Always two things
switching
Current runs through bodies
and then it doesn’t
It was a language of sounds,
of noise,
of switching,
of signals.

It was the language of the rabbit,
the caribou,
the penguin,
the beaver.

A language of the past.
Current runs through bodies
and then it doesn’t.
On again.
Off again.
Always two things
Switching.
One thing instantly replaces
another.
It was the language
of the Future.
— Laurie Anderson¹

The language of Laurie Anderson’s capitalized Future is a
language of cyborgs with current running through bodies and “always two things switching.” It is, at the same time, a language of the past because the electronic sounds, the noises, the switching and the signals, recall the archaic language of sounds, the primordial sound-signals of the animal world. If one were to experience what Laurie Anderson evokes poetically, one would have to listen simultaneously in the present to the language of the past and to the language of the future. The language of the present would, in other words, condense past, present, and future time. To experience this synchronicity between the “high-tech lingo” of Computerese and the primordial animal sounds one would need a synchronistic sound perception, not unlike the “horizontal hearing” required to understand polyphonic music.\(^2\) One would need a cyborg who has stored the past in her memory in order to display it instantly on the screen of a current experience. A cyborg who, moreover, is able to read the future in the present, to project a holistic notion of a temporal synchronicity of all times, as it could be stored in a computer or in the human brain.

A quarter of a century ago, N. Clyne and M. Klynes published their book *Drugs, Space and Cybernetics. Evolution to Cyborg.*\(^3\) The authors project a utopian cyborg, a product of the technocybernetic evolution of the human organism. Eyes would be improved by implanting optical cells, livers and kidneys activated with technological stimulants, and artificial elements would replace specific parts of the head. The authors fantasize jaws made from “vitallium” containing nylon dentures with plastic teeth. Polyethylene would provide plastic arteries, nylon a new aorta, inorganic joints and hips would be substituted for organic ones. The human skeleton would be supported by an exoskeleton, moved by electromotors — an image that could very easily be taken as a bodily representation of the Lacanian fortress that symbolizes the human ego.\(^4\)

In 1966 the Polish science fiction writer Stanislaw Lem supplemented his *Summa technologiae*\(^5\) with an essay entitled “The Production of Cyborgs.” He outlines a similar scientific project, a reconstruction of man that would allow the human organism to adapt to changing cosmological environments. The reconstructed humanoid, a cybernetic organization, could provide an “ecological shelter” to survive an ecological catastrophe or an atomic war. The elimination of the digestive system, for example, would make jaws, jaw-muscles as well as teeth, superfluous. Solving the problem of communication by way of telecommunication would
Mechanism of the Jacquet-Droz Writer from *Automata* by A. Chapuis and E. Droz, Neuchâtel, 1958, p. 294
ultimately make the mouth dispensable as well. Lem's cyborg, however, still retains a series of biological elements: a skeleton, muscles, skin, and a brain. In contrast to our body's unconscious steering of most of its internal functions, the brain, supported by artificial means, would steer all bodily functions consciously. Osmotic pumps, connected to the body, would provide food, activating substances, medication, hormones, and stimulants. Since the body would continue to have living cells as its basis, the reconstructed parts would, however, not be genetically encoded. A genetically encoded simulacrum of man would require a different project, that of a genetic engineering.

In his novel, *If on a winter's night a traveler*, Italo Calvino has even depicted the postmodern reader as a cyborg:

In New York, in the control room, the reader is soldered to the chair at the wrists, with pressure manometers and a stethoscopic belt, her temples beneath their crown of hair held fast by the serpentine wires of the encephalogram that mark the intensity of her concentration and the frequency of stimuli. All our work depends on the sensitivity of the subject at our disposal for the control tests: and it must, moreover, be a person of strong eyesight and nerves, to be subjected to the uninterrupted reading of novels and variants of novels as they are turned out by the computer. If reading attention reaches certain highs with a certain continuity, the product is viable and can be launched on the market; if attention, on the contrary, relaxes and shifts, the combination is rejected and its elements are broken up and used again in other contexts.¹

This and related thought experiments that fantasize about a technological reconstruction of the human sphere by reconceptualizing body and mind have captured the imagination during the last decades. Moreover, we have come to know similar fantasies in postmodern literature, art, and theory: Beckett's experimental bodies, Pynchon's cybernetic organisms, Laurie Anderson's hi-tech mutants, David Byrne's techno-citizens, and the organless bodies and disjunctive minds in Deleuze and Guattari's *Anti-Oedipus* — to name just a few. Meanwhile these fantasies have also begun to assume more and more reality in our quotidian lives. The United States is the leading country in technologizing and "cybernetifying" the human realm, a process that affects practically all social spheres.

