

GRAMOPHONE, FILM, TYPEWRITER

FRIEDRICH A. KITTLER

Translated, with an Introduction, by

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TRANSLATORS'

INTRODUCTION: *Friedrich Kittler and Media Discourse Analysis*

It was the Germans, those disastrous people, who first discovered that slag heaps and by-products might also count as learning, but I doubt if we can blame any one race or nation in particular for setting dumps and dustbins above the treasure cabinets of scholarship.

— H. G. WELLS, *The Camford Visitation*

MEDIA AWAKENINGS: THE USUAL SUSPECTS

In October 1939, in the first fall of the war, students and instructors at the University of Toronto abandoned their classes to listen to the enemy. A loudspeaker installed on a street close to Victoria College was broadcasting a speech by Adolf Hitler, who in the wake of Germany's victory over Poland was exhorting those still deluded enough to resist him to call it quits. Among the audience was a mesmerized classicist:

The strident, vehement, staccato sentences clanged out and reverberated and chased each other along, series after series, flooding over us, battering us, half drowning us, and yet kept us rooted there listening to a foreign tongue which we somehow could nevertheless imagine that we understood. This oral spell had been transmitted in the twinkling of an eye, across thousands of miles, had been automatically picked up and amplified and poured over us.¹

Half a century later, Eric Havelock—whose work on the Hellenic shift from orality to early literacy had become required reading for media and communication historians—recounted his wireless rapture in an attempt to explain why the early 1960s witnessed a sudden interest in the hitherto

neglected topic of orality. In 1962–63, five prominent texts shedding light on the role of oral communication appeared within twelve months: *La Pensée sauvage* (Claude Lévi-Strauss), *The Gutenberg Galaxy* (Marshall McLuhan), *Animal Species and Evolution* (Ernst Mayr), "The Consequences of Literacy" (Jack Goody and Ian Watt), and Havelock's own *Preface to Plato*. What united these publications, Havelock argued, was the fact that their authors belonged to the first generation to be shaped by a world in which a print-biased media ecology had been altered by new ways of recording, storing, and transmitting sounds and voices, including the radiogenic Austrian dialect of a German dictator. Indeed, how could a generation of listeners acoustically nurtured on short-wave broadcasts of fireside chats, burning airships, Martian invasions, and calls for total war not grow up to ponder the changing relationship between speech and writing? "Here was the moving mouth, the resonant ear, and nothing more, our servants, or our masters; never the quiet hand, the reflective eye. Here was orality indeed reborn."²

"Media," the opening line of Friedrich Kittler's *Gramophone, Film, Typewriter* states with military briskness, "determine our situation" (xxxix). They certainly determine our appreciation of them. The media of the present influence how we think about the media of the past or, for that matter, those of the future. Without phonography and its new ability to faithfully manipulate the spoken word in ways that no longer require that speech be translated into writing, there would be no academic enterprises aimed at understanding the communicative household of cultures with few or no symbol-based external storage capacities. Our "reborn" or, to use Walter Ong's better-known phrase, "secondary" orality retroactively created the bygone word-of-mouth world that was not yet at the mercy of the quiet hand and the reflective eye.³ Not surprisingly, many media histories adhere to a tripartite structure that uses these two oralities to bracket an interim period known as the "Gutenberg Galaxy" or the "Age of Print." Such framing, however, implies that the (re)discovery of a past orality will affect the perception of our present literacy, since every exploration of the dynamics of orality is a renegotiation of the limits and boundaries of literacy and its associated media networks. Why, then, separate the quantum leap in the research into orality from the emergence of the more comprehensive attention toward mediality in general? We need only add to Havelock's list a couple of equally divergent and influential contemporary titles—most prominently, André Leroi-Gourhan's *Geste et Parole* (1964–65) and McLuhan's *Understanding Media* (1964)—to realize that the watershed Havelock had in mind concerned more than ques-

tions of orality versus literacy. A widespread interest cutting across all disciplinary boundaries started to focus on the materialities of communication. At a time when the term "media" either was still missing from many dictionaries or conjured up visions of spiritualism, numerous scholars were attempting to bring into focus the material and technological aspects of communication and to assess the psychogenetic and sociogenetic impact of changing media ecologies. Such attempts set themselves the tasks of establishing criteria for the examination of storage and communication technologies, pondering the relationships among media, probing their social, cultural, and political roles, and, if possible, providing guidelines for future use.

Of course there were predecessors, and some are still being quoted. Of the many learned clichés circulating in the widening gyre of media studies, the most persistent may be the assurance that all the nasty things we can say about computers were already spelled out in Plato's critique of writing in *Phaedrus*.⁴ In this century, Walter Benjamin's famous essay "The Work of Art in the Age of Mechanical Reproduction" was first published in 1936, and Harold Innis's *Empire and Communications* and *Bias of Communication*, the first attempts to conjugate world history according to the workings of different media technologies, appeared in 1950 and 1951, respectively. The list of works published before 1960 could be expanded, especially if one were to include the many single-medium theorists and commentators—such as Münsterberg, Arnheim, Balázs, and Kracauer on film, or Brecht and Lazarsfeld on radio—as well as the growth of North American communication studies, but media theory as we know it today first emerged in the 1960s.

Much of this work tends to go by generic names such as "media theory" or "media studies." Such terms are so hospitable as to be ridiculous, as if the combined trades, skills, and disciplines of paper production, book binding, bibliography, textual criticism, literary analysis, and the economics of publishing were to be labeled "paper theory." But their vagueness reflects a genuine diversity of possible approaches, for at the end of the twentieth century the study of media is roughly where the study of literature was at its beginning. When Boris Eichenbaum, one of the proponents of Russian formalism, tried to defend the "formal method" against the growing encroachment of state-sponsored Socialist Realism, he quoted the impatient comments of his fellow critic Roman Jakobson to underline the specificity and appropriateness of their new approach:

The object of the science of literature is not literature, but literariness—that is, that which makes a given work a work of literature. Until now literary historians

have preferred to act like the policeman who, intending to arrest a certain person, would, at any opportunity, seize any and all persons who chanced into the apartment, as well as those who passed along the street. The literary historian used everything—anthropology, psychology, politics, philosophy. Instead of a science of literature, they created a conglomeration of homespun disciplines. They seemed to have forgotten that their essays strayed into related disciplines . . . and that these could rightly use literary masterpieces only as defective, secondary documents.⁵

The same impatience underlies Friedrich Kittler's comment that "media science" (*Medienwissenschaft*) will remain mere "media history" as long as the practitioners of cultural studies "know higher mathematics only from hearsay."⁶ Just as the formalist study of literature should be the study of "literariness," the study of media should concern itself primarily with mediality and not resort to the usual suspects—history, sociology, philosophy, anthropology, and literary and cultural studies—to explain how and why media do what they do. It is necessary to rethink media with a new and uncompromising degree of scientific rigor, focusing on the intrinsic technological logic, the changing links between body and medium, the procedures for data processing, rather than evaluate them from the point of view of their social usage.

This centering upon media is reminiscent of the work of Marshall McLuhan, and, not surprisingly, the growing interest in the media-related work of Kittler, Vilém Flusser, Paul Virilio, Arthur Kroker, and Régis Debray coincides with McLuhan's resurrection as a critic of modernity worthy of being mentioned in the same breath as Adorno, Foucault, or Heidegger.⁷ During McLuhan's lifetime this respectability would have amazed many a critic, since he appeared to be second to none when it came to making life easy for his detractors: his questionable politics, his casual and at times cynical dismissal of social issues, his delight in hobnobbing with the corporate and political elite, not to mention the breezy shallowness of his work following *Understanding Media*, all conspired to make him and his "Summa Popologica"⁸ a well-placed punching bag, especially for the learned Left. McLuhan's focus on technologies, media formats, and materialities of communication did not fit easily within an intellectual landscape shaped more by questions of media ownership, audience manipulation, and strategies for communicative emancipation.

