ARTFORUM

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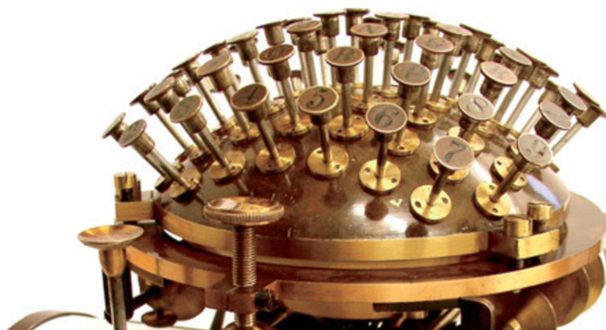
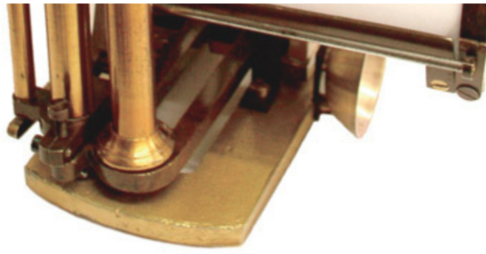
PRINT SEPTEMBER 2012

MACHINE LEARNING: FRIEDRICH KITTLER (1943–2011)

Geoffrey Winthrop-Young and Eva Horn

THE GERMAN MEDIA THEORIST FRIEDRICH KITTLER, who passed away last October at the age of sixty-eight, was perhaps the most incisive contemporary exegete of our relationship with machines. *Artforum* asked **Geoffrey Winthrop-Young**, author of *Kittler and the Media* (2011), and **Eva Horn**, professor of modern German literature at the University of Vienna, to delve into Kittler's rigorously antihumanist, wryly polemical, and stunningly prescient vision of a world in which technology is omnipresent.





Friedrich Nietzsche's typewriter, an 1878 Malling- Hansen writing ball. Photo: Dieter Eberwein.

GEOFFREY WINTHROP-YOUNG

FRIEDRICH KITTLER was a strange man: appealing and difficult, brazen and shy, a scholar equally adept at excluding and seducing. The contradictions extend to his work. Like Marshall McLuhan, he was both ahead of his time and decidedly retro, but this lack of synchronicity means that his work has become representative of an age marked by temporal fracturing. "The future," runs one of William Gibson's best lines, "is already here—it's just not evenly distributed." By the same token, the past is still around—it just hasn't evenly receded. Both statements apply to Kittler, who may be almost as interesting a cultural phenomenon as he is a cultural theorist. It is only a matter of time before his work is pricked and probed by the cultural-studies industry he so despised. A first body of evidence is the surprising number of personal appraisals and appropriations published after his death, many of which were written by people who did not know him but who felt the need to explain the more intestinal impact of his work. The Kittler effect is also a Kittler affect; one of its more entertaining manifestations is the attempt to link his work to a zeitgeist stew of musical, cinematic, literary, technological, and pharmacological intoxicants. The inevitable process of burying a dead theorist underneath his reception has begun; hence talking about Kittler involves talking about those who talk about him.

Let's start by tackling one high-profile item. Among the most pervasive memes in the many obituaries, blogs, and tweets sparked by his passing is the association of his oeuvre with that of Arnold Schwarzenegger. Kittler's theory is said to equal the Terminator movies. If James Cameron had hired Foucault and Heidegger to write the scripts, so the story goes, the result would have come close to what you find in Kittler. He offers nothing less than an academic retelling of how Skynet, the movies' fictional artificial-intelligence system, gains self-awareness, goes ballistic, and decides to terminate humanity. The other inevitable

reference is the Matrix trilogy. Kittler, too, seems to sketch a bleak future in which we end up as decrepit bags of wetware enslaved by a thoroughly digitized environment. It is a CGI-enhanced media philosophy with a Hans Zimmer sound track ending in a Wagnerian gloomsday scenario. A piece in *The Guardian* last December was titled "Friedrich Kittler and the Rise of the Machine," which says it all: A version of the title of the third Terminator movie doubles as an attempt to summarize Kittler.

