conscious decision. In theory, and often in practice as well, there is never a need to make eye contact with the other people with whom you share a virtual community. Without direct contact with human faces the moral aspect of being human may easily disappear behind the interface. To put it differently, to the degree that the on-line culture grows, the feeling of community diminishes (Heim, 1993, pp. 94-106).

Here are some quotations from Heim's book (pp. xvii, 88, 31, 11, 85):

> We are talking about virtual "reality," not fleeting hallucinations or cheap thrills. We are talking about a profound shift in the layers of human life and thought. We are talking about something metaphysical.
>
> Only a short philosophical step separates the Platonic notion of knowledge from the matrix of cyberspace entities.
>
> Hypertext unsettles the logical tracking of the mind. A hypertext connects things at the speed of a flash of intuition. The interaction of hypertext resembles movement beyond the speed of light.
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> How much can humans change and still remain human as they enter the cyberspace of computerized realities?
>
> The ultimate revenge of the information system comes when the system absorbs the very identity of the human personality, absorbing the opacity of the body, grinding the meat into information, and deriding erotic life by reducing it to a transparent play of puppets.
>
> The computer's allure is more than utilitarian or aesthetic; it is erotic. Our hearts beat in the machines. This is Eros, which in the old Greek sense springs from a feeling of insufficiency or inadequacy.

Heim's worry, whether the human organism will be able to cope with this, has surfaced not only in connection with web identities, but also in connection with non-telematic contacts. Encounters between tourists and natives in exotic places have been described as an encounter with the hyperreal; images of nomads or monads are suggested in which there is contact, but no location (Benedikt, 1991; Borgmann, 1992). Such images might be contrasted with those of traditional cosmopolitans or with the dream time of Australian aboriginals. And as to the question whether the human organism is able to cope with these new identities, it can be contrasted with experiences like that of a slave rowing a ship

in the Mediterrean or transported from West Africa to the Caribbean or of the English sailor who became a slave of a Nootka chief on Vancouver Island, or the two soldiers who were captured during the first Spanish expedition into Mexico.

Heim (1993, p. xv) suggests that hypertexts easily give the illusion of omniscience. But, in contrast, there also is the awe of being swamped by it. Although hypertext offers the ultimate in intertextuality (including eternal interpolation, addition, revision, linkage; so that the notion of original text evaporates), anything like a center has disappeared. The limitless proliferation becomes literally undecidable and even undecipherable. An amorphous mass of web pages looms and the individual gets lost in hyperspace. That is to say, there is tension between two of the characteristics of hypertext (Edwards, 1994). On the one hand, it aims to mirror nature: an old-fashioned semantic associative network is taken to be the essential structure of all human knowledge. On the other hand, the creation and modification of hypertexts are claimed to reflect the cognitive framework of each individual user. Hypertext is then the paramount cognitive vehicle of an enlightened social order. Individual private authority is validated. But what is easily overlooked is that, unbeknownst to itself, this authority must stay within narrow constraints. As Lyotard (1984) has commented: "Along with the hegemony of computers comes a certain logic, and therefore a certain set of prescriptions determining which statements are accepted as 'knowledge' statements." In response, the interactive aspect of the web has been stressed (Beardon, 1994), which would make it different from traditional Artificial Intelligence. In the sense in which hypertext is equally sensitive to the frame problem (van Brakel, 1992), it is more a case of good old-fashioned intelligence than anything new. But Baudrillard (1983), amongst others, has pointed out that this leads to the submergence of self in cyberspace, and requires fusion with a prosthesis. The local form of life is replaced by participation in the ultimate System. Whether the logic that comes with the System is that of traditional Artificial Intelligence is not the issue.

While Heim finds all this very exciting, others contest how these developments should be understood. A simple example is the earlier concept of the electronic cottage or wired society (Gold, 1991; Holcomb, 1991). The advantages of flexibility, less traffic, and so on for working at home are stressed; but so too is the social isolation and diminishing of career opportunities.