The intellectual Left's dismissal of McLuhan was equally pronounced in Germany. In a well-known media essay of 1971, Hans Magnus Enzensberger rejected him as a reactionary "ventriloquist" for the apolitical avant-garde, a "charlatan" ignorant of social processes "whose confused books serve as a quarry of undigested observations for the media indus-

try."⁹ Building on Brecht and Benjamin, Enzensberger attempted to formulate a "socialist strategy" for the emancipatory use of media. Anticipating a theme of great importance in *Gramophone, Film, Typewriter* (although stripped of its political overtones in Kittler's book), he pointed out that in principle, technologies such as the transistor radio recognize no contradiction between transmitter and receiver. Rather, these technical distinctions reflect the social division of labor into producers and consumers and therefore are ultimately predicated on the contradiction between the ruling and ruled classes. If passive consumers were to become active citizens and producers, they would have to take charge of this untapped technological potential, install themselves as producers, and thereby "bring the communications media, which up to now have not deserved the name, into their own."¹⁰

This notion of liberating media "into their own" provoked a vociferous response from Jean Baudrillard, who in his essay "Requiem for the Media" charged Enzensberger with regurgitating the old Marxist delusion that underneath the capitalist veneer of exchange value resides a more natural use value waiting to be uncovered.¹¹ It was erroneous to believe, Baudrillard argued, that media are neutral technological systems whose social impact depended upon who uses them to say what; rather, it was "in their form and very operation" that they induced social relations. In other words, media are "not *coefficients* but *effectors* of ideology"¹²—which was Baudrillard's way of terminologically updating McLuhan's mantra that the medium is the message. In short, media do not mediate; they are anti-mediatory and intransitive. The "revolutionary" events of May '68, Baudrillard claimed, could not survive their mediation because "transgression and subversion never get 'on the air' without being subtly negated as they are; transformed into models, neutralized into signs, they are eviscerated of their meaning."¹³

In his attempt to show that media destroy the aura of an event, Baudrillard was, in essence, transferring structuralist and semiotic explanations of the production and maintenance of meaning and ideology from texts and signs to media. To him, writing in France in the early 1970s, it was clear that "ideology" could no longer be constructed as an essence of social interests or manipulative intents fabricated at a hidden center and then channeled through the media. Just as recent scholarship had analyzed ideology and meaning as the result of an interplay of signs, a media theory inspired by structuralism and semiotics saw them to be inherent in the ways media operated. "'The medium is the message' operates a transfer of meaning onto the medium itself qua technological structure."¹⁴

However little they otherwise may have in common, the work of Kittler and Baudrillard is located on the same intellectual trajectory. Both reconceptualize the media issue in terms of recent theoretical developments commonly grouped together as "French theory." Superficially, Kittler's work can be seen as a merger of Foucault, Lacan, and McLuhan, that is, a combination of discourse analysis, structuralist psychoanalysis, and first-generation media theory. To distinguish it from the more generic terms "media studies" and "media theory," we will call it "media discourse analysis"¹⁵ and present it in the following discussion as a distinctly German offshoot of poststructuralism that can only be understood against the German reception in the 1970s of the French triumvirate of Derrida, Foucault, and Lacan (with Virilio to be added later).

"LACAN CAN AND DERRIDA DA": THE FRENCH ACROSS THE RHINE

When poststructuralist theorizing crossed the Rhine from France into Germany in the late 1970s, it was not received with open arms. It is perhaps unsurprising that the harshest attacks against it were directed not at the *maître penseurs* themselves but at their German adepts. One outspoken critic chastised the work of the latter as "Lacancan and Derridada," an "unconditional and frequently uncritical adaptation to French theories" afflicted by a "congestion of linguistic expressiveness" that "above all desires one thing—not to be understood."¹⁶ One no doubt can find similar sentiments in reaction to North American appropriations of poststructuralism, but to understand what Kittler says—and why he chooses to say it with a certain panache—it is necessary to describe briefly what distinguishes the German reception of poststructuralism from its North American counterparts.¹⁷

In Germany there was no signature event such as Derrida's presentation of "Structure, Sign, and Play in the Discourse of the Human Sciences" at Johns Hopkins, no "Yale School," and no "deconstruction" to speak of. There was instead, in Robert Holub's words, "a coterie of scholars"—among them Kittler, the philosopher Norbert Bolz, and the Germanist Jochen Hörisch—who had no "spiritual father" or "intellectual center" and at some point became intrigued with French theory.¹⁸ Whereas in North America theory profited from a form of intellectual Reaganomics, a trickle-down effect by which the work of reputable scholars at allegedly superior institutions percolated downward and outward, its German reception tended to start at the academic margins—with students, junior faculty, reading groups, small publishing houses—and then gradually, and

against notable resistance, move inward and upward. To a large extent resistance came from the Left, since what Derrida, Lacan, Foucault, and their disciples had to say seemed at first incompatible with positions inspired by Marx or the Frankfurt School (unlike today, where so much research goes into showing how like-minded they are). At times the struggle that ensued was motivated less by theory than by power. As had already happened in France in the wake of the events of 1968, the established Left was in danger of losing ground with one of its most important constituencies. If structuralist and poststructuralist criticism of Marx and his progeny prevailed, then disenchanted students, artists, and intellectuals might no longer be at the more-or-less exclusive disposal of the Left. Who, for example, could take Herbert Marcuse's sanguine Freudian-Marxist brew seriously after reading Lacan?¹⁹ Faced with this challenge, the Left, which itself had faced stiff opposition during its fight for recognition, was quick to resort to the ubiquitous *Irrationalismusvorwurf*—that is, it accused French-inspired theorizing of downplaying history, eradicating the subject, and conjuring up impersonal, determinist symbolic chains and networks of irrationalism. Given National Socialism's mobilization and exploitation of the strong antirational tradition in German thought, this reproach carries considerable weight in Germany. Kittler has acknowledged the challenge: in a recent interview he described his magnum opus, *Discourse Networks*, as "written in black in every sense."²⁰ This phrase not only refers to the book's typographical appearance or to the fact that it was written in and for the black academic market (that is, outside established schools and trends) but also alludes to the German political color coding that associates black with conservatism.

Not that the Right and Center were any more welcoming, despite the fact that several of the German poststructuralists who later rose to prominence began their careers under the tutelage of well-known traditional literary scholars. (Kittler, for instance, started as an assistant to Gerhard Kaiser, one of the more prominent representatives of the hermeneutic tradition.)²¹ Once again, conflict was probably unavoidable, and once again, it took on a certain edge because the opposing parties, despite their widely differing approaches and terminologies, were not that far removed from one another and were frequently concerned with identical issues. German critics of Derrida, especially those steeped in the hermeneutic tradition, have repeatedly claimed that he is not particularly original if read closely. His indebtedness to Heidegger is well known, and yet an assumption persists—explored in great detail in Manfred Frank's study *What Is Neostructuralism?*—that questions regarding the mediation of reference

and subjectivity by and through language were already addressed, and at least partly solved, in the writings of Schleiermacher and several post-Kantian German idealist and Romantic philosophers.²² In short, what was good about French poststructuralism was not new, and what was new was not good.