In many ways, this is dead wrong. Like Nietzsche and Heidegger, Kittler was afflicted with an almost pathological intolerance for any kind of anthropocentrism—even humanism disguised as transhumanism or animism. Philosophy, a notoriously anthropocentric endeavor, therefore needed to fumigate its premises in order to rid itself of the delusion that man is the measure of all things—even of the machines that are rising up to kill him. For Kittler, the Terminator scenario follows the old Pinocchio fallacy, the belief that our creations—from Geppetto's puppet to *Star Trek*'s Lieutenant Commander Data—have nothing better to do than try to become like us. It is unfettered narcissism to assume that artificial life aspires to be human. And the last, melodramatic resort of human narcissism is to take pride in the fact that we are the grand target of our creations. What a piece of work is man that machines should rise up against it.

Kittler told a different story, though it, too, came with a strong affinity to science-fiction narratives, especially those associated with the SF-noir crossover of the 1980s. In terms of actual content, the Kittler-Schwarzenegger link is barking up the wrong tree, but in terms of cultural atmosphere, it is right on target. Back in the '80s, when I started reading Kittler, I realized that his theories were best consumed with a complementary dose of fiction—especially that of those authors he himself admired and made frequent use of, such as Thomas Pynchon and William S. Burroughs. But then there were other texts neither he nor anybody else in Germany had yet heard of. A Canadian friend residing in the Vancouver-Seattle corridor, in those days a prime breeding ground for grunge sounds in both music and SF, inundated me with stories by Bruce Sterling, John Shirley, and William Gibson. Others may have accessed the deeper levels that program Kittler's theories by more respectable and appropriate paths, whether German philosophy (Hegel, Nietzsche, Heidegger), French theory (Lacan, Foucault), or media and information theory (McLuhan, Shannon, Turing); I got there by reading cyberpunk.

Many have commented on the "punk" qualities of Kittler, the Kittlerians, and their texts. No, he didn't wear studded belts or chokers. Besides, his musical taste was firmly locked in earlier decades. (Kittler, who frequently prayed at the altars of Syd Barrett and Roger Waters, and whose analysis of "Brain Damage" should be required reading in literature and media seminars, would rather have been caught dead than wearing Johnny Rotten's I HATE PINK FLOYD T-shirt.) It was more a matter of attitude: the brazen dismissal of everything that till then had been squeezed through students' heads, especially all that considered itself socially conscious and emancipatory. Kittler flipped the Foucauldian finger at the humanities, informing them in no uncertain terms that they had come to resemble Anthony Perkins's mother in *Psycho*: a desiccated old corpse that, though rotting away in the basement, was, unfortunately, still able to control its offspring. In short, he was cool, or at least he played it well. Cool, that is, in the broader sense of the word: Kittler's first impact on his native soil took place at a time when many believed Germany's cultural climate was entering an *Eiszeit*, or ice age, as society became increasingly technologized—and that the only adequate response was a deliberately hypothermal conduct. The position adopted by Kittler and the more committed members of his entourage was not to scold the indifference of technology or lament its lack of human warmth, however, but rather to directly engage with machines. They, at least, had never claimed to be friendly. Better to deal with honest gadgets than fake humans.

As Kittler has argued, literary texts produced around 1900 were able to register the terror caused by the arrival of new-media technologies with particular acuity. The same applies to cyberpunk: Whatever the defects of the genre (and its brand name), it represents the first and most revealing engagement with the imminent ubiquity of the computer—triggered, no doubt, by the concurrent rise in PC sales. Looking back, the punk component of cyberpunk has less to do with asocial withdrawal than with a concern for individual, anarchic engagement with the new digital environment. This was along the lines of what Kittler came to preach in notorious essays such as "Protected Mode" (1991) and "There Is No Software" (1993). What further unites cyberpunk and Kittler is that both have been savaged for paying far too much attention to hardware. In retrospect, however, it seems that the reason they wrote so stubbornly about computers is that they were envisaging a world in which there would be no more computers precisely because *everything* would be

computing.