In what follows I will be concerned with the fantasmatic aspects of the technological imagination, that is, with the ways in which it expresses fears and desires that are derived not so much from technology *per se* as from deeper psychic sources. From this
perspective, technology is not viewed in the context of its concrete implications, be they utopian or dystopian. Instead, I hope to shift the focus toward the psychohistorical dynamic that expresses itself in the ways in which technology becomes a field of cathexis, an imaginary screen onto which psychic energies from the most archaic to the most up-to-date may be projected.

The imaginary “cyborgization” starts in infancy with the socialization through television and technological toys. It comes as no surprise that the latter are highly gendered and, to a considerable extent, directed toward boys socializing them into the role of imaginary soldiers, or “Masters of the Universe.” Thus the role and behavior models of American boys are plastic cyborgs, soldiers that transform into guns, cars that convert into robots, voice-transformers that change the human into a robot-voice, or even, as we know from Laurie Anderson, a female into a male voice.

At school, the “magic writing pad,” used by Freud as a metaphor for the unconscious since its wax board contains invisible traces of whatever has been written on its erasable surface, is replaced by hi-tech computer-games which help train various skills without leaving any individual trace on the software memory. Memory, instead of becoming internalized (as, for example, through the memorizing of poems) is rather externalized and stored in the artificial memory of the computer. Children learn, for instance, to write “their own stories” on a computer with “Kidwriter,” a program which provides them with stenciled phrases and prefabricated gaps where they can fill in those phrases that they have semiotically internalized from TV-cartoons and commercials. This fragmentation of the child’s creative imagination is supplemented with fantasms of the fragmented body. “Captain Cosmo,” to choose one of a whole world of imaginary characters, is a plastic figure, whose white and red body can be taken apart and rebuilt in various forms. The children can substitute a leg for the head, an arm for the leg, the head for the arm, and most important, shoot parts of the body off into space. Finally, they can also “transplant” the limbs of fellow-characters into Captain Cosmo’s body in endless variations.

The practice of children acting out fantasms of the fragmented body is, of course, not new and in principle there is no need for a sophisticated technological imagination to engender it. New, however, is the way and the extent to which joint ventures of the toy and media industries increasingly explore, market, and manipulate the imagination of children by exploiting and fashioning such psychic dispositions as the fascination with the fragmented body. The glorification of war and war-like activities, the
paranoid obsession with enemies and invaders, the self-aggrandizing fantasies of dominating other living beings as well as nature, space, time, and mortality are clearly the outstanding features of current models of a boy’s world-making. The imaginary and socially sanctioned cyborgization is, as far as childhood culture is concerned, a predominantly male enterprise in the most traditional sense.

This is clearly demonstrated by a comparison with the equally conventional role models for girls. Mothering as a social institution is reinforced, for example, in the imaginary world of the Cabbage Patch Kids which brought about the 1983 American Cabbage Patch craze, a media-promoted hysteria about imaginary mothering that degenerated into frantic adult consumers mutilating real children while trying to snatch their Cabbage Patch babies from the little girls’ arms.

Perhaps phenomena of postmodern American culture like the Cabbage Patch hysteria indicate a surfacing of the cultural unconscious, a specific dark side of the status of children in this culture. This hypothesis seems to be supported by a reactive phenomenon, namely the parodistic exploitation of the Cabbage Patch hysteria in the production of the so-called “Garbage Pail Kids.” Garbage Pail Kids are pictures of violently attacked or abused cyborg paper dolls. Their market and exchange value among children again reveals a cultural obsession with fantasies of the fragmented body. The Garbage Pail travesties are traded on the margins of commercial toy culture, under the desks of school children, because adults obviously dislike being confronted with the dark side of their culture’s imagination of children. Or, to quote a nine-year-old boy, “Parents and teachers think they’re gross but we think they’re rad.” Garbage Pail Kids come as little square pictures with a certain type of bubble gum. They obviously appeal to children by presenting them with images of sadistic fantasies of the body, while training their cybernetic as well as their semiotic imagination. Most often they are inspired by punning on names, as for example in the case of “Greta Garbage,” “Salvatore Dolly,” “Hy Gene,” or “Frank N. Stein.” Naming becomes an act of aggression, because beneath every “normal” name is a mutilated one. When I interviewed a couple of nine-year-olds about their Garbage Pail craze, one of them said: “They are so creative because you can invent more and more of them and you can tease kids by giving them Garbage Pail names.” These little cyborg horror creatures are all technologically or otherwise mutilated as, for example, Geeky Gary, whose face emerges from hundreds of TV screens like from a whirlpool, or Melba Toast, the bread-shaped roasted boy, who pops out of a toaster, or Frying Bra-in, the kid from jail with his post-Derri-
dean name, who wears a bowl on his head with electrical cords connected to a lever with the sign “full power.” Among the of course less hi-tech girls, we find two black cyborg-doubles, Jean Machine and Iron Jaw Erin, whose iron jaws are full of nails, screws, and nuts. And finally — how could he be missing from this American crew of postmodern kids — there is Adam Bomb, the tough guy with a joy stick and the crucial button he must just have pressed, because pieces of fragmented bodies and severed limbs fly all over the place.