Consider also how to evaluate MUDs—Multi User Dungeons (Cooper, 1995). A MUD, because it relies on imagination, is distinct from virtual reality, ordinarily understood. The meaning of "virtual reality" is not that it approaches "real" reality—think of the virtual memory of a computer or talk of the mind as a virtual machine: what is virtual is something that is not really there and not really real (Shippey, 1993). Virtual reality is an image of a real or fictional reality, an image that is stored in the memory of a computer in such a way that it can be used to stimulate the senses (with some delay), suggesting that the image is real. In essence there is nothing else but text scrolling down the screen. But MUDs are dramatically artifactual worlds. Every tree, every house, and every character is entirely created. A MUD world may be seen as a representation of Plato's allegory of the cave: the wizards (who control the MUD) are the equivalents of Platonic guardians. The players discover increasing levels of reality. Reaching these levels often has to do with sophistication of programming techniques, analogous to Plato's requirement of mathematical training. Players of MUDs experience the characters they create as significant extensions of themselves. They come to think of themselves as members of a community, making friends, exploring common causes, and organizing themselves politically and socially, wrestling with a host of surprising issues and feelings. Some people have become addicted to a MUD and live in it, but this is not surprising, advocates of MUD say. Just as with any other toy, casualties can be expected.

On the positive side it has been pointed out that the complete or partial masking of identity in most MUDs is one reason why members of visible minorities are well represented, and this may well be true for the Internet at large. Or one may point out that Baudrillard's worry about the alienating hyperreality of the media which has everybody permanently dealing with simulations, can actually be solved on the web (Cook, 1994). It is neither logically nor humanly impossible that the web will bring (back) a society of symbolic exchange. Perhaps, and perhaps probably, this is not going to happen, but there is nothing of necessity about that. And even if the possibility of a "symbolic turn" is improbable, the web would seem to offer more opportunity for protest than many conventional media.

HYPERSPACE, HYPERREALITY, VIRTUAL REALITY

The term "hyperspace"—primary meaning: many-dimensional space in

mathematics—was introduced to refer to the lived space in postindustrial society, a space fundamentally different from anything previously experienced. Jameson (1991) has famously described the Westin Bonaventure Hotel in Los Angeles as a mutation of the concept of space. The enormous hall of the hotel is filled with glass elevator shafts, fountains, and mirrors; several levels of walk-rounds filled with little shops, fancy restaurants, and scruffy snack bars; apparently haphazardly placed moving and spiral staircases and exits and entries hidden in unexpected dark corners. It is extremely difficult to orientate oneself, even after having stayed there a few days. The architecture transcends the capacity of the human body to localize itself. It does not seem possible to organize the direct surroundings and place oneself in a describable external world. But perhaps at the level of personal bewilderment, such examples are not much different from standard culture shocks, like that of Muslim men from North Africa staying at the court of the French king in the eighteenth century; or the man who was taken from the Highlands of New Guinea and shown round Singapore, replying to the question what he had seen as "a man carrying bananas," referring to an open lorry with bananas. Compare, too, Jameson's critics, who have pointed out that though there may be a postmodern spatial problematic in the hotel, there is no problem locating yourself in relation to the Bonaventure when you stand in east LA and are prohibited, by a class-based planned urban geography, from coming near it without crossing a six lane highway (Davis, 1988).

The notion of hyperspace was further enlarged by applying it to any changes in Western society having to do with the traditional experience and ideas of space, time, and causality.

The process towards hyper- or virtual reality started long ago. An industrial boiler is no longer controlled by the color of flames or sound in steam pipes. The bowels of a 1970s power generating station were already quite superreal. But true hyperreality is less a new reality than a transcendence of an old one in terms of sharpness, richness, and controllability. Look at flight simulators. If you want to become a pilot, you have to learn to take off and land the aeroplane. Without a simulator you will have to do a lot of flying round before mastering the technique. In the simulator, you can land in Kuala Lumpur 10 minutes after you did a successful emergency landing in Cairo. In the ordinary routine of a pilot, flying is, most of the time, a rather boring activity. But in a flight simulator she can try out belly flops and fly with one or two engines

missing, or simply crash the plane, all within the space of a day. Electronics and telematics are the natural allies of hyperreality. In comparison, physics and chemistry are slow and clumsy, but they also contribute to hyperrealities such as cream that tastes like real cream but contains less calories, which does not have to be stirred, which is cheaper than real cream and can be kept longer.