The poststructuralists responded with a threefold approach. First, leaving aside the purported inferiority of French philosophers of 1950–80 to their German counterparts of 1790–1820, they argued that the very fact that French poststructuralism was posing the same questions and dealing with related issues urged for its increased reception rather than its dismissal. Second, instead of neutralizing the French poststructuralists by referring them back to their German antecedents, they proposed that the latter be radicalized by focusing on those instances where they anticipated or came close to the solutions put forward by French theorists. This strategy was adopted, for example, by Hörisch, who plays off the brash, young (as it were, proto-French), antihermeneutic Schleiermacher against the elderly, cryptohermeneutical Schleiermacher so dear to the established German tradition.²³ It also helps to explain why, since the 1977 publication of the collection *Urszenen*, German poststructuralism has been so drawn to “difficult” texts and writers of that era.²⁴ If Hölderlin, Kleist, or even the long novels of Goethe are seen as inspired by, playing with, and taking apart the proto-French aesthetic and philosophic axioms of their day, then discourse analysis, Lacanian theorizing, and Derridean deconstruction become the more appropriate tools for dealing with them.²⁵

The third and most straightforward approach consisted in informing traditional hermeneutic scholars that they were unable to face the true dimensions of the French theory offerings, an objection that sometimes took the shape of gleefully or defiantly confirming their worst suspicions of what poststructuralism is up to. In his critique of *What Is Neostructuralism?* Kittler honed in on Frank’s fearful assumption that French theorists were promoting the “dream of a subjectless machine.”²⁶ Discussing Lacan’s famous account of human consciousness as a camera that captures and stores images even when nobody is around,²⁷ Frank had argued that Lacan, in the final analysis, could not do without some kind of subject endowed with self-reflective consciousness. Not so, Kittler responded: this mechanical Polaroid consciousness was all Lacan had in mind because his technological materialism, just like Freud’s, “reasoned only as far as the information machines of his era—no more and no less.”²⁸ By emphasizing Lacan’s frequent references to circuits and feedback (not to mention Lacan’s refusal to discuss the subject of language with anybody

not versed in cybernetics), Kittler moved Lacan out of the hermeneutically soiled realms of old-style psychoanalysis, philosophy, and literary scholarship and into the far more appropriate posthermeneutic domain of information theory. Nowadays, Kittler noted disapprovingly, even newspapers regurgitate Lacan’s famous dictum that the unconscious is the discourse of the other, “but that this discourse of the other is the discourse of the circuit is cited by no one.”²⁹

To associate French poststructuralism with modern media technology has become a commonplace in current North American literary theory. George Landow’s *Hypertext*, with its programmatic subtitle, *The Convergence of Contemporary Critical Theory and Technology*, asserts that hypertext presents an “almost embarrassingly literal embodiment” of Derrida’s emphasis on de-centering and Barthes’s conception of the readerly versus the writerly text.³⁰ Gregory Ulmer claims that the grammatical works of Derrida “already reflect an internalization of the electronic media, thus marking what is really at stake in the debate surrounding Western metaphysics.”³¹ Eugene Provenzo and Mark Poster, in turn, link Foucault’s analysis of surveillance techniques to databases and electronic control procedures.³² It now appears that these links, analogies, and correspondences also can be projected back in time. What hypertext and hypermedia are to poststructuralism, cybernetics was to structuralism and semiotics, and in both instances the human implication has been profound:

Without passing through linguistics at all, Norbert Wiener (inventor of cybernetics) had already as early as 1948 defined man without reference to interiority as a communication machine, a machine for exchanging information with his environment. The idea that all reality must be broken up in the final analysis into a set of relations between elements came together by an entirely different angle with the structural postulate, imputing every effect of meaning to a combination of minimal units or pertinent traits of a determinate code. While resolutely aware of it, French semiology was metaphorizing and “culturalizing” the American mechanist paradigm.³³

In a chapter entitled “Structures—Discourses—Media” in his book *Philosophie nach ihrem Ende* (Philosophy after its end), Bolz describes the “clear paradigm sequence” that has ruled French theory production since Saussure. First, Saussure’s insight that the meaning of signs is an effect of differential articulation reappears in Lévi-Strauss to describe the human mind as a set of matrices for the emergence of structures, while Lacan, combining structural linguistics with cybernetic theory, “trans-

forms structural psychoanalysis into a media theory of the unconscious."³⁴ In the second stage, Foucault builds on this link to describe the relays and circuits of discursive practices. Finally, Paul Virilio's "dromological" and "chronopolitical" analyses—which will be of great importance to the "Film" section of *Gramophone, Film, Typewriter*—link the mutation of human perception to changes in military media technology. Step 1: We recognize that we are spoken by language. Step 2: We understand that language is not some nebulous entity but appears in the shape of historically limited discursive practices. Step 3: We finally perceive that these practices depend on media. In short, structuralism begot discourse analysis, and discourse analysis begot media theory.

Media, then, are (at) the end of theory because in practice they were already there to begin with. Accordingly, Kittler ties the emergence of structuralism to the introduction of the typewriter, and he criticizes Foucault for neither reflecting on the mediality of the discursive practices he analyzed nor going beyond the confines of the Gutenberg Galaxy. Thus, whereas Foucault's archives are based on the hegemony of written language, on the silent assumption that print is the primary (if not the only) carrier of signification, Kittler's archeology of the present seeks to include the technological storage and communication media of the post-print age(s). "Even writing itself, before it ends up in libraries, is a communication medium, the technology of which the archeologist [Foucault] simply forgot. It is for this reason that all his analyses end immediately before that point in time at which other media penetrated the library's stacks. Discourse analysis cannot be applied to sound archives and towers of film rolls" (5).

Media are the alpha and omega of theory. If media do indeed "determine our situation," then they no doubt also determine, and hence configure, our intellectual operations. One could easily reappropriate Derrida's much-deferred pronouncement *il n'y a pas de hors-texte* and suggest that the fundamental premise of media discourse analysis is *il n'y a pas de hors-media*.

DISCOURSE NETWORKS: FROM MOTHER TONGUES TO MATTERS OF INSCRIPTION

Kittler's intellectual career can be broken down into three parts, each roughly covering one decade. In the 1970s, his focus was on discourse analysis; in the 1980s, he turned his attention to the technologizing of discourse by electric media; and in the 1990s, to its subsequent digitization.

Beginning as a *Privatdozent* in Freiburg, he dealt with the so-called Age of Goethe (1770–1830) in most of his early work, concentrating on canonical authors like Lessing, Schiller, and Goethe himself. The influence of Foucault and Lacan is obvious—his highly demanding reading of E. T. A. Hoffmann's "The Sandman" ranks as "the most compressed and programmatic of all applications of Lacan"³⁵—as is the attempt to fuse the two. One of his principal goals is to relate Lacanian notions of subject (de)formation, specifically within the framework of the nuclear family that emerged in the second half of the eighteenth century, to the discursive practices that came to regulate the new roles and relationships of mothers, fathers, and children on the one hand and authorities and subjects on the other. Looking back at this early work, Kittler emphasized that the nuclear family between the ages of the Enlightenment and Romanticism was "not a fact of social history" but a "code," a "veritable discourse machine" that produced all the secrets and intimacies that were subsequently mistaken as essential components of an equally essential human nature. Hence, texts such as Lessing's family dramas or Goethe's *Bildungsromane* have to be read as instances of a cultural inscription program: German literature around 1800, so often hailed as the apex of Germanic cultural output culminating in the twin peaks of Goethe and Schiller, becomes a means of programming people, part of the overall recoding enterprise that ushered in an age that saw not only the spread of the nuclear family but also the growth of literacy, the notion of authorship as the expression of ineffable individuality and *Innerlichkeit*, and the preindustrial mobilization of the modern nation state on all ideological, administrative, and military levels.³⁶ "The official locus of production for German Poetry was the nuclear family; scholars saw to its multiplication; and a science that claimed the title Science provided its justification."³⁷