When grown-up, those who enjoyed Cosmo or the Garbage Pail Kids might use their well-trained cybernetic imagination in bioengineering, a field that is at least equally exciting as far as the fantasms of body and mind are concerned. This most important sphere of “cybernation” gradually proceeds toward the willful steering of the evolution of our species along with that of other organisms on this planet. For one interested in the fantastmatic side of genetic engineeering, “clones” provide the best “objects of desire.” Once scientists have become able to read the genetic code, they have also learned how to manipulate it. Thus, they can obtain an optimal definition of the genotype, and even conceive a parthagenetic insemination which would allow them to reproduce endlessly one and the same initial model. The old dream (and fear) of an exact double has become scientifically and technologically feasible. The radical implications of this feasibility reach from the “question of the subject and its boundaries” to that of the existential status of a clone and the ethics of biogenetic doubling. The clone has long become a new mythological figure at the horizon of postmodern imagination. He or she (or do I have to say “it”?) is invested with fantasies of immortality, doubling, endless mirroring, and fantastmatic redefinitions of death. The boundaries between life and death seem shaken or shifted. As Gena Corea has pointed out in The Mother Machine, the fantastmatic interest in the clone can be linked with two archetypal desires: the “patriarchal urge to self-generate” and the “desire to control death.” As far as the fantasm of male parenthood or creation of life is concerned, the clone is a descendant of Frankenstein. The important technological progress lies in the fact that man can virtually produce a replica of himself as well as, ultimately, control who has the right to be born — a new form of eugenics. The two desires of self-generation and immortality are closely linked. By re-producing an identical heir one could, in a way, become one’s own father again and again — eternally.
In reading literature on any of the reproductive technologies, not just cloning, one sees that desire for immortality expressed time and again. The cycle of birth, growth and death in nature, a cycle venerated in the Goddess religion and epitomized by a woman bearing a child is one against which patriarchal man has long railed. He does not want to die. He does not want to return to the dark womb of the earth. The inevitability of his death is an affront to him. He dreams of resisting death by cannibalizing clones or transplanting organs or building himself a body out of rustproof steel, or manipulating cells to stop the aging process. He fantasizes about constructing a steel womb — with a glass porthole to let the light in — for the gestation of his clones. His desire to control birth through the reproductive technologies, then, is also a desire to control death.

The first narrative about a clone that engendered a worldwide discussion was interestingly enough a hybrid between a scientific and a fictional narrative, an undeclared “science fiction” so to speak with a pretense to reality. In His Image (1978), a male technological family romance by David Rorvik (who also wrote another book with the title A Man Becomes a Machine: Evolution to Cyborg) tells the story of Max, a rich elderly businessman desperate for a male heir and his own immortality. He uses a “pretty virgin” to bear his clone. While the fantasy leaves the “boundaries of the subjects,” the father and his son, intact, its implications challenge those very boundaries. Who is the fantasized clone? Is he, for the character Max, a different subject from the original? The dreams of immortality signal that at least fantastically the clone is supposed to be the same. The idea of the “self” is extended beyond the original body and its death into another body and a subsequent life history.

If one generalizes the structure of the fantasm of the clone in connection with certain trends in contemporary science one could see a new order of the whole and its parts emerging, inspired by a kind of holographic model or a holonomy of the subject. This model is paradigmatically represented by the cell, or more precisely, by the fact that every cell in a living organism begins with all the genes necessary for the development of a complete being:

The assumption on which rests the possibility of human cloning is... that the nucleus of every cell of every tissue in our bodies contains within it a full blueprint for the development of the complete organism. It is not just the sperm and egg cells that have these vital genes. No matter how cells have differentiated into specialized organs — eye, liver, fingernail — they all contain the latent potential for reproducing a complete adult.
Most intriguing and therefore a major object for fantasmatic cathexis is the fact that a clone could potentially be produced in any phase of a human being, not only from embryonic tissue. An adult could thus realize his fantasms of immortality by having a clone produced out of his cells.