At some level hyperreality is as real as the real one. If one sits in an Antarctics simulator and it is 230 K, then the physical conditions in the simulator are exactly as described: the kinetic energy of the molecules corresponds to that of 230 K. In the flight simulator the triggering of the sense receptors is as real, under their physical description, as those in the ordinary pilot's life. What is really real is not to be decided at the level of physics. But unless one assumes the whole world has been eaten up by virtual reality, the difference remains that one can step out of the simulated realm into something called "reality" (Borgmann, 1992). Borgmann has argued that it is already the case that nothing is left that is not somehow artificial, but this seems to put the emphasis in the wrong place. Nature is itself an artifact of modern life form(s).

The concept of hyper- or virtual reality can also be applied to business. What is a business these days? Is it the building with the people in it? The kinds and quantities of goods that enter and leave it? A down-to-earth business person, confronted with the postmodernist slogan that everything is text, will consider this worse than ridiculous. But look at it this way. The most powerful businesses are the ones that process information, that is, text. Moreover, the activities of all businesses these days are based on which texts come out of computers. This electronic information is, potentially, so rich that it is not an inaccurate picture of what happens in the company, but a real, essential part of the company—one, moreover, that is more transparent and accessible than the messiness of matter and life. Also think of the computer-steered restaurant: no quarrels anymore between kitchen and serving personnel, but only computer texts that steer their actions (and, as the case may be, send them packing). Such a computer can become the local intelligence and take the place of the manager, whereas a higher order computer can decide whether the restaurant has to be renovated or closed down. Such expert systems will not be troubled by human dilemmas or the need of stress management. On the other hand, perhaps there were bureaucratic systems in the past whose effect was not much different.

Telematics reaches its hypermodern exaggeration to the degree that the ordinary senses are eliminated. With the advance of virtuality, the (inter)face physically encroaches on the user, being molded around his or her face, quite literally in the case of head mounted displays. This is a mask that you do not look at, but see through. The machine is no longer a mirror in which you see your own reflection: the reflective screen is replaced by an embracing space and (like Alice) you go through the looking-glass into a strange but believable world (Beardon*et al.*, 1994). In such a world the boundaries between what is ourselves and what is machine are lost. Before we get carried away with hyperbole, though, this should be put in perspective by contrasting it with 15th- century painters. They drew the 15th-century observer into their paintings, too, confronting a person directly with what was depicted.

The appeal to hyperreality may also cover up realities one prefers not to talk about. For example, the Gulf War was said to be hyperreal, primarily occurring in cyberspace (Baudrillard, 1991). But without denying its hyperreal moments or aspects, emphasis should perhaps be placed on the use of mechanisms of hyperreality to conceal some of the real horrors of the event (Robins and Levidow, 1995). Moreover, it is not clear that the Gulf War was more hyperreal (to Iraqi people or the CNN-watcher) than the reality of Cortes's conquering of Mexico was to its inhabitants.

CYBORG, CYBERSPACE, CYBORGHIA

There is no Greek stem "cyber"—cybernetics derives from*kybernetes* (pilot, steersman). But numerous words have been constructed out of this root: cyberbodies, cyberculture, cyberhate, cyberocracy, cyber punk, cyberspace, cyborghia, cyborg anthropology (compare Escobar, 1994, and Downey*et al.*, 1995, with Latour, 1987 and 1993), cyberia, cyborology. (See Featherstone and Burrows, 1996; Holmes, 1997; and Jones, 1997.) The term "cyborg" was perhaps first used in English in 1960 to refer to the enhanced man who could survive in extra-terrestrial environments, but the concept has been around since World War I soldiers were described as "machine-men" and played an enduring role as the "new man" in the history of Weimar culture (Gray, 1993; Levidow and Robins, 1989).