Friedrich Kittler lecturing at the European Graduate School, Leuk-Stadt, Switzerland, 2010. Photo: Hendrik Speck.

This emergent condition had long been on Kittler's mind. The key quotation occurs at the beginning of *Gramophone, Film, Typewriter* (1986). It is Kittler's Prospero moment. Just as the grand magician admits that what his audience has been watching is baseless and insubstantial, the great media theorist announces the nonexistence of media. They are nothing more than such stuff as code is made on:

"Once . . . formerly distinct data flows [are turned] into a standardized series of digitized numbers, any medium can be translated into any other. With numbers, everything goes. Modulation, transformation, synchronization; delay, storage, transposition; scrambling, scanning, mapping—a total media link on a digital base will erase the very concept of medium. Instead of wiring people and technologies, absolute knowledge will run as an

endless loop."

Mind you, Kittler is not saying that there are no media anymore. Rather, media have suffered such a demotion that it becomes questionable whether the term still makes sense. Like impoverished aristocrats forced to work as tour guides on their former estates, media now function in subservient fashion as interfaces between the machine and us. By offering pretty sounds and images, media are concessions to inferior human processing capabilities. But just as the distinction between sounds, sights, letters, and numbers is entirely superficial, that between once clearly separate and separated machines (from clunky hardware to processing centers) and their surroundings will be erased. For all his hardware fetishism, Kittler was prescient in anticipating a world in which the environment would be the interface because everything would be drawn into processing—be it as an actual processor, a storage device, or an RFID chip. As Gibson put it, it is doubtful whether our grandchildren will understand the distinction between that which is a computer and that which is not.

We are approaching the hidden core of Kittler's theory. Not coincidentally, one of the best inroads is the most famous cyberpunk text of all: Gibson's *Neuromancer* (1984). Remember the plot? A powerful AI entity has been divided against itself. In order for one half, Wintermute, to reconnect with the other—the Neuromancer—it relies on a motley crew of human intermediaries, among them the synaptically enhanced hacker Case, who is capable of establishing a direct brain-computer interface. After more than two hundred pages of digital cloak-and-dagger action, Wintermute and Neuromancer are united.

The trick to reading Kittler through Gibson is to read Gibson through Hegel. Imagine *Neuromancer* as a more entertaining (and economically phrased) version of *Phenomenology of Spirit.* The novel's frenzied cloak-and-dagger section is Hegel's History, a process through which "absolute spirit" uses human consciousness as medium and platform for its self-realization. Already in Hegel there is a tendency to leave humans behind and contract out the later stages of absolute spirit's pilgrimage to complex knowledge institutions ("objective spirit"). Kittler intimates that this process now takes place in the digital domain, thus effectively replotting the flight path of Hegel's owl of Minerva. Nature processes itself in numbers, which, as proved by the true impresario of

absolute knowledge, Alan Turing, can emulate all mechanical processes. At one point humans may have been indispensable platforms on which to carry out this evolution, but that is over. "What I keep dreaming of," Kittler explained in an interview, "is that machines, especially the contemporary intelligent machines as conceived by Turing in 1936, are not there for us humans—we are, as it were, built on too large a scale—but that nature, this glowing, cognitive part of nature, is feeding itself back into itself."