The most terrifying counterpart of these fantasies of producing endless copies of “oneself” in the form of clones that nourish an illusion of immortality is, of course, the simultaneous self-aggrandizing fantasy that humankind is, for the first time in history, able to destroy all forms of life on this planet. The desire to have power over life and death produces the questionable utopia of nuclear transplantation and artificial reproduction at a time when all life is potentially threatened by nuclear holocaust. The dreams of a technologically induced, artificial immortality complement those nightmares engendered by Star Wars as a military technological program. Omnipotent fantasies of the destruction of our whole planet are the drive underlying this new American Dream — not without, of course, also providing the necessary survival fantasy in form of an “ecological shelter,” the creation of an artificial human biosphere in space, a postmodern ark to preserve the human species and the organic life of this planet in the face of postmodern Apocalypse. This sphere is projected as a closed system destined to outlive the menacing nuclear catastrophe. At the same time it provides, uncannily, the fantasmatic justification for the nuclear holocaust.

Numerous technological or cybernetic fantasies have already assumed political and practical reality, and they, in fact, seem to exceed, at times, whatever can be imagined by the most daring literary imagination. What interests me here is the impact of such “cultural fantasies” on the postmodern imagination in general and especially on the conception and production of a postmodern subjectivity. In literature and art the cyborg is a descendant of the human automaton, also brought into this world in an artificial “birth” fabricated by male technology. While the latter was a product of the mechanical age, the cyborg is a product of the new age of electronic technologies and computers. The human automaton and the cyborg can be seen as collective fantasies used to symbolize a transition in the historical formation of subjectivity. “The human automaton, which symbolized the transition between romantic and modern subjectivity, is replaced by the cyborg which symbolizes the transition between modern and postmodern subjectivity. The human automaton was created as a centered organism and as such served to compensate for the uncontrollable forces of the unconscious at the price of a shift to the inanimate.” The cyborg, on the other hand, is “decentered” in a new way. Its psychological decentered-
ness is supplemented by a social one to the extent to which cyborgs are preprogrammed by transindividual semiotic and cybernetic systems. This programming extends so far as to reach and shape even their fantasmatic desires.

At this point technology and desire interpenetrate. A “Technological Eros” is created and used to transform technology into “second nature.” This transformation is often mediated by technological fantasms of the fragmented body — fantasms which indicate a breakdown of the cultural boundaries of “subjectivity.” The idea of a cybernetic reconstruction of the human organism by far exceeds the futuristic reconception of the human body. It signals how and to what extent the alien bodies of technology have already invaded our minds and taken part in shaping the boundaries of subjectivity. This process involves a good deal of violence against the “old organic body,” and perhaps it is significant that in the United States, where postmodern technology, science, and medicine are most advanced, we also witness an invasion of shared cultural fantasms of fragmented bodies and cybernetic organisms disseminated through the media and the arts.

Postmodern medicine with its spectacular organ transplants engenders proliferating speculations about the physical and metaphysical boundaries of the subject. These speculations have increased dramatically with the first heart transplants, because the heart and the brain have long symbolized the soul and the mind, and seem to contain the “essence” of the subject — be it only fantasmatically. Beginning with the invention of the very first tools, mankind has always used technology to work toward the extension and perfection of the human body. Today, technology has reached a stage in which what started out as a struggle for survival, verges on fantasms of omnipotence and immortality. As early as 1930 Freud discussed the ambivalence of these fantasms of a cyborg:

Man has, as it were, become a kind of prosthetic God. When he puts on his auxiliary organs he is truly magnificent; but those organs have not grown on to him and they still give him much trouble at times.11

The various attempts to “increase man’s likeness to God” (Freud) by technological means always express, among other things, the relationship of a specific culture to death. In his recent article, enigmatically entitled “Freud and the Technical Media: The Road belong Cargo,” Laurence Rickels even goes so
far as to argue that the postmodern technical media hold the place of a missing death cult in our culture. It is not astonishing, then, that heart transplant patients are celebrated in the media as the new stars on the stage of postmodern medicine. Mr. Schroeder and Baby Fay become collective symbols, imaginary characters, that carry a whole nation’s fantasmatic desire to be granted a second life with a new heart. Organ transplants also nourish quite uncanny fantasies of the body surviving one’s own death. In 1985, for example, the New York Times interviewed a woman whose daughter had died in a car accident. This mother confessed how happy she was to see her daughter live on through her eyes, her kidneys, and her liver that had been donated to different human recipients.