A cyborg is a hybrid creature, part human organism, part machine,

where organism is to be understood in its high-tech guise, not as a human being, but as an information processing and ergonomically controlled worker, desirer, consumer, reproducer. Twentieth century machines differ little from this: they too process information as self-acting ergonomically designed systems; in both cases "ergonomically" means "interfaceable with other cyborgs." One of the first actual beings to be called a cyborg was a white laboratory rat at New York's Rockland State Hospital in the late 1950s. It had a tiny osmotic pump implanted to inject chemicals to alter its physiological parameters (Haraway, 1995). A later example is OncoMouse(tm), a mouse with a genetic disposition for breast cancer, protected by DuPont de Nemours trademark.

The Language of Cyborghia: Modest Witness @ Second Milennium: The FemaleMan (c) Meets OncoMouseTM (see Haraway, 1995 and 1997):

(This is the title of a book [Haraway, 1997] and of a conference paper [Haraway, 1995]; quotations are taken from the latter. I should mention another use of the term "cyberspace," one more related to the earlier concept of virtual reality. Here cyberspace is that space in which a subject sees and experiences his or her own body in a virtual three dimensional space. The technique was first developed to enter a world of giant molecules in order to get a better feel for their internal structure. One can easily think of other applications such as making repairs outside a space shuttle—without having to leave it—or for brain operations using microcameras and microscalpels.)

> The FemaleMan(c) and OncoMouseTM are both creatures of genetic technologies and, along with the Modest Witness, of writing technologies [one, of Science Fiction literary and publishing practices, the other, of laboratory inscription practices]. Within specific narrative fields, and only in such located fields, even if the field domains are globally distributed, the nature of my three figures is to be artifactual, to be substitutes. … Both OncoMouseTM and FemaleMan(c) are unnatural; both form a reevaluation of what may count as nature and artifact, of what histories are inhabited, by whom, and for whom.
>
> OncoMouseTM ["Available to researchers only from DuPont,

> where better things form better living come to *life*"—*Science*, 27 April 1990] is at once an animal model system for a disease, breast cancer, experienced by almost 10% of women in the United States sometime in their lives; a living animal, self-moving in Aristotle's defining sense, fit for the transgenic discourses of rights emerging from green social movements, in which the consequences of the significant exchanges of nature and culture are as evident as they are in patent offices; and an ordinary commodity in the exchange circuits of transnational capital.

Can OncoMouseTM be represented to have any kind of property in the self, and so potentially qualify as the bearer of rights in liberal discourse? Or is the useful little rodent with the talent for breast cancer simply alienable property, a scientific instrument for sale rather like many other laboratory devices, a kind of machine tool for manufacturing other knowledge-building instruments in technoscience?

The term "cyberspace" was invented by William Gibson (1984), author of such science fiction books as *Neuromancer* and *Count Zero*. Cyberspace is a universe created and kept in existence by the computers and telecommunication systems of the world. Its modest beginning is the Web or Internet. In Gibson's cyberspace all humans are connected to the network and all existing knowledge stored in it: each document is available, each recorded or remembered sound can be replayed, and each picture can be projected on the retina screen (Benedikt, 1991, Bukatman, 1993). Moreover, as Huxley (1932) already anticipated, in cyberspace the virtual world of artificial sensory experience will replace the ordinary world which is only full of noise.

Gibson's cyberspace is the latest and final development in human thinking: it is humanity's shared, universal, mental geography. Depending on your philosophical predilections it is the incarnation of Hegel's objective Geist, Popper's World III, the edifice of the Heavenly City, or any *unio mystica*, i.e., any non-discursive space that can be reached or prepared through meditation or contemplation, an archetype that does not belong to anybody but also does belong to everybody (Benedikt, 1991; Mainzer, 1994, pp. 757-764).

Cyberspace becomes a hyperintelligence, an overcaring caretaker, always there fulfilling all desires. Neither the hyperintelligence nor we need move anymore: the only need or desire is to be interfaced. The interface will also see to it that tissues and nerve cells stay alive as long as the caretaker permits. Nietzsche might be quoted here: "The dionysian human possesses the art of communication to the highest degree. He penetrates each skin, each emotion, and transforms himself continuously."