At the conclusion of *Neuromancer*, the happily merged Wintermute-Neuromancer super-AI pays a visit to Case, who asks it how it spends its time. "I talk to my own kind," it answers. The super-AI has, it turns out, intercepted a series of transmissions from outer space. Case's lackadaisical response to this revelation: "Yeah? No shit?" It turns out that humans and machines have little to say to each other. Extraterrestrial intelligence may be the holy grail of space exploration, but why should humans care about something only machines can communicate with? Precisely the same prospect appears at the end of Kittler's programmatic essay "The History of Communication Media" (1996). After the collapse of storage, communication, and transportation media into the digital domain, the übermedium turns its sensors away from humanity toward the final frontier: "Without reference to the individual or to mankind, communication technologies will have overhauled each other until finally an artificial intelligence proceeds to the interception of possible intelligences in space."

We are far from Skynet and the rise of the machines. What Kittler describes is neither domination by machines nor a dramatic enmity between us and them, but a simple dissociation. Whatever the world may be, it is composed of different processing levels: the microtemporal level of machines, the mesotemporal level of humans, and the macrotemporal level of evolution. Machines do not want to kill us. They do their own stuff on their own level, just as we do ours.

Geoffrey Winthrop-Young collaborated with Michael Wutz to translate Friedrich Kittler's Gramophone, Film, Typewriter *(1986). He is a professor of German at the University of British Columbia in Vancouver.*

Pink Floyd at Abbey Road Studios, London, 1967. From left: Roger Waters, Nick Mason, Syd Barrett, Rick Wright. Photo: Andrew Whittuck/Redferns.

EVA HORN

ALTHOUGH FRIEDRICH KITTLER has long been renowned as a pioneer of media theory, his writings about media form only one part of his oeuvre. Kittler was arguably one of the most inspiring and iconoclastic thinkers of our time. His role in making "media archaeology" and technologies of cultural transmission broadly studied fields is a mark of his accomplishment, yet the impact of his work as a philosopher of culture has yet fully to unfold.

Kittler began his academic career in the field of German literature, and his early book *Aufschreibe-systeme 1800/1900* (Discourse Networks 1800/1900, 1985) was a slap in the face of his discipline. He refused the kind of hermeneutic approach that projects a "sense" into literary texts, focusing instead on "the materialities of communication"; that is, the historical and technical bases of literary writing and reading. Kittler's approach was not only antihermeneutic but also anti–Frankfurt School, and it may be best summarized (to

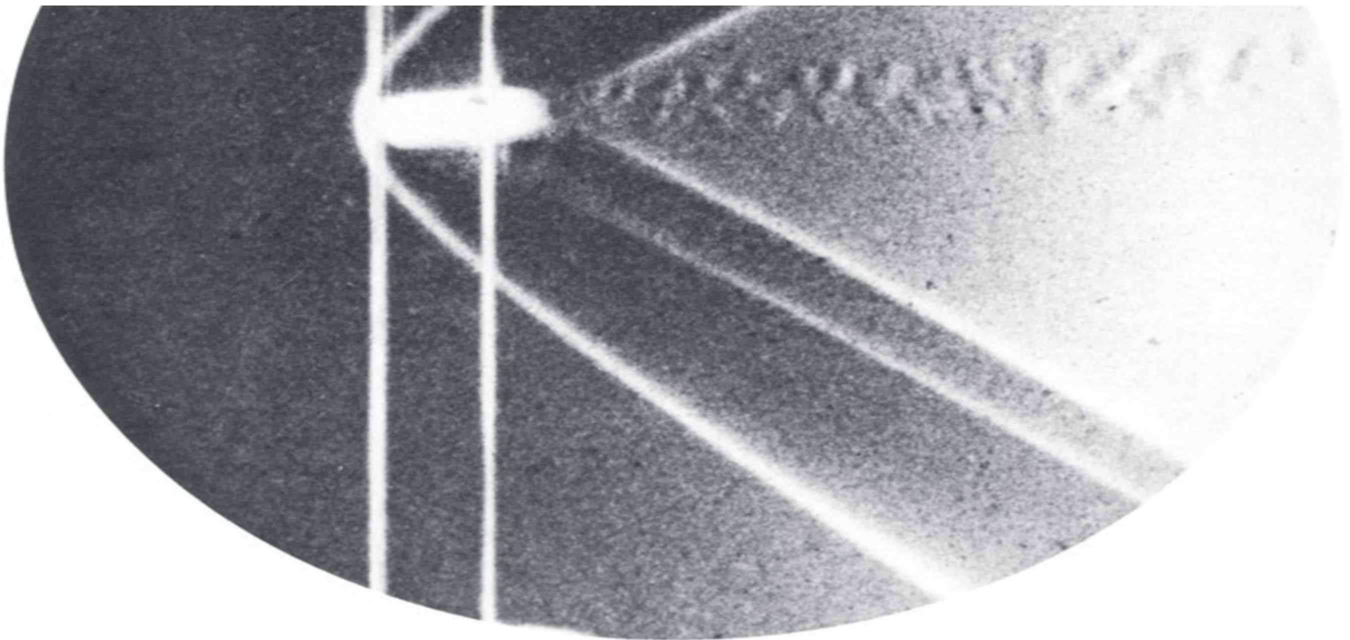
borrow the title of a 1980 collection of essays that Kittler edited) as one of *Austrei-bung des Geistes aus den Geisteswissenschaften*—"purging the humanities of their humanistic baggage," which is to say of concepts such as authorship, the individual, interpretation, and so on. Instead, he saw art (including literature), philosophy, scientific knowledge, and technology as parts of a common system of data processing. In *Discourse Networks*, Kittler aimed at a radical historicization of this system, opposing in exemplary fashion the Romantic, text-centered discourse network of 1800 to the various technical media that composed its counterpart a century later. In a manner indebted to both Foucault's "gay positivism" and Lacanian psychoanalysis, he laid bare the historical institutions and the media at the origin of the modern construction of the individual and of literary authorship: mothers, child pedagogy, and universities (circa 1800); cinema, experimental psychology, and phonographic recording (circa 1900).

It was already clear when this book appeared that Kittler's intellectual project was not only about rewriting literary history but also about uncovering the technical media involved in the production and circulation of a discourse on (in his words) "so-called Man." He thus shifted away from literary studies and began work on what made him the godfather of a new discipline—or, rather, antidiscipline: a kind of media history that would leave behind the traditional blindness of European humanities toward culture's technological hardware. Over the following twenty years, Kittler's investigations included the entanglements between psychoanalysis and the gramophone, between modern poetry and experimental psychology, between Nietzsche's philosophy and his typewriter. He posited the origins of rock music as an "abuse of army equipment," discussed film in terms of "time axis manipulation," and wrote a wide-ranging book on the history of optical media—a publication that is devoid of images. What is striking in all his writing on literature, film, cinema, music, and (occasionally) art is the technical basis of his approach. He once explained it in an interview as follows: "In the case of my generation, whose ears were full of Hendrix crashes and Pink Floyd and who were overwhelmed and completely awed, I tried to move back from these blissful shocks in such a way as at least to be able to build technical apparatuses according to plan that were themselves capable of performing these feats. That, after all, is the only way one can deal with art."

Not surprisingly, in the 1990s Kittler turned to the history and theory of digital media,

tracing the computer's genealogy to military technology and cryptography in World War II. For Kittler, war was the father of all media, the cataclysmic situation that has given rise to all innovations in logistics and communication and, especially, to the modern super-medium that has swallowed all other media: the computer. The civil use of communication technology for chatting with friends on the phone or listening to music on the radio was nothing but a by-product of a technology invented in preparation for war.

"Media determine our situation," Kittler bracingly stated in the opening lines of *Gramophone, Film, Typewriter* (1986). This does not mean that media determine how we act in a certain "situation" (in German the word is *Lage*, which has a distinctly military connotation), but rather that "what remains of people is what media can store and communicate." Unlike Marshall McLuhan, who saw technical media as "extensions of man," Kittler saw media as the technological a priori of human thought and history—and thus, rather, *man as an extension of media*. What makes Kittler's approach to media history both particularly productive and controversial is his bold refusal to participate in either the humanist critique of media as means of manipulation or the glorification of media as tools of empowerment or democratization. Kittler's interest is an epistemological and technological analysis of what media do for and within culture: They are, he says, "networks of technologies and institutions that allow a given culture to select, store, and process relevant data." In an age of media theory breathlessly running after the latest Internet phenomenon or software application—from the much-ballyhooed Web 2.0 and social media such as Facebook to new forms of online protest such as WikiLeaks and Anonymous—Kittler's adamant focus on the *hardware* underlying software and man-machine interfaces may seem like a strangely old-fashioned gesture. But for Kittler, understanding media means first and foremost dealing with the functional architecture of machines, not with the effects of their ever-changing uses and appearances.



High-speed photograph of a bullet's shock wave, taken by Ernst Mach in 1877.

Of course, his emphasis on media's material base triggered oft-repeated accusations of antihumanism and technological determinism, misunderstandings that Kittler seemed to gleefully invite with his highly polemical tone, his exaggerations, and his sometimes willfully obscure writing style. Kittler was not a writer who wanted to persuade his readers and students with his meticulousness. He wanted to provoke, shock, seduce—and thus transmit to his audience both the passion and the iconoclastic rage that fueled his arguments. Indeed, Kittler made his personal obsessions a chief heuristic tool: They spurred his emphasis on subjects such as women, war, technology, and music from Wagner to Pink Floyd. While women (whether as mothers who induce the modern subject to speak or as secretaries who type the dictations of the modern poet) are for Kittler rarely empirical individuals but rather just another, however particularly fascinating, medium, music is the realm of a kind of Dionysian delirium delivering man from the strains of being a modern subject.

Whether one shares such highly contentious views or not, the obsessive intensity of Kittler's interests may be one reason for the persistent allure of his thought. If the heterogeneous crowd of Kittler's heirs may not share all of his idiosyncrasies, they are united not only in their interest in the foundations of the transfer, storage, and processing of data but also in a radically transdisciplinary approach bridging the abyss that

traditionally separates the humanities from the methods and objects of science, mathematics, and technology. It is largely thanks to Kittler that media theory has not only become an established field in its own right but also continues to transform the humanities as a whole with dramatic effect.

In his last years, Kittler took his media-archaeological approach back to the roots of Western culture. His recent books, which have not yet been translated, outline an archaeology of mathematical and musical notation systems in ancient Greece, linking the cultural techniques of music, measurement, and computing to the physical practices of dance, athletics, and sexuality. While the Greek adoption of the phonetic alphabet celebrated the unity of linguistic encoding and the senses, Kittler argues, the onset of Western philosophy in the wake of Socrates destroyed it. The emblematic figure of the first volume of his final books—a projected tetralogy, begun in 2006, titled *Musik und Mathematik*—is Aphrodite, the goddess of beauty and sensuality, whose demise through Socratic reasoning Kittler mourns with eloquence and erudition. If *Discourse Networks* was a comparative study of the media systems of 1800 and 1900, Kittler's late work is an archaeology of the media system of 300 BC—the very origin of Western thought with all its shortcomings, generalizations, and assumptions of universality. From this perspective, Kittler's lifelong project may be seen as an update of Heidegger's "history of Being"—a questioning of the preconditions of any thought and knowledge underlying the history of the ways in which "Being" appears. But Kittler goes beyond Heidegger by taking the history of being into the post-Turing age, an age in which one universal computing medium determines what and how we think, learn, and communicate. In Kittler's writing and teaching there was, however, much more passion, much more longing and pathos, than there ever was in Heidegger. Kittler's thought was always erotic—a lustful, passionate, idiosyncratic, occasionally aggressive, and ultimately tragic love affair with his subject. Reading Kittler, one cannot help but be affected by the urgency of his desire to bring together Aphrodite's beauty with Turing's precision.

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