

# Heidegger and McLuhan: The computer as component\*

Michael R. Heim (1993) part one

*The most widely known philosophical names of the twentieth century, household words in Europe and the U.S. respectively, belong to two intellectual giants who saw technology as the central issue of the twentieth century: Heidegger giving technology a reality status; McLuhan discovering that no meaning escapes the mesh of the electronic media. Future scholars will sort out how these two thinkers differ while sharing common assumptions. More important for us remains what we can learn from them about the role computers play in our lives. Heidegger and McLuhan both saw that the computer would pose less danger to us as a rival artificial intelligence than it would as an intimate component of our everyday thought and work. I wrote about this in 1992 for the journal *Philosophy and Literature* published by the Johns Hopkins University Press.*

## Heidegger and Computers

An odd juxtaposition? No philosopher highlights the clash between technology and human values so sharply as Heidegger. Not only did he make technology central to metaphysics, Heidegger also came to see in it the root evil of the twentieth century, including the Nazi German catastrophe, which he described as “the confrontation of European humanity with global technology.” In both his life and writings Heidegger felt technology to be an overwhelming force that challenges the reassuring maxims of traditional morality. Yet his death in 1976 did not permit Heidegger to see the century’s most powerful technological revolution: the proliferation of the microcomputer. He saw only the first glimmerings of computerization, the mainframe dinosaurs of the computer age. But because his work spans the gap between the days before computers and the increasingly computerized present, Heidegger can become a springboard for understanding the new situation of the sciences and the humanities.

The images we have of Heidegger the thinker, both photographic and mythic, place him in another time, another generation. In posed photographs, we see him sitting in a hut on the quiet mountaintop of the Todtnauberg, surrounded by shelves of books as he bends intently over a wooden writing table. The sun pours in the window. Under his pen, the man-

uscripts bristle with marginalia and scrawled notations of every kind, his pages a palimpsest heaped with layers of minute revisions. Heidegger the thinker is Heidegger the scholar, and the scholar searches ancient texts for clues about the history of Being. He looks for hints about where our essence, our heart, is today and whither the pull of the future.

This image of Heidegger feeds on nostalgia. Even the Heidegger of the photos, seated in his hut a half century ago, working with pen on paper, had a keen sense of just how faded this picture was soon to become, how quickly this image turns antiquarian. Because he connected being with time, Heidegger knew that reality changes and with it the task of thinking. He sensed the pace of change in the twentieth century, and he seemed to foresee what librarians realize today: “*The image of the humanist scholar in the book-crammed study, thinking deep thoughts, will continue to be less and less viable in professional scholarship.*”<sup>1</sup> This recent observation by the director of a great college library confirms what Heidegger in his writings surmised: our rapid technological advance challenges the legacy of human thinking. Who better than the contemporary librarian knows the inner trend of today’s scholar? Bid adieu to the “*hochgewölbtes, engen gotischen Studierzimmer*” of Goethe’s *Faust*. The Schreibstube is giving way to the computer workstation, and scholarship requires a cybersage.

Computerized libraries already exist today without paper books, and by the year 2000, nearly every text of human knowledge will exist in electronic form. Heidegger sensed, with anguish, that his works would one day come to light in a world of scholarship that had grown alien to the meditative pathways that nurtured his thoughts. In 1967, he saw a rising crest of information suspected, might soon swallow his own writings:

*“Maybe history and tradition will fit smoothly into the information retrieval systems which will serve resource for the inevitable planning needs of a cybernetically organized mankind. The question is whether thinking too will end in the business of information processing.”*<sup>2</sup>

In the essay “The Age of the World Picture,” Heidegger unearthed seeds planted by seventeenth-century Cartesian philosophy which would blossom today as science merges with computer science.<sup>3</sup> The computer began to appear indirectly in Heidegger’s mid-century writings as he took up the theme of calculative versus meditative thinking, for the computer was to become the supreme calculator.