In the cyborg world, the computer and the body become indistinguishable, their discourses merging. Think of mother(boards), mice, apples, clones, viruses, and environments. Equally the distinction between biology and information science is disappearing, with talk of feedback loops, codes, programs. In the cyborg world, these distinctions lose their meaning and biological selves become images of information coded in DNA (Damarin, 1993). The distinction between the production of inorganic, organic, and living goods disappears.

In the cyborg world or cyborghia, the difference between he and she, we and they disappears; it/we/she/he develops itself into an enormous self-preserving amorphous mass-intelligence. The development towards cyborghia makes any distinction between science fiction and social reality an optical illusion. Traditional dichotomies disappear: mind/body, animal/human, organism/machine, public/private, nature/culture, male/female, production/reproduction, instrument/conception, self/other, real/apparent, whole/part, maker/made, active/passive, truth/illusion, right/wrong. It also corresponds with the telematic variant of the move from modernism to postmodernism.

The Move from Modernism to Postmodernism to Cyborghia (see Haraway, 1991, pp. 161ff):

modernism, capitalism	postmodernism, infocracy
closed, purpose, design, hierarchy	open, play, chance, anarchy
mastery, finished work, centred	exhaustion, process, dispersal
distance, cause, determinacy	participation, trace, indeterminacy
semantics, signified, readerly	rhetoric, signifier, writerly
mind, sense, care, perfection	cognition, simulation, optimization

depth, warmth, integrity, bond	surface, boundary, interface, noise
sexual reproduction, "old" eugenics	replication, genetic manipulation
organization, distribution of labor	ergonomics, cybernetics
organism, community, group	biotic component, ecosystem, subsystem
human being, church, virus, the weather, helicopter, …	actor

Everything becomes filaments of the same virtual web. Systems theory, the metaphysics of technocracy, is equally applicable to everything. All persons, texts, objects, ideas, and other things can be taken apart and put together again in new ways. There are no objects, bodies, or spaces that have value in themselves. Instead all are components or subsystems of larger systems, in which they find their uncertain place. Each part can be interfaced with others as soon as the right electronic signal codes and international standards have been fixed. The work place, home, knowledge, market, public arena, literature, the human body—all disappear in a polymorphic mass interfaced through and through. Traditional prejudices and political intuitions all merge into one. Postmodernism and the sociology of knowledge turn out to be branches of cybernetics. The concept of Gaia was not invented by a vegetarian feminist mystic suspicious of the cold war's military-industrial complex and its patriarchal technology, but by a systems engineer gestated in the space program and the multinational energy industry and fed on the heavy brew of cybernetics in the 1950s and 1960s, who made his career as an independent specialist in gas chromatography and inventor of the electron capture detector (Haraway, 1995).

There are different assessments of cyborgs and cyberspace. Though Haraway's (1991) vision is of a cyborg world without gender, Damarin (1993) sees the cyborg world as traditional patriarchy gaining new purchase on the future. Another kind of response is Armstrong's (1994) who looks at it from a Heideggerian perspective. He suggests the global village may be about to relocate. Where to? What are the implications of a relocation for community and its inherent and necessary relations? What would it mean to dwell in cyberspace? Does cyberspace even constitute a place? Will the relocation of community, the transformation of place and dwelling be good?

Views on Cyborgs and Cyberspace:

Morawec (1988):

> Our biological genes, and the flesh and blood bodies they build, will play a rapidly diminishing role. … In the present conditions we are uncomfortable half-breeds, part biology, part culture, with many of our biological traits out of step with the inventions of our minds. … It is easy to imagine thought freed from bondage to a mortal body.

Stonier (1988):

> Machine intelligence will outpace human intelligence and very likely will do so in the lifetime of our children. The mix of advanced machine intelligence with human individual and communal intelligence will create an evolutionary discontinuity as profound as the origin of life. It will presage the end of the human species as we know it.

Damarin (1993; commenting on Morawec and Stonier):

> Pure (masculine) scientific rationality is seen as the essence of "mankind." Therefore, the development of entities which are pure mind, unhindered by biology, is seen not only as desirable but also as necessary to scientific progress. … The postmodern world of these roboticists is one in which mind-body dualism is "solved" by the elimination of the body. … With the ascendancy of robot-man in control of nonsexual robot reproduction, there is no longer any use for women in the patriarchal system.