The publicity surrounding issues of health and medicine and, as a result, the fantasmatic cathexis of the techno-medical manipulation of the body mark a decisive cultural difference between the Old and the New world. A striking example is the fantasmatic interest within the United States in President Reagan’s cancers of the colon and the nose. The media mimicked the surgical intrusion into the President’s body — displaying his inner organs, the size of his tumors, and the surgical incisions to the public gaze. This was followed by a cathartic reconstruction — the malicious alien cells were located, cut out, and destroyed, the surface of the body restored. After a couple of days, even the President’s nose looked just like before. The fearful fantasies of mutilation and fragmentation were relieved by wishful fantasies of invincibility and technological superiority which had made possible the destruction of the invader, the malignant cancer cells. The publicity surrounding the intrusion into the President’s body and the cutting into his nose represents something important in postmodern American culture. This publicity brings a whole nation close to (if not fantasmatically inside) its President while, at the same time, demonstrating technological control and superiority.

The nose, on the other hand, has always been a favorite organ for fantasmatic cathexis — as we know from literature as well as from Bakhtin’s reflections on carnivalization, and, of course, from Fliess’s famous psychoanalytic “nose-mysticism.” The fantasmatist interest in the nose and its expression in numerous forms of nose-mysticism has been so obsessive that Laurence Sterne could “carnivalize” it in continuous references to and even whole chapters on the nose in Tristram Shandy — only to have his narrator insist ironically on the fact that a nose is a nose is a nose: “For by the word Nose, throughout all this long chapter of noses, and in every other part of my work, where the word Nose occurs — I declare, by that word I mean a nose, and nothing
more or less.” Tristram Shandy’s father, on the other hand, reading Erasmus, tries to study “the mystic and the allegoric sense” and in fact, to “mend the sense” of the nose by scratching the printed word from the page in order to get behind the technology of print to “the real thing.”

There is a long history of cut-off or missing noses from Gogol’s The Nose to Beckett’s The Unnamable, who muses “Why should I have a sex, who have no longer a nose?” Finally there is Woody Allen’s Sleeper, interesting in the context of this paper because this film plays with the fantasy of a biogenetic reconstruction of a president’s body out of his nose. After a bomb attack, all that is left of his fictitious President is his nose. The latter becomes the object of a meeting of bioengineers and medical scientists, who discuss the possibility of reconstructing the President out of the genetic material contained in his nose. By feeding this material into a special computer program containing the complete genetic code of the President, they hope to be able to rebuild the whole from the part. As we have seen earlier, this is not so far fetched, because bioengineers are already able to realize this process with plants and project the same for human beings. Woody Allen carnivalizes this fantasy of reconstructing the whole from a part, which is closely related to that of cloning.

The possibility of the reconstruction of the whole human subject from any one of his or her parts would, as I have said earlier, lead to a “holonomy of the subject,” meant here in the sense of a storage of the complete information of this subject in all of his or her parts — just like the storage of the complete information on a holograph in all of its parts. One could easily imagine techniques for freezing cells that would allow for an eternal storage with the possibility of eternal and multifold revivals of the very same object. The crucial question that remains is whether we would be willing to say that these new objects are still the same “subject.”

The exuberant proliferation of cyborgs in contemporary literature, but also the fantasmatistic interest in cyborgs that we can witness in the most different cultural spheres, gives evidence of a cultural shift of the boundaries between the natural and the technological that already has a deep impact on the human use of body and mind. These fantasies of cyborgs seem to suggest that there is a dimension of postmodern subjectivity which can only be accounted for with categories able to grasp the intrusion of technology into or even the technologizing of body, mind, and “soul.”

In this context the idea of a “holonomy of the subject” merits further consideration. I have so far used it to describe the impact which the “readability” of the genetic code has had on the contemporary imagination of subjectivity, and especially on some
fantasmatic aspects of this imagination. But the idea of a holonomy of the subject also has implications that exceed the realm of the purely imaginary. I would even go so far as to say that the cyborg as a postmodern mythological figure may symbolize a transition to a new notion of the subject that is in a much more general way linked to what I have heuristically called holonomy of the subject. I now want to develop some implications of this idea.

Erwin Schrödinger, in 1943, when he lectured on the readability of the genetic code, introduced the idea of a hieroglyphic writing to describe how the complete potential of the future development of the organism is contained in the chromosomes of a cell. The relation of each cell to the whole organism can, in other words, be compared to the relation of each element of a three-dimensional holographic picture to the whole holograph. The whole can then be reproduced from the part because each cell stores in itself the information for the complete body. Moreover, the holonomy metaphor has recently been used in contemporary brain research to describe the functioning of human memory. If the brain can indeed be compared to a hologram, then the cyborg could be taken as a positive model for a “holonomy of the mind.” He (she) would, then, not only stand for a science fictional utopia (or dystopia) of a technological reconstruction of the human body, but also for a new holistic concept of subjectivity.