The first time I ran across the conjunction of Heidegger and computers was in 1977 when Joseph Kockelmans returned from giving seminars in Europe. While in Trier, he made the acquaintance of two graduate students, Rainer Bast and Heinrich Delfosse, who were at the time breaking new ground in Heidegger studies. Professor Kockelmans showed me some work from these two students by handing me a stack of computer paper twenty centimeters thick. It was a series of computer printouts listing the textual discrepancies among the various German editions of *Being and Time*. Since the 1960s, the computer analysis of texts was applied occasionally by humanists but they used it mainly to detect stylistic differences in classical works like Homer or Shakespeare. There in my hands lay the first discomfiting conjunction of Heidegger and computers. That computer printout eventually became the book *Handbuch zum Text studium von Martin Heideggers “Sein un zeit”* published in Stuttgart by Frommann-Holzboog in 1979.

Until then, Heidegger and computers had jux-

ta-position, an abstraction under the heading “the question of technology.” What my hands held was not an abstract treatise but a concrete, oxymoronic fact. Heidegger speculated on an all-enframing *Gestell* (technological system), ominous and threatening, but an abstraction looming like a metaphysical sphinx, terrorizing thought with a puzzling lack of specificity. Now here was computer text concretely manifesting that abstraction. The stack of printouts highlighted both the inevitability of a technologically informed scholarship and the soundness of Heidegger’s fears that his work would soon become an object of technological scrutiny. Heidegger was now on computer. The question of technology had become the question about how to go about studying Heidegger.

Just what were the specific dangers of computers? At that time, the main philosophical answer to this question was what I call the computer as opponent. In this approach the computer appears as a rival intelligence that challenges the human being to a contest.

## The Computer as Opponent

In 1972, Hubert Dreyfus had called attention to the danger of computers. Applying phenomenological analysis, Dreyfus argued that we must delineate carefully what computers can and cannot do, lest we become unrealistic about computers and fall into a misunderstanding of the kind of beings we ourselves are. In *What Computers Can’t Do*?<sup>4</sup> Dreyfus observed how mid-twentieth-century culture tended to interpret the human being as an information-processing system. Researchers spoke of the brain as a heuristically programmed digital computer. Because the brain is a physical thing, Dreyfus noted, and because we can metaphorically describe the brain as “processing information,” we easily slip into the unexamined dogma that human thinking operates in formal patterns and that properly programmed computers might be able to replicate these patterns. If computers could replicate thought patterns, might we not then justifiably say that computers think or have an artificial intelligence (AI)? Research funds were flowing into AI when Dreyfus raised his

doubts. Dreyfus argued – and continues to argue in his 1985 *Mind over Machine*<sup>5</sup> – that we delude ourselves if we believe we can create machines to replicate human thought. Dreyfus sought to establish the limits of artificial intelligence, and he saw the computer as a meta-physical opponent.

Most philosophical reasoning about computers still moves within the narrow confines of artificial intelligence, the computer as opponent: Is it possible for computers to think? Can human mental and perceptual processes fit the formulas of digital programs? How far can computers advance in simulating or surpassing human reasoning? Such are the questions that held, and still hold, the attention of philosophers from Hubert Dreyfus to John Searle. This line of inquiry goes only a short distance in exploring the existential questions raised by the conjunction of Heidegger and computers. The Computer Opponent line takes for its paradigm the chess match. More combative than the Turing test, the chess board places the human in a duel with the computer, the winner claiming superior intelligence. The game paradigm ensures that the relationship remains antagonistic. The combative paradigm still holds sway over the popular imagination, the human-versus-the-machine contest, with a winner/loser outcome.