Armstrong (1994):

> On the Heideggerian picture, the spatiality of a world can only be encountered or discovered through the world itself. If Dasein is essentially spatial, if space itself is revealed only through circumspection of an engaged environment constituent of a world,

> can anything still be revealed spatially in cyberspace? There is no longer a hither, a thither or yon, no longer a place where things are revealed in their environment through a world of concern and circumspection, where spatiality of a thing is itself revealed and something is over there in relation to something right here or something else beyond. What "places" would be left in cyberspace that make up our living space?

Armstrong acknowledges: It is true, the computer as a "place" opens up a space, but it is a space where there are no more things, no more locations to be opened (no matter how many hypertext buttons there are on the screen), no real relations brought forth in a presencing, but merely images and references to locations left behind. However, what is left behind by too much concentration on Heidegger's insights are the social changes advancing in the wake of the telematic changes. It has been said that the danger of virtuality is that we forget its illusory nature and enter a state described as "the generation by models of a real without origin or reality" (Baudrillard, 1983, p. 2). But what about the reply that the origin or reality of these virtual worlds are the women and children in East Asia making the chips on which the models supervene?

Armstrong says: At the portals of our computer screens we have left the earth behind. True this may be, but the 15th-century person confronted in a cathedral by Mary or Jesus has also, temporarily, left the earthly world behind. There have always and everywhere been portals open to another reality. Moreover, it is not self-evident what could and could not be included in the essence of dwelling or Dasein. Why could not visions in *Star Trek*, *Blade Runner*, *Terminator*, the *Alien* triology, *Jurassic Park*, *Total Recall*, *Brainstorm*, be Daseins? The same applies if, for Dasein, one substitutes Husserl's or Habermas's Lebenswelt or Wittgenstein's form of life.

In many discussions it is implicit that cyberspace will take over completely: virtual reality will become the only reality. Philosophically this is not new. If we are all brains-in-a-vat (monads in cyberspace), then the distinction between real and virtual drops out. But if the difference between "real" and "virtual" remains, then the important question is: how does cyberspace change Dasein in the old world?; not: what is Dasein like in cyberspace? Then the question is not, is cyberspace suitable for dwelling?; but: how does cyberspace

affect ordinary dwelling(s)?, where the latter, like Dasein, Lebenswelt, and form of life should be understood interculturally.

The Philosopher's Cyborghia: Brains-in-a-Vat:

> I don't know whether I am a Brain-in-a-Vat or not (i.e., brains without body or skin wired up in such a way that my experiences, memories, etcetera are exactly like the ones I have now). If I don't know whether I am a Brain-in-a-Vat, then I don't know whether I have hands.
>
> I don't know whether I have hands.

Reply (?): Brains-in-a-Vat cannot say or think that they are Brains-in-a-Vat. If there is no causal relation with the world there is no reference. Not even the collective mental states of all Brains-in-a-Vat fixes reference.

Then the general picture presented does not depend on the cyborg development; at best it is an apotheosis of more of the same. The more general point has been documented many times, be it in Habermas's distinction between the Lebenswelt and "the systems," or in the anthropology of science. For example Traweek (1988) describes how high energy physicists construct their world and represent it to themselves as free of their own agency; as "a culture of no culture, which passionately longs for a world without loose ends, without temperament, gender, nationalism, or other sources of disorder—for a world outside human space and time." In cyborghia there is perhaps more room for loose ends, being an inherently chaotic system, than in NASA or high-energy-physics laboratories, or some old-fashioned dictatorship for that matter.

TELEMATIC LIFE FORM(S)

Let us take a step back from the futuristics of cyborghia; how much is already there? Telematics directly affects big social issues like education and democracy. As usual this has had positive and negative responses. Some stress that the classroom computer can be used to provide disempowered children with a more liberating education. Others say such romantic visions are precluded by the unequal access of individuals both to the power of computer use and power over

computer use. A similar debate ensued when it was proposed to put the paperwork of the invisible committology of the European Community on the Web.