The 1980s (during which Kittler moved from Freiburg to Bochum) brought a considerable broadening of his interests and increasing forays into non-German, and non-Germanist, areas. Always a prolific scholar, he produced essays on (among others) Nietzsche, Pink Floyd, Peter Handke, Dashiell Hammett, Bram Stoker, Richard Wagner, and Thomas Pynchon.³⁸ More importantly, "media"—a word rarely used in the previous decade—made a grand entry, and with good reason. If literature is programming, how exactly does it proceed? Obviously, it involves the production, circulation, and consumption of texts. Interpreting those texts, that is, isolating and forcing them to reveal something beyond the materialities and orders of communication that produced them in the first place, will be of little help. Instead, discourse analysis begins by simply

registering them as material communicative events in historically contingent, interdiscursive networks that link writers, archivists, addresses, and interpreters.³⁹ In so doing, discourse analysis does not deny interpretation; it merely concentrates on something more interesting. First of all, it focuses on the brute fact that certain texts *were* produced—rather than not, and rather than others. Second, it shows that these texts, regardless of the variegated social practices to which they may be related, exhibit certain regularities that point to specific rules programming what people can say and write.

Third and perhaps most surprising, discourse analysis highlights the fact that, given the growing social complexity and expanding communicative networks of the early 1800s, standardized interpretation appears to have been possible and, indeed, was ever more desirable. The hermeneutic master plan seems to have been to offset increasing social complexity with interpretative homogenization. This plan can only work, however, if people are trained to work with language in standardized ways that downplay its changing materiality. For instance—to choose one example of importance to Kittler—people have to be trained to read the smooth and continuous flow of ink on paper as the manifestation of an equally smooth and continuous flow of personality. In Hegel's words, the essence of individuality has its "appearance and externality" in handwriting. But people also have to be trained to disregard the change from handwriting to print.⁴⁰ This point, then, is crucial: beginning in the Age of Goethe—not coincidentally one of the formative periods of German history—stable cultural references such as authorship, originality, individuality, and *Geist*, all accessible by way of standardized interpretation practices, cut through and homogenized increasing social complexity; this could only occur, however, because a naturalized language now seen as a lucid carrier of meaning cut through and homogenized the different media. In short, people were programmed to operate upon media in ways that enabled them to elide the materialities of communication. But if there is any truth to what media theory, following Innis, Ong, and McLuhan, has been claiming for decades, media have their own "biases" and "messages" that must be taken into account. The question of how people operate upon media thus has to be complemented by the equally important question of how media operate upon people. Subsequently, discourse analysis has to be expanded as well as supplemented by media theory. Scholars such as Kittler, Bolz, and Hörisch, as it were, played Marx to Foucault's Hegel: they pulled discourse analysis off its textual and discursive head and set it on its media-technological feet.

The new dimensions of Kittler's analysis are contained in a nutshell in the important essay "Autorschaft und Liebe" (Authorship and love), first published in 1980 as part of a volume polemically and programmatically entitled *Austreibung des Geistes aus den Geisteswissenschaften: Programme des Poststrukturalismus* (Expulsion of the Spirit from the humanities: programs of poststructuralism). The essay is organized around the sharp contrast between two very different body-medium links that represent two very different ways that writers evoked and readers experienced love. First, Kittler presents Paolo and Francesca, Dante's infernal couple, whose doomed love drastically short-circuits texts and bodies, leading them to physically (re)enact the adulterous love story they had been reading out loud. (Their narrative, in turn, manages to physically knock out their spellbound listener.) Against this Kittler sets the equally ill-fated love recorded by Goethe of Werther and Lotte, who celebrate a far less physical but no less delirious communion by allowing their souls to share the spirit of Klopstock's beloved poetry.⁴¹ Impassioned bodies cede to yearning souls, nameless desires communicated by an anonymous text make way for the spirit of authorship, and manuscripts to be read aloud in the company of others are replaced by printed books to be devoured in solitary silence: the contrastive technique employed here is reminiscent of Foucault, whose presence is equally evident in the structural macrolevel of *Discourse Networks*, first published in German in 1985 (and now in its third, revised edition).

Indeed, in discussing *Discourse Networks* Kittler confirmed that Foucault, as "the most historical" of the French triumvirate, is the most important to him—more important than Lacan and far more than Derrida.⁴² As David Wellbery points out in his excellent foreword to the English translation, there are substantial affinities. In *The Order of Things*, Foucault periodizes European conceptions of life, labor, and language on the basis of three generalized "epistemes": the "Renaissance," the "classical," and the "modern." Kittler, in turn, presents three historical moments corresponding more or less to Foucault's: the "Republic of Scholars" is the approximate equivalent to Foucault's "Renaissance" and "classical" epistemes; the historical datum "1800" correlates roughly to Foucault's "modern" period; and "1900" designates a discourse network that matches Foucault's emergent postmodernism.⁴³ In Kittler's usage, "discourse network" designates "the network of technologies and institutions that allow a given culture to select, store, and produce relevant data."⁴⁴ The term is very extensive: it attempts to link physical, technological, discursive, and social systems in order to provide epistemic snap-

shots of a culture's administration of power and knowledge. Not unlike the approach taken in Jonathan Goldberg's acclaimed study *Writing Matter*, the aim is to combine a "Foucauldian" analysis of historically contingent rules and regulations, which allow or force people to speak in certain ways, with the examination of equally contingent physical and mental training programs and the analysis of the contemporary media technologies that link the two.

Although Kittler leaves his "Republic of Scholars" largely undeveloped, the discursive field of "1800"—the period known as German Classicism, Romanticism, or the Age of Goethe—is described in terms of the spiritualized oralization of language. Kittler argues that the process of alphabetization came to be associated with the Mother as an embodiment of Nature—more specifically, with "the Mother's mouth," now reconceptualized as an erotic orifice linking sound, letter, and meaning into a primary linguistic unit charged with pleasure. German children learned to read through both the physical and sexual immediacy of and proximity to the *Muttermund* (which in German signifies both the literal mouth of the mother as well as the opening of the uterus). By associating erotic pleasure with the act of composition and rereading, and with Mother Nature more generally, writers of the Classical and Romantic periods understood language as a form of originary orality, a transcendental inner voice superior and anterior to any form of written language. In the same way, Woman was constructed as the primordial site of linguistic origin and inspiration, which urged male writers such as Goethe both to serve as state bureaucrats and to produce texts for a predominantly female audience. And prominent educators addressed mothers as the primary targets of children's socialization into language, initiating pedagogical reforms that centered on the pronunciation-based acquisition of reading and writing. Origiary orality, in that sense, was the effect of a feedback loop involving didactic techniques, media reform, and a peculiar surcharge of the maternal imago.

The discourse network of 1800 depended upon writing as the sole, linear channel for processing and storing information. For sights, sounds, and other data outside the traditional purview of language to be recorded, they had to be squeezed through the symbolic bottleneck of letters, and to be processed in meaningful ways they had to rely on the eyes and ears of hermeneutically conditioned readers. Reading, in that sense, was an exercise in scriptographically or typographically induced verbal hallucinations, whereby linguistic signs were commuted into sounds and images. With the advent of phonography and film, however, sounds and

pictures were given their own, far more appropriate channels, resulting in a differentiation of data streams and the virtual abolition of the Gutenberg Galaxy. Language's erstwhile hegemony was divided among media that were specific to the type of information they processed. Writing, a technology of symbolic encoding, was subverted by new technologies of storing physical effects in the shape of light and sound waves. "Two of Edison's developments—the phonograph and the kinetoscope—broke the monopoly of writing, started a non-literary (but equally serial) data processing, established an industry of human engineering, and placed literature in the ecological niche which (and not by chance) Remington's contemporaneous typewriter had conquered."⁴⁵

But if, in the discourse network of 1800, Woman is constructed as the source of poetic language, how is this construct affected by the new differentiation of data processing? The discourse network of 1900, Kittler argues, demystifies the animating function of Woman and the conception of language as naturalized inner voice. No longer reducible to "the One Woman or Nature," the women of the discourse network of 1900 are "enumerable singulars,"⁴⁶ released from their supplemental function to the male creative process. No longer destined to engender poetic activity in male writers and subsequently to validate the (male) author-function by making sense of the texts written for their consumption, women now become producers themselves. While male writers, deprived of a female decoding network, devolved from inspired poets to simple word processors, women began to process texts themselves. The sexually closed circuits of the Gutenberg Galaxy's old boys' network are severed. Exchanging needlework for typewriters and motherhood for a university education, women commenced to fabricate textures of a different cloth and thus asserted equal access to the production of discourse. Yet, while the typewriter did away with either sex's need for a writing stylus (and in the process giving women control over a writing machine—qua-phallus), it reinscribed women's subordination to men: women not only became writers but also became secretaries taking dictation on typewriters, frequently without comprehending what was being dictated.

As a correlate to the Edisonian specification of inscription technologies, writers became increasingly aware of the materiality of language and communication. Thought of around 1800 as a mysterious medium encoding prelinguistic truth, writing in the Age of Edison began to be understood as only one of several media possessed of an irreducible facticity. In Mallarmé's succinct phrase, "one does not make poetry with ideas, but with *words*," bare signifiers that inverted the logic of print as a vehicle of

linguistic communication and instead emphasized "textuality as such, turning words from means to ends-in-themselves."⁴⁷ Fundamentally, these words were nothing but marks against a background that allowed meaning to occur on the basis of difference. What the typewriter had instituted, namely, the inscription of (standardized) black letters on white paper, was replicated in the processing modes of both the gramophone and film. The gramophone recorded on a cylinder covered with wax or tinfoil, and eventually on a graphite disk, whereas film recorded on celluloid; but both recorded indiscriminately what was within the range of microphones or camera lenses, and both thereby shifted the boundaries that distinguished noise from meaningful sounds, random visual data from meaningful picture sequences, unconscious and unintentional inscriptions from their conscious and intentional counterparts. This alternation between foreground and background, and the corresponding oscillation between sense and nonsense on a basis of medial otherness, a logic of pure differentiability—which on a theoretical level was to emerge in the shape of Saussure's structural linguistics—typifies the discourse network of 1900. The transcendental signified of Classical and Romantic poets has ceded to the material signifier of modernism.

Bewundert viel und viel gescholten (much admired and much admonished): Helen's iambic self-diagnosis in the second part of Goethe's *Faust* comes to mind when assessing the reception of *Discourse Networks*. To some, it is more than a book of genius and inspiring breadth; it is a watershed beyond which the study of literature and culture must follow a different course. In a discussion of Nietzsche, the mechanized philosopher who more than any other heralded the posthermeneutic age of the new media, Kittler quotes the poet-doctor Gottfried Benn: "Nietzsche led us out of the educated and erudite, the scientific, the familiar and good-natured that in so many ways distinguished German literature in the nineteenth century." Almost exactly one hundred years later, Kittler's work appears to some, particularly among the younger generation, as what is leading us out of the similarly stagnant pools of erudition and familiarity that have come to distinguish German, and not only German, literary scholarship. To others it is a sloppy mosaic that runs roughshod over more nuanced, contextualized, and academically acceptable research undertaken in cultural studies, literary history, and the history of science, not to mention feminism. Critics might instead be tempted to apply the second half of Benn's statement (not quoted by Kittler) to Kittler's role in contemporary scholarship: "Nietzsche led us . . . into intellectual refinement, into formulation for the sake of expression; he introduced a con-

ception of artistry into Germany that he had taken over from France."⁴⁸ And finally, there is a third reaction, one Helen could not complain of: the book is much ignored. This is, no doubt, partly due to the difficulties involved; to an audience outside of German studies, the exclusively German focus of the first part, describing the discourse network of 1800, poses considerable problems. *Gramophone, Film, Typewriter*, however, is far more accessible by virtue of its focus on the *Mediengründerzeit*—a coinage derived from the historiographical term *Gründerzeit*, which denotes the first decades of the Second German Empire founded in 1871, and which Kittler reappropriates to refer to the "founding age" of new technological media pioneered by Edison and others during the same time period.

MARSHALL MCNIETZSCHE: THE ADVENT OF THE ELECTRIC TRINITY

At first glance, *Gramophone, Film, Typewriter* appears to be a lengthy addendum to the second part of *Discourse Networks* ("1900"), providing further and more detailed accounts of the ruptures brought about by the differentiation of media and communication technologies. The book could be understood as a relay station that mediates—Kittler uses the more technical term *verschalten* (to wire)—various forgotten or little-known texts on the new electric media and the condition of print in the age of its technological obsolescence. Kittler reprints, in their entirety, Rilke's essay "Primal Sound," the vignettes "Goethe Speaks into the Phonograph" and "Fata Morgana Machine" by Salomo Friedlaender (a.k.a. Mynona), Heidegger's meditation on the typewriter, and Carl Schmitt's quasiphilosophical essay "The Buribunks," among others, passing from one to another through his own textual passages. In that sense, *Gramophone, Film, Typewriter* is engineered to function as a kind of intertextual archive, rescuing unread texts from oblivion. Because these texts were written between the 1890s and the 1940s, that is, in the immediate presence of a changing media ecology, they registered with particular acuity the cultural effects of the new recording technologies, including the erosion of print's former monopoly. Print reflects, within the limits of its own medium, on its own marginalization.

The overall arrangement is simple. As the title indicates, the book comprises three parts, each dedicated to one of the new information channels. What distinguishes the post-Gutenberg methods of data processing from the old alphabetic storage and transmission monopoly is the

fact that they no longer rely on *symbolic mediation* but instead record, in the shape of light and sound waves, visual and acoustic *effects of the real*. "Gramophone" addresses the impact and implications of phonography, "Film" concentrates on early cinematography, and "Typewriter" addresses the new, technologically implemented materiality of writing that no longer lends itself to metaphysical soul building. For those more interested in theoretical issues, and technological extensions of poststructuralism in particular, it will be important to keep in mind that Kittler relates phonography, cinematography, and typing to Lacan's axiomatic registers of the real, the imaginary, and the symbolic. In brief, writing in a postprint environment is associated with the symbolic, with linguistic signs that have been reduced to their bare "materiality and technicity" and comprise a "finite set without taking into account philosophical dreams of infinity" (15). The imaginary, by contrast, is linked with the technology of film, because the sequential processing of single frames into a projected continuity and wholeness corresponds to Lacan's mirror stage—that is, the child's experience of its imperfect body (in terms of motor control and digestive function) as a perfect reflection, an imagined and imagistic composition in the mirror. The real is in turn identified with phonography, which, regardless of meaning or intent, records all the voices and utterances produced by bodies, thus separating the signifying function of words (the domain of the imaginary in the discourse network of 1800) as well as their materiality (the graphic traces corresponding to the symbolic) from unseeable and unwritable noises. The real "forms the waste or residue that neither the mirror of the imaginary nor the grid of the symbolic can catch: the physiological accidents and stochastic disorder of bodies" (16). Hence, the distinctions of Lacanian psychoanalysis, what Bolz calls a "media theory of the unconscious," appear as the "theory" or "historical effect" of the possibilities of information processing existent since the beginning of this century.⁴⁹