Dreyfus first connected Heidegger with computers by working within this model. Observing an unbounded enthusiasm for artificial intelligence research, Dreyfus drew on Heidegger's critique of technology to set limits on the kind of research that defines the human mind as an information processor. Dreyfus challenged the very idea that a chess-playing program "of any significance" could be built, and in 1965 he published a paper equating "Alchemy and Artificial Intelligence." This ruffled the AI researchers and they took Dreyfus up on his challenge. In 1967, MIT researchers confronted Dreyfus with a computer chess program named MacHack. To the delight of the AI community, Dreyfus lost to the computer in a public match.<sup>6</sup> Later, in *What Computers Can't Do*, Dreyfus explained his philosophical point, namely, that he was concerned not with

generic predictions but with the underlying comparison that hastily identifies intelligence with formal patterns or algorithms.

Dreyfus sharpened Heidegger's technology critique by focusing on the formal patterns that computers use. Because software programs run by explicitly stated instructions, the computer works on a level of intelligibility that Heidegger characterizes as derived and not primordial. Formal patterns process reality but filter it through the screen of lucidity. What fails to fit the patterns gets lost in the process, even if we try to re-introduce the unknown into our interpretations. The tendency to interpret reality as essentially lucid or representable goes back to Plato, according to Heidegger's early reading of Plato (*Platons Lehre von der Wahrheit*). Dreyfus sees in the computer, in the claims of artificial-intelligence researchers, the apotheosis of metaphysics. Plato postulated the Good as subsistent in itself. The Good, the *agathon*, energizes the forms of things, making them stable and self-consistent. So too artificial intelligence research – at least in one of its early phases – postulates formal patterns as the be-all and end-all of intelligence. (Much recent AI research is turning away from the priority of formal algorithms and looks to "fuzzy logics.") Dreyfus applied Heidegger's critique of technology to computers, but he conceived the computer too narrowly as an artificial-intelligence device. He saw the computer only as opponent. Yet the opposition of computer and mind/brain remains, as Heidegger would say, ontic rather than ontological. The two terms, mind/brain and computer/program, refer to beings, to definite entities within the world. We can compare and research the nature of these entities. We can investigate the causes of their operations, sizing up their powers and limitations, but still we treat them as beings, as entities delimited by their respective natures. The mind-versus-computer question is not ontological. Nor is it existential. Whether or not the computer could in principle outsmart the mind or simulate consciousness, however intriguing a question, does not touch what is happening to us through computerization. The chess paradigm distracts us from the present issue, because it makes us construe our rela-

tionship to computers as confrontational rather than collaborative.

### The Computer as Component

Very different from the computer as opponent is the computer as component. The computer has become an ingredient in human knowing. Instead confronting a potential rival, we find ourselves interfacing with computers. Computers are woven into the fabric of everyday life, and they have become an important thread in the texture of Western civilization. Our daily reliance on computers affects the way our culture proceeds, in everything from architecture to zoology. Instead of regarding computers as opponents, we collaborate with computers. Increasingly rare is a computer-free stance from which to regard the computer as a separate device. Even the research and development at major corporations is now moving away from artificial intelligence research, where the computer functions separately, to research on the human/computer symbiosis, including information environments which augment human bodily perception and create "virtual realities."<sup>7</sup> While we may legitimately inquire into the power wielded by computers independently of humans, the existential ontological question really cuts in a different and deeper direction than AI. As we now live and work with computers in our writing, building, banking, drawing, and so forth, how does our reality change? As Heidegger might put it, What is the meaning of this intimate connection of Being with computers? When he pondered technology as our destiny, Heidegger seemed to have had something in mind more intimidating than an external challenge to our dignity as human beings. What Heidegger saw was something even more sinister than a revolt of the machines.

What Heidegger called "the essence of technology" infiltrates human existence more intimately than anything humans could create. The danger of technology lies in the transformation of the human being by which human actions and aspirations are fundamentally distorted. Not that machines can run amuck, nor even that we might misunderstand ourselves through a faulty comparison with machines.

Instead, technology enters the inmost recesses of human existence, transforming the way we know and think and will. Technology is, in essence, a mode of human existence, and we could not appreciate its mental infiltration until the computer became a major cultural phenomenon.