Allegedly, the computer and the computer user each does what it does best, as they work together in a powerful symbiotic dyad. But the arrangement of this in business is highly romanticized when it is said that computers will liberate workers from dull and mundane tasks (Damarin, 1993). Similarly, it has been said that higher level employees are increasingly assisted in their work by computer-based AI-expert systems. In response it has been noted that knowledge which was once a personal asset of the worker is encoded now in a data base in the machine. The worker, no longer permitted to speak or act from her or his own expertise, becomes an input/output device, comparable to a digitizing camera, a printer or other computer peripheral. This may be true, but may be equally true for the bureaucracy of the former Soviet Union or the Aztec empire before it was destroyed by Cortes. As Burlow (1991) put it: The world begins one of the greatest migrations in history—the move into cyberspace. There is a new frontier, where not only business will be conducted, but in which communities will in some sense reside. How is the frontier to be settled? Would it be along the familiar historical pattern: "exterminate the natives, secure the resources into corporate possession, establish tariffs, and define culture strictly in terms of economy"?

There can be no doubt that telematics compresses the time-space in which decisions are being made, removing human responsibilities from these decisions, or what perhaps should now simply be called events—in a universe of chance. Because timespace can be rapidly spanned, everything is reduced to here-now. Remember the Wall Street crash of 1929. That was a sluggish affair, developing slowly over weeks and months. Compare Black Monday (19 October 1987), a momentary event, only possible because of the computerization of the London Stock Exchange the year before. Within 24 hours telematically supported trade was many times higher than the gross global product—passing over the virtuality of the latter concept. Ordinary people had little to do with this crisis. This is an example of what has been called the risk society: fragilities over which neither individual, nor group, nor state have any control (Beck, 1992, 1995).

Further, the extreme mobility of capital makes old communities disappear (for example, when a big factory is closed down from one day to the next); and

new work forces emerge, vulnerable at all times, because their existence depends on global developments and chaotic fluctuations caused by telematically steered appearance, disappearance, mergers, and overtakings of businesses or telematically steered *coups d'etat*.

Damarin (1993) and others have pointed out that no matter whether jobs are exported to Third World countries or performed by Chicana women lured to Silicon Valley, they exert control over the lives and subjectivities of the women workers. In their relation to the machine, women in such positions are "wetware," biological material essential to the operation of the hardware and software. Theirs is a postgender world; they are constructed not as social beings but as machine parts which function mechanically. To the extent that individuals still have self-awareness, management seeks to control their self-perception by talking, as the case may be, about the "natural" ability of "Oriental" women's fingers and eyes, or their supreme passivity in withstanding this low-skilled, mind-deadening work (Ong, 1987). But it is not at all obvious what the crucial difference is between this sort of exploitation and that of, say, the male and female workers of all ages in meat factories in Chicago at the close of the 19th century.

What seems to be certain is that globalization processes, supported by telematics, will eventually lead to one universal language. Leibniz, Descartes, and others have thought positively about the one ideal universal language. Others have responded negatively: in the end uniformity and standardization will lead to elimination of all contrast. Combining the idea of a universal language with computers leads to the concept of a language machine, best understood as a Kafkaesque bureaucracy: the language being that of forms which nobody understands, yet how the forms are filled in determines one's life.

In conclusion, the suggestion is that the telematic life form will eventually lead to a hyperintelligence in which what were once called human persons have been reduced to homunculi or nodes in a neural network, a model already used in the philosophy of science to model the scientific community and in technological forecasting to model interactions in the post-industrial life form. This unifying development towards absolute standardization and seamless interfacing of everything with everything else was started many centuries ago with the destruction of life forms in other continents. Even though the number of human casualties may be less (or now found more in the spinoff of high-tech local wars),

languages have been disappearing at an estimated rate of ten per year over the past century.

I suggest therefore that philosophy of technology, examining the developments I have sketched, should address the socio-political ramifications of globalized technology more. It must also look at the impact of the upcoming universal language. It might be a good thing to worry less about "the very identity of the human personality"—a rather parochial concept. The social ramifications for a lifeworld that is both increasingly virtual and also real is more important than indulging in the exoticism of virtual realities.

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