Since it is based on a holistic model of thought, the idea of the cyborg as a representation of a holonomy of the subject would feed into a more general paradigm shift induced by the cybernetification of the human realm. This paradigm shift is itself supported by the increasing sophistication and dissemination of computer technologies. Its basic characteristic could be described as a cultural tendency to recuperate holistic perspectives. Theoreticians from different areas of specialization, for example, Marshall McLuhan, André Leroi-Gourhan, David Bohm, Gregory Bateson, and Walter Ong, have all developed some sense of a new holism. More than twenty years ago, Marshall McLuhan argued in *Understanding Media: The Extensions of Man* (1964) that “the electric age is recovering the unity of plastic and iconic space.” Similarly, André Leroi-Gourhan speculated in *Le Geste et la Parole*, which appeared in the same year, that computer technologies might, in the long run, induce a drastic shift in our forms of thinking from print-oriented linearity to screen-oriented simultaneity and multidimensionality. Since the only available model for the required multidimensional thinking is the preverbal ho-
listic perception of the child, Leroi-Gourhan concludes that a reactivation of these primary modes of thinking will be necessary. Walter Ong, in *Orality and Literacy* (1982)\(^2\) thinks along the same lines when he describes the emergence of a “secondary orality” induced by the electronic transformation of verbal expression. He rightly insists, however, on the crucial difference between this new mode and the earlier orality.

This new orality has striking resemblances to the old in its participatory mystique, its fostering of a communal sense, its concentration on the present moment, and even its use of formulas. But it is essentially a more deliberate and self-conscious orality, based permanently on the use of writing and print, which are essential for the manufacture and operation of the equipment and for its use as well.\(^3\)

Here the presentation of subjectivity in contemporary literature becomes relevant. Modern and postmodern literary texts experiment not only with a “new orality” in Ong’s sense but also with holistic perspectives and with new notions of the subject. Marshall McLuhan and Quentin Fiore have, for example, taken Joyce’s *Finnegans Wake* as a paradigm for a new use of writing and print that produces a new orality. And Joyce himself plays throughout his whole text with the idea of a scriptural hologram, the great Letter, which contains the whole text, and which, in turn, contains all other texts and ultimately the whole universe. In a different way, Samuel Beckett plays with cybernetic modes of presentation and communication, and with the notion of closed systems and the entropy of the subject. Thomas Pynchon, on the other hand, displays cyborg-characters whose bodies have been chemically conditioned or technologically reconstructed and whose minds are obsessed with technological myths of transcendence. The literary cyborg is, then, not restricted to the technologizing of the body as we know it from science fiction. S/he is rather a product of a much more generalized “technologizing of the word” (Ong), and particularly of the ways in which writers incorporate contemporary notions of cybernetics or field and systems theories. The literary cyborg could thus be seen as an experimental literary subject under the effects of cybernetics and technology.

In her book *The Cosmic Web. Scientific Field Models and Literary Strategies in the 20th Century*, Katherine Hayles reads contemporary fiction with the premise “that well-known developments in the modern novel are part of a larger paradigm shift within the culture to the field concept.”\(^4\) This premise is crucial, because the various scientific field models are all based on a holistic model
of thought. The problems of a transference of such models to the realm of language, literature, or subjectivity are obvious. Katherine Hayles asks “can the representation of a holistic field be accomplished within the linear flow of words, or is the attempt inherently limited by the fragmentation of the medium?” Hayles interprets some of the experimental forms in postmodern literature in terms of a struggle to reach a holistic perspective through language. The philosophical and epistemological implications of such a perspective require a new concept of both the text and the subject. In this context, the notion of the cyborg gains a dimension that I indicated earlier. The cyborg appears in these experimental literary texts not in his/her fantasmatic function as a postmodern myth of transition, as a “prosthetic God” aiming at omnipotence and immortality. Instead the literary cyborg becomes an imaginary representation of those new concepts of subjectivity that have emerged in contemporary thought at large. The “holonomy of the subject,” metaphorically derived from the holism of a hologram, serves as heuristic model which, apart from postmodern technology, also takes into account the above mentioned general shift of paradigm in contemporary thought toward holistic models.

I would now like to give some special attention to a particular problem: the functioning of memory. Memory seems to be especially affected by the technologically-induced changing of the subject. Memory is thus a crucial issue for the paradigmatic value of the cyborg as a positive model for a changing subjectivity. But how does technology affect memory? Can we, for example, use the relation of the cell to the whole organism, or of parts of the brain to the whole brain, as a model for the cyborg’s mind? How does the metaphor of the “holism of the subject” relate to memory — be it the individual memory or the collective memory that can be linked to the more general paradigm shift referred to earlier? Doubtlessly there is a trend toward the totalization of memory through archives and computer memories. But this leads to an externalization of memory which does not, as such, empower the subject by extending its boundaries. One might even go so far as to consider this externalization of memory a weakening of the subject — a move that would recall Plato’s critique of the technologies of script and writing. Plato argued that these facilitating devices destroy or weaken rather than extend memory understood as a capacity of the subject. There is, of course, also an extension of memory, but it requires a different frame. The storage of memory is indeed increased as far as memory alone is concerned. We then consider the whole system which consists of the individual subject and the external archives at his disposition. Memory seen as a function of the whole system,
subject and archive, can then be extended whereas the memory of the subject considered separately might be impoverished. (Clyne and Klynes's idea of an exoskeleton might be seen as an organic equivalent. While it is supposed to support the body better than the vulnerable human skeleton, it will, in the long run, contribute to the degeneration of the organic skeleton.)

With the facilitating technological means, memory, the storage of knowledge and information has nearly become a cultural obsession. The ultimate aim seems to be to create a new type of “collective memory” which would make it possible for one to gain access to the totality of available knowledge of all times by simply pressing the right buttons of a computer. Jean Baudrillard points to the cultural mania of burying the world in microfilm and archives: “to archive the whole world in order to have it rediscovered by some future civilization — a freezing of total knowledge until its resurrection — a transition of the totality of knowledge as value/sign into immortality.”

This may remind one of the desire to control death and the dream of an artificial immortality which turned out to be so prominent in the fantasmatic cathexis of the cyborg. Can we detect perhaps, as Baudrillard seems to suggest, a similar although displaced motivation behind the technologies we use as double-edged crutches or extensions of our memory? How do these extentions — the computer, the media, the microfilm archives — affect the memory of a culture and the “individual” memories of its subjects? The “immortality” evoked by Baudrillard is based on “dead memory.” How do all those postmodern vaults of dead memories, the archives, in conjunction with the speaking memories of the media build the memories of those who use them as technological extensions? How are processes of cultural memorization determined by the technological memories?

Freud’s “prosthetic man” has found his postmodern version. Technological ghosts hover over our dead bodies: our photographic and filmic reproductions are the media which form the memories of those who survive us, obliterating more and more of the “original image” (as illusory as it may be); but there are also “technological ghosts” like the “dead” but still radiating nuclear reactors with our technological waste, our legacy for future generations. They will contaminate their memory of us, including their genetic memory stored in a mutilated and mutating genetic code. Our materialized and totalized knowledge, storable in the memories of computers, microfilms, and even of the old-fashioned books, will, in the predictable future, be extended to include the “genetic memories” of clones, frozen and preserved
We may thus arrive at “unmournable death.” The “incapacity for mourning” has been analyzed critically by Alexander and Margarete Mitscherlich as an incapacity of the German war generation to deal with the Nazi past and its consequences. In the case of postmodern technologies the incapacity for mourning loses its character of individual repression, rejection, or forgetfulness. The media rather help to establish and maintain a cultural repression in the Freudian sense of a “structural repression.” This is why the modern technical media replace and obliterate collective practices of mourning without providing a substitute for them. The incapacity for mourning has become technologically institutionalized.

But one has again to insist that this repression is not an intrinsic function of the technical media but the result of their specific cultural use. Poets of all time have known how to use the technologies of writing and print against the codifying force inherent in them. As we have seen, some experimental postmodern writers and performance artists have “liberated” the cyborg from his/her original role of a “human individual who has some of its vital bodily processes controlled by cybernetically operated devices.” Instead they explore how cybernetics, that is, the knowledge of control processes in electronic, mechanical, and biological systems, and especially of the flow of information in such systems, affects the semiotic systems. Or, seen from the perspective of the creative process, these artists use the cultural impact of cybernetics and field theories in order to create not only new types of literary subjects but also new types of texts informed by these theories. In a similar way, postmodern media artists can use the flow of information in the media against the grain, for example, against the inherent dynamic of a structural repression of memory.

Throughout the history of film, filmmakers have explored numerous ways in which to represent and reactivate memory and to affect the memory of the spectator. They have, in other words, used specific technologies to extend the memory in more than a simply mechanical way. Interview films like Marcel Ophuls’s *The Sorrow and the Pity* or Claude Lanzmann’s *Shoah*, for example, have self-reflexively used the double-edgedness of technologically reproduced memories and worked with the specific effects an audience experiences when exposed to the recorded memories on the screen of a movie theater. These films have also escaped the “loss of aura” and perhaps one could even go so far as to say that they have recreated an aura allowing thus for the reactiva-
This vision evokes the dark side of a culture of cyborgs. Technology, meant to extend our organs and our senses or even to support our fantasies of immortality and transcendence, seems to threaten what we wanted to preserve by destroying us as the subjects we thought ourselves to be when we took refuge in technological projects and dreams. Is the postmodern transmutation into cyborgs based on an identification with the aggressor? Do we, by internalizing technology, lose ourselves as the “subjects” of our culture? Such a conclusion would conflate the potential of technology with a specific cultural use of it. It is true that the present use of technology in postmodern culture does not allow for a great deal of cultural optimism. The reason for this, however, lies not in technology as such but in the fact that the use of technology follows the overall dynamic of culture and its patterns of “culture contact” (Bateson) which are, at the present moment, to a large extent governed by the concerns of a war culture. This is what Pynchon’s *Gravity’s Rainbow*, for example, shows in connection with the text’s central symbol: the Rocket as a technological myth of transcendence which conceals its destructive functions. For the characters in *Gravity’s Rainbow*, this myth serves, among other things, to repress the reality of war and death.

In a similar move, Laurence Rickels, in “Freud and the Technical Media” argues that the postmodern technical media create the phenomenon of “unmournable death” while holding “the place of our missing death cults.” This link between technology and repression or, better, the possibility of using technology for purposes of repression, seems to be rooted in a very general structure of memory. “Memorization” as a symbolic process presupposes the absence if not “destruction” of the remembered object and its “revitalization” as memory. This unavoidable absence haunts Derrida’s notion of the impossibility of mourning in “Mnemosyne” — an impossibility that seems to be radicalized in the postmodern techniques of memorization, the freezing of memories or the “covering” of death by the technical media.

Walter Benjamin, in “The Work of Art in the Age of Mechanical Reproduction,” writes about the “loss of aura.” The loss of the aura, of unique and finite personhood or individuality, turns the dead into a death which cannot be mourned. The uncountable dead that we have become used to seeing in the news as well as in war and crime movies will remain unaccounted for.
tion of formerly repressed memories. They “work through” the incapacity of mourning or even recreate “mournable death.” It is, then, not the technical media as such but the cultural tendency to mistake the order of the media for the order of things which creates the simulacra of postmodern existence.

Notes


6 Italo Calvino, If on a winter’s night a traveler (San Diego/New York/London: Harcourt Brace Janovich, 1979) 127-8.


8 I deliberately say “himself” because, as Gena Corea has stressed, literature about cloning hardly ever talks about cloning women and, if so, then about men cloning women like Raquel Welch.

9 Corea 262-3.

11 Corea 265.

12 See also Kathleen Woodward, “Art and Technics: John Cage, Electronics, and World Improvement,” in *The Myths of Information*. She writes, “electrical-electronic technologies make a genuinely new phase in the scientific-technological revolution because they have increased the degree of artificiality in man’s environment significantly, and have thereby generated new, non-natural needs” (174-75).

13 Gabriele Schwab, “Creative Paranoia and Frost Patterns of White Words: Making Sense in and of Thomas Pynchon’s *Gravity’s Rainbow*,” Working Paper No. 4 of the Center for Twentieth Century Studies at the University of Wisconsin-Milwaukee, Fall 1985, 10.


17 Sterne 166.


23 Ong 136.
If primary modes of thinking are holistic and syncretistic (in the sense of Piaget’s “syncretistic vision”), this does not mean that they are organicist in the traditional sense. They are, on the contrary, seen in constant tension to secondary analytic modes of thinking and the “new holism” presupposes a dynamic tension between the two modes. What the new holistic model shares with organicist models is the idea of a certain “balance” between parts and whole. The whole, however, is not an isolated “object” but a kind of perceptive whole, a heuristic construct used as an organizational device in varying cultural contexts. It belongs rather to a system-theoretical model with an ecological notion of system and environment as described by Gregory Bateson and others. Its boundaries are flexible and open to continuous change.


Rickels 8 and 17.

Meant in the sense of Freud, Sartre, Gemma Jappe and others.


Definition in *The American Heritage Dictionary*. 