Already in 1957 Heidegger noticed the drive for technological mastery pushing into the human interior where thought and reality meet in language. In his essay on Hebel, he wrote:

*"The language machine regulates and adjusts in advance the mode of our possible usage of language through mechanical energies and functions. The language machine is – and above all, is still becoming – one way in which modern technology controls the mode and the world of language as such. Meanwhile, the impression is still maintained that man is the master of the language machine. But the truth of the matter will be that the language machine takes language into its management, and thus masters essence of the human being."<sup>8</sup>*

What did Heidegger mean when he referred to the "language machine" (*Sprachmaschine*)? He did not say "computer" – the only computers around then were huge mainframes like the UNIVAC which filled several rooms and performed only numerical calculations. Could we, twenty-five years later, translate what Heidegger meant by using the English term «computer» instead of "language machine?"

In the early 1980's I ran into the meaning of language machine just as I was finishing the translation of another book by Heidegger, *The Metaphysical Foundations of Logic*. The translation required a lot of detailed organization, since the main body of the text includes extensive citations in Latin, French, and Greek. As a scholarly publication, the text had not only to render but also to preserve many of the references in their original languages. The translation required laborious cross-referencing with other texts and other English translations. Index cards and cut-and-paste scraps swamped my kitchen table. Perseverance was all. The work took me more than two years. Then, just as I finished typing the third and final draft of the translation, I discovered the language machine, the connection between Heidegger and

computers. Not long after mailing the final draft of the translation, I installed my own personal computer for word-processing. Imagine my mixed feelings when I came to realize that the two years of labor on the translation would have amounted to no more than one year if I had used a computer to handle the text and references. The meaning of language machine began to take shape in my mind.

\* M. R. HEIM, *The Metaphysics of Virtual Reality*, Chapter 5, New York, Oxford University Press, 1993, 55-72.

<sup>1</sup> The statement was made by Ralph Holibaugh, director of the Olin and Chalmers libraries at Kenyon College. It appeared in *The Kenyon College Annual Report 1988-1890*, 5.

<sup>2</sup> M. HEIDEGGER, *Preface to Wegmarken*, Frankfurt, Klostermann, 1967, my translation.

<sup>3</sup> Don Ihde, for one, see science merging with its instruments. See D. IHDE, *Technology and the Lifeworld: From Garden to Earth*, Bloomington, Indiana University Press, 1990.

<sup>4</sup> H. DREYFUS, *What Computers Can't Do: The Limits of Artificial Intelligence*, New York, Harper Colophon, 1972, rev. ed., 1979.

<sup>5</sup> H. DREYFUS, *Mind over Machine: The Power of Human Intuition and Expertise in the Era of the Computer*, New York, Macmillan Free Press, 1985.

<sup>6</sup> The history of this chess match appears in H. RHEINGOLD, *Tools for Thought: The People and Ideas behind the Next Computer Revolution*, New York, Simon & Schuster, 1985, 161-162. Dreyfus explains what he takes to be the point of the match in H. L., DREYFUS, T. ANTHANASIOU & S. E. DREYFUS, *Mind over Machine: The Power of Human Intuition and Expertise in the Era of the Computer*, New York, Simon & Schuster, 2000, 112.

<sup>7</sup> See the volume *Cyberspace: First Steps. Cyberspace: First Steps*, M. BENEDIKT, Cambridge, MIT Press, 1991. The term "cyberspace" originated with William Gibson who used science fiction to explore the symbiotic connection of humans and computers. On virtual reality, see M. R. HEIM, "The Metaphysics of Virtual Reality", *Multimedia Review* 3 ("New Paradigms"), 1990.

<sup>8</sup> In M. HEIDEGGER, *Hebel – der Hausfreund*, Fullingen, Günther Neske, 1957, translated as *Hebel – Friend of the House*, in *Contemporary German Philosophy* 3, 1983, trans. Bruce Foltz and Michael Heim, 89-101.

# Art(s) and (some) Thoughts

## Art(s) et (quelques) réflexions