Readers will find much that is familiar from *Discourse Networks*: Kittler continues to pay sustained attention to the coincidence of psychoanalysis and Edisonian technology, and includes a suggestive discussion of "psychoanalytic case studies, in spite of their written format, as media technologies" (89), since they adhere to the new, technological media logic positing that consciousness and memory are mutually exclusive. He further develops the contradictory and complicated relays between gender and media technology, including a "register" of this century's "literary desk couples" (214)—couples who, according to Kittler, have exchanged lovemaking for text processing. And once again, Kittler questions a mot-

ley crew of friendly and unfriendly witnesses—among them Nietzsche, Freud, Kafka, Rilke, Ernst Jünger, Roger Waters, and William Burroughs—to ascertain what exactly happened when the intimate and stately (that is, increasingly quaint and cumbersome) processing technology called writing was challenged, checked, modified, and demoted by new storage and communication technologies. Nietzsche in particular takes on a key role as the first philosopher to use a typewriter and thus as the first thinker to fully recognize that theoretical and philosophical speculations are the effects of the commerce between bodies and media technologies. Nietzsche had this recognition in mind, Kittler suggests, when he observed in one of his few typed letters that "Our writing tools are also working on our thoughts" (*Unser Schreibzeug arbeitet mit an unseren Gedanken*). When the progressively myopic retired philologist began using a typewriter—a Danish writing ball by Malling Hansen that did not allow him to see the letter imprinted at the moment of inscription—he not only anticipated *écriture automatique* but also began to change his way of writing and thinking from sustained argument and prolonged reflection to aphorisms, puns, and "telegram style." After abandoning his malfunctioning machine, Nietzsche elevated the typewriter itself to the "status of a philosophy," suggesting in *On the Genealogy of Morals* that humanity has shifted away from its inborn faculties (such as knowledge, speech, and virtuous action) in favor of a memory machine. Crouched over his mechanically defective writing ball, the physiologically defective philosopher realizes that "writing . . . is no longer a natural extension of humans who bring forth their voice, soul, individuality through their handwriting. On the contrary, . . . humans change their position—they turn from the agency of writing to become an inscription surface" (210).

Nietzsche—or, better, this technologically informed, poststructuralist reading of Nietzsche—points to an elementary trope governing Kittler's narrative. Regardless of its convictions or ideological direction, poststructuralism claims to reveal many key concepts (such as the Subject, Authorship, Truth, Presence, "so-called Man," and the Soul) to be a kind of conceptual vapor or effect that arises from, and proceeds to cover up, underlying discursive operations and materialities. In posthermeneutic scholarship such as Kittler's, these effects are not so much denied as bracketed through a shift of focus toward certain external points—in particular, bodies, "margins," power structures, and, increasingly, media technologies—in the interstices of which those phantasms had come to life in the first place. Thus, both Nietzsche's and Kittler's intellectual careers consist in pushing the brackets together, until everything that had

frolicked between them is squeezed out of existence. When a camera (as in Lacan's example) does all the registering, storing, and developing on its own, there is no need for an intervening Subject and its celebrated Consciousness; when the inspiring maternal imago of Woman turns into a secretary, there is no need for binding Love; when the phonograph mercilessly stores all that people have to say and then some, there might be an unconscious but no meditating Soul. The sad spectacle of the allegedly insane Nietzsche in the last ten years of his life, "screaming inarticulately," mindlessly filling notebooks with simple "writing exercises," and "'happy in his element' as long as he had pencils,"⁵⁰ is where the converging brackets meet. It is, as it were, the ground zero of all hermeneutically inclined theorizing: on the one hand, a body in all its vulnerable nakedness; on the other, media technologies in all their mindless impartiality; and between them nothing but the exchange of noise that only a certain amount of focused delusion can arrange into deeper meanings.

But as we know only too well, the switch from the Gutenberg Galaxy to Edison's Universe has been followed by the more recent move into the Turing World. With obedience to this succession, *Gramophone, Film, Typewriter* begins with Edison's phonograph and ends with Turing's COLOSSUS, a move already hinted at in the first paragraph of "Gramophone." Shifting from tinfoil and paraffin paper to charge-coupled devices, surface-wave filters, and digital signal processors, the book moves away from "technological media" such as the gramophone and kinoscope to the computer, and it thus signals the beginning of the third stage in Kittler's intellectual career (during which he was installed as Professor of Aesthetics and Media History at Berlin's Humboldt University). If Kittler's passage from the 1970s to the 1980s, with his progressive grounding of discourse in the materialities of communication, is analogous to the switch from the symbol-based discourse network of 1800 to the technology-based discourse network of 1900, then his passage from the 1980s to the 1990s approximates the switch from the electric discourse network of 1900 to an electronic "systems network 2000," with its reintegration of formerly differentiated media technologies and communication channels by the computer, the medium to end all media. Once again, his essays signal an increasing movement of interest toward computer hardware and software, the archeology of the digital takeover (Kittler edited and introduced the German translation of Alan Turing's works), and military technology and strategy.⁵¹ All of this first appears, fully orchestrated, in the concluding passages of *Gramophone, Film, Typewriter*.

Finally, a word about style. A book on the materialities of communi-

cation can hardly be oblivious to its own materialities and historical situatedness, so it comes as no surprise that *Gramophone, Film, Typewriter* itself carries the imprint of the media of which it speaks. The mosaic-like qualities of much of the text, for instance, the sometimes sudden shifts from one passage or paragraph to another and, alternately, the gradual fade-outs from Kittler's own texts to those of his predecessors, derives, in both theory and practice, from the jump-cutting and splicing techniques fundamental to cinema. But media technologies could also be invoked to explain Kittler's idiosyncratic stylistics on the micro-level of the individual sentence or paragraph. Long stretches are characterized by a quality of free association—not to say, automatic writing—that once again could be labeled cinematic, with one idea succeeding the other, strung together by a series of leitmotifs. One such leitmotif is the aforementioned dictum by Nietzsche, "Our writing tools are also working on our thoughts," which Kittler quotes repeatedly, suggesting certain stylistic and intellectual affinities with his mechanized predecessor. (And who could question their similarities? Nietzsche was the first German professor of philology to use a typewriter; Kittler is the first German professor of literature to teach computer programming.) Certainly, Kittler's prose is somewhat Nietzschean in that syntactic coherence frequently yields to apodictic aperçus, sustained argument to aphoristic impression, and reasoned logic to sexy sound bites. This enigmatic prose is further exacerbated by stylistic peculiarities all Kittler's own. Most noticeable among these is the frequent use of adverbs or adverbial constructions such as *einfach*, *einfach nur*, *bekanntlich*, *selbstredend*, or *nichts als* (variously translated as "merely," "simply," "only," "as is known," and "nothing but"), as in this explanation of the computerized recording of phonemes: "The analog signal is simply digitized, processed through a recursive filter, and its autocorrelation coefficients calculated and electronically stored" (75). Such sentences (call them Kittler's Just So Stories) are, with casual hyperbole, meant to suggest the obvious, bits of common knowledge that don't require any elaboration, even though (or precisely because) their difficult subjects would urge the opposite. Similarly, Kittler is fond of separating consecutive clauses (in the German original, they tend to lead off with *weswegen*) from their main clauses, as in this explanation of the physiological bases of the typewriter: "Blindness and deafness, precisely when they affect speech or writing, yield what would otherwise be beyond each: information on the human information machine. Whereupon its replacement by mechanics can begin" (189). Despite their casual, ostensibly unpolished, conversational qualities, these clauses almost always refer to im-

portant points. Which is why sentences like this simply deserve special attention.

Not surprisingly, Kittler's rhetorical bravado has drawn sharp criticism. One critic attributed the paradox that Kittler confidently employs writing to ferret out superior and more advanced media technologies to "stylistic means consciously used for the production of theoretical fantasy literature."⁵² To Robert Holub, the

single most disturbing factor of Kittler's prose [is] the style in which it is written. Too often arguments seem obscure and private. One frequently has the impression that its author is writing not to communicate, but to amuse himself. His text consists of a tapestry of leitmotifs, puns, and cryptic pronouncements, which at times makes for fascinating reading, but too often resembles free association as much as it does serious scholarship.⁵³

As with McLuhan, Kittler's prose carries a flashy dexterity that makes many claims seem invulnerable to substantive critique precisely because of their snappy and elegant phrasing. To this litany one could add Kittler's penchant for maneuvering between engineering parlance and medical jargon, as well as his use of a whole register of specialized terminologies that, in Holub's estimation, suggest "a semblance of profundity"⁵⁴ but do not ultimately contribute to a sustained argument. To top it off, a growing number of younger scholars have modeled their writing on Kittler's very personal style: to the delight of connoisseurs of German academese, *Kittlerdeutsch* is already as distinct an idiom as the equally unmistakable *Adornodeutsch*.

Rather than take Kittler to task for his virtuoso play on the keyboard of poststructuralist rhetoric, we would urge consideration of his writing style in the larger context of the tradition he writes in—and, more important, against. Clearly, he cultivates a cool, flippant, and playful style to subvert the academic ductus of German university prose, a tongue-in-cheek rhetoric to thumb his nose at the academic establishment. If style, as Derrida reminds us (not coincidentally, in his analysis of Nietzsche's writing) is always "the question of a pointed object . . . sometimes only a pen, but just as well a stylet, or even a dagger,"⁵⁵ then Kittler is certainly twisting his own stylus into the body of German intellectual discourse, which has kept alive for far too long what he feels to be the obsolete hermeneutic tradition. To counteract the widespread use of stiff and lugubrious academic prose, he indulges in stylistic *jouissance*, a spirited playfulness meant to assault and shock conventional scholarly sensibilities. And indeed, what better way is there to debunk highfalutin theories

than a wry recourse to the materialities of communication?⁵⁶ No less than the philosopher with a hammer of a century ago, who smashed notions of selfhood and forged a style of his own by hammering on the keys of his writing ball, Kittler plays the *enfant terrible* of the German humanities who pummels literary-critical traditions with a rhetorical freestyle all his own. Indeed, to paraphrase Nietzsche, the inscription technologies of the present have contributed to Kittler's thinking.

ONLY CONNECT: THEORY IN THE AGE OF INTELLIGENT MACHINES

But Friedrich Nietzsche is not the real hero of *Gramophone, Film, Typewriter*. That part goes to Thomas Alva Edison, a casting decision that Kittler believes will appeal to a North American audience: "Edison . . . is an important figure for American culture, like Goethe for German culture. But between Goethe and myself there is Edison."⁵⁷ Indeed, Kittler credits his sojourns in California—in particular, the requirement that he furnish Stanford undergraduates with updated, shorthand summaries of German history—with providing the impetus to focus on technological issues. Much could be said about the history behind this alleged dichotomy between the United States and Germany, or of the implied distinction between technology and culture, but there can be no doubt that North American readers will find much of interest in *Gramophone, Film, Typewriter*. They will, however, also find cause for irritation beyond the question of style. In conclusion, we will briefly point to five particularly promising or problematic issues for the North American reception of Kittler.

1. *Back to the ends of Man.* After years of "antihumanist" rhetoric, a lull appears to be settling in. A spirit of compromise is afoot in the humanities, and "subjects" are being readmitted into scholarly discourse, provided they behave themselves and do not suffer any self-aggrandizing Cartesian or Kantian relapse. In the face of such imminent harmony, Kittler's rhetoric may seem like a throwback to the heady days of militant antihumanism. His work no doubt invites the plotting of a historical graph in which the human being is reduced from its original function as *homo faber* to an accessory in a scenario of technological apocalypse, in which the "omnipotence of integrated circuits" will lead to a fine-tuning of the self-replicating Turing machine that relegates human ingenuity and idealism to the junkyard of history. Implicit in much of *Gramophone, Film, Typewriter* is the belief that "so-called Man" (*der sogenannte Mensch*)—a mocking phrase repeated like a mantra throughout

the book) is about to disappear as a cognitive and self-determining agent (if such an agent ever existed) and be subsumed by the march of technological auto-sophistication. We are faced with the *Aufhebung* of human processes into silicon microprocessors, the dissolution of human software into computer hardware, for if computer technologies, beginning with the earliest storage facilities, ultimately substitute for physiological impairments and extend the sensory apparatus, then technology's prosthetic function could allow for the complete replacement of the human. Heidegger's notion of technology as *Gestell*, a supportive framing of human being, turns out to be an entire *Ersatz* for human being. Furthermore, it is not only a question of so-called Man disappearing *now*; He was never there to begin with, except as a figment of cultural imagination based on media-specific historical underpinnings. To appropriate Max Weber's famous term, Kittler's work contributes in radical fashion to the ongoing process of *Entzauberung*, or disenchantment.

As we have already indicated, some of Kittler's rhetoric of *épater l'humaniste bourgeois* must be seen against the background of specifically German poststructuralist debates, but we would nonetheless invite readers to consider the possibility that Kittler, especially when viewed in conjunction with North American discussions of subject formation under electronic conditions, is highlighting a crucial point: that the question of the subject has not been answered yet, for as long as we are not addressing it in its media-technological context, we are not even able to come up with the right question.

2. *The stop and go of history.* Not surprisingly, Kittler has been charged with a cavalier attitude toward the vicissitudes of historical change. Instead of tracing and assigning value to the agencies and contingencies that explain the unfolding transformation from one historical moment to another, his broad typologies tend "to obscure those subterranean disturbances that can build into a paradigm shift."⁵⁸ His descriptive and nonevolutionary model favoring sudden ruptures and transformations at the expense of genetic causalities is derived from Foucault, but it takes on a certain edge because epistemological breaks are tied to technological ruptures. The emphasis on discontinuity, however, is less problematic than the obvious technological determinism. As Timothy Lenoir has noted, Kittler explicitly rejects any characterization of his work as "new historicism' or sociology of literature," opting instead to describe his project in terms that "frequently invoke McLuhan's deterministic media theories."⁵⁹

Certainly, Kittler's emphasis on technological breakthroughs to the exclusion of other causative factors is indicative of a sometimes facile neglect of the dynamic complexities of development and evolution—technological or otherwise. But there are important exceptions, most notably his ingenious description of the discourse network of 1800 as the confluence of social practices, such as the role of speaking mothers in the socialization of children, the publicly mandated methodologies of language acquisition, the training of civil servants, and the beginning of hermeneutic literary criticism, among others. The media environment of 1800, therefore, particularly in the forms of writing and interpretation, is clearly seen as a historically specific contingency; it is not, as McLuhanites would have it, part of the makeup of the Gutenberg Galaxy by default. Media determine our situation, but it appears that our situation, in turn, can do its share to determine our media. In some of his more recent essays, Kittler argues that the discourse network of 1800 itself prepared the ground for the technological developments associated with its successor: "Romantic literature as a virtual media technology, as it was supported by the complicity between author, reader, and hero, contributed itself to the subversion of the unchallenged monopoly of print in Europe and to the change of guards from image-based literature to the mass media of photography and film."⁶⁰ Here Kittler appears to retrace the well-known theoretical footsteps of Walter Benjamin, who observed that every historical era "shows critical epochs in which a certain art form aspires to effects which could be fully obtained only with a changed technical standard."⁶¹ At the risk of oversimplifying matters, we could say that Kittler espouses a type of technomaterialism that, albeit only on a formal level, bears some resemblance to Marxism's historical and dialectical materialism. Out of the dialectical exchange between the media-technological "base" and the discursive "superstructure" arise conflicts and tensions that sooner or later result in transformations at the level of media. At a given point in time, that is, during the discourse network of 1800, a widely used storage technology—the printed book—forms the material basis for new, hermeneutically programmed reading techniques that enable readers to experience an "inner movie"; subsequently, a desire arises in these readers to invent, or at least immediately select, the new cinematographic technology that provides images for real.

3. *Arms and no Man.* One element that may strike some readers as disturbing is Kittler's virtual fetishism of technological innovations produced by military applications, spin-offs that owe their existence to mil-

itary combat. Along with Paul Virilio and Norbert Bolz, Kittler derives a veritable genealogy of media in which war functions as the father of all things technical. In *Gramophone, Film, Typewriter* and related essays, he argues that the history of film coincides with the history of automatic weapons technology, that the development of early telegraphy was the result of a military need for the quick transmission of commands and intelligence, that television is a by-product of radar technology, and that the computer evolved in the context of the Second World War and the need both to encrypt and decode military intelligence and to compute missile trajectories. Modern media are suffused with war, and the history of communication technologies turns out to be "a series of strategic escalations."⁶² Needless to say, humans as the subjects of technological innovations are as important as the individual soldier in the mass carnage of the First World War or the high-tech video wars of the present. If we had to name the book that comes closest to Kittler in this respect, it would be Manuel De Landa's eminently readable *War in the Age of Intelligent Machines*, a history of war technology written from the point of view of a future robot who, for obvious reasons, has little interest in what this or that human has contributed to the evolution of the machinic phylum.⁶³

But such a unilateral war-based history of media technology would not meet with the approval of all historians and theorists of communication. James Beniger, for example, has argued that the science of cybernetics and its attendant technologies—the genesis of which Kittler locates in the communicative vicissitudes of the Second World War—is ultimately the result of the crisis of control and information processing experienced in the early heyday of the Industrial Revolution. In the wake of capitalist expansion of productivity and the distribution of goods, engineers had to invent ever-more refined feedback loops and control mechanisms to ensure the smooth flow of products to their consumers, and more generally to regulate the flow of data between market needs and demands (what cybernetics would call output and input). "Microprocessors and computer technologies, contrary to currently fashionable opinion, are not new forces only recently unleashed upon an unprepared society." On the contrary, "many of the computer's major contributions were anticipated along with the first signs of a control crisis in the mid-nineteenth century."⁶⁴ Building upon Beniger, Jochen Schulte-Sasse for one has taken Kittler to task for conflating the history of communication technologies with the history of warfare while ignoring the network of enabling conditions responsible for breakthroughs in technological innovations.⁶⁵

4. *Hail the conquering engineer.* Kittler's work tends to champion a special class of technologists that made both the founding age and the digital age of modern media possible: the engineer. Edison, Muybridge, Marey, the Lumière brothers, Turing, and von Neumann have left behind a world—or rather, have *made* a world—in which technology, in more senses than one, reigns supreme. And one of their fictional counterparts, Mynona's ingenious Professor Pschorr, even manages to "beat" Goethe and get the girl in the short story "Goethe Speaks into the Phonograph." As we have mentioned, Kittler contrasts his "American" attitude to the purported technophobia of German academics, but it may serve readers well to point out that Kittler is speaking from a long German tradition of engineer worship reaching as far back as the second part of Goethe's *Faust* and including immensely successful science fiction novels by Dominik and Kellermann, the construction of the engineer as a leader into a new world in late-nineteenth- and early-twentieth-century technocratic utopias (including Thea von Harbou's *Metropolis*), and, above all, the apotheosis of the engineer at the conclusion of Oswald Spengler's *Decline of the West*.⁶⁶ In turn, Kittler's somewhat quaint portrayal of the United States as a haven of technophilia also has easily recognizable German roots: it harks back to the boisterous "Americanism" of the Weimar Republic that saw a Fordist and Taylorized United States as a model for overcoming the backwardness of the Old World.⁶⁷

5. *Reactionary postmodernism?* The Fordism of the Weimar Republic was related to a cultural current that was to have considerable influence on conservative and, subsequently, Nazi ideology. Labeled "reactionary modernism" by Jeffrey Herf, it was an attempt to reject Enlightenment values while embracing technology in order to reconcile the strong antimodernist German tradition with technological progress. In spite of all the unrest and disorientation caused by the rapid modernization of late nineteenth-century Germany, the reactionary modernists claimed that "Germany could be *both* technologically advanced *and* true to its soul."⁶⁸ One of reactionary modernism's key components was to sever the traditional—and traditionally unquestioned—link between social and technological progress. No longer ensnared by the humanist ideology of the Enlightenment, the technological achievements of the modern age could be made to enter a mutually beneficial union with premodern societal structures. Among the most important thinkers to contribute to this distinctly German reaction to the travails of modernization were Oswald Spengler, Carl Schmitt, Ernst Jünger, Werner Sombart, and Mar-

tin Heidegger, some of whom figure prominently in the writings of Kittler and Bolz. To be sure, writing about the likes of Jünger, Benn, and Heidegger is anything but synonymous with endorsing the extremist political ideologies they may have held at one time or another. Nevertheless, readers of *Gramophone, Film, Typewriter* and Kittler's related essays might be left with the impression that in spite of all distancing maneuvers, Kittler seems to feel a certain reverence, if not for the writers themselves, then certainly for their largely unquestioning admiration of (media-)technological innovations. Jünger—who features prominently in “Film”—is a case in point: the way in which the workers and soldiers of his early novels and essays are dwarfed by productions and weapons technologies that dissolve their *Innerlichkeit*, or inner experience of being, into a spray of media effects is distinctly reminiscent of Kittler's poststructuralist erasure of the subject.

Of course there is a major difference: Kittler is as far removed as one can be from the traditional right-wing rhetoric of “soul,” “*Volks*” and the “national body”; if these or related terms appear, they do so only as examples of the crude historical conceptualizations of the growing connectivity and communication spaces established by modern media technologies. But the question remains whether certain affinities exist that might suggest that some of Kittler's work be labeled a “postmodern” variant of the old reactionary modernism—most prominently, the determination to sever the connection between technological and social advancement, to jettison the latter in favor of the former and install, as it were, Technology as the new, authentic subject of history. What gives this approach an additional edge, however, is the growing awareness of the degree to which the French poststructuralists from whom Kittler takes his cue were themselves influenced by these right-wing German thinkers.⁶⁹ (Naturally, Heidegger comes to mind, but one should not underestimate Jünger.) But if it is true that the “antihumanists” of French poststructuralism owe a lasting debt to Nietzsche as well as to the Weimar thinkers of the Right, then Kittler's media discourse analysis, with its insistence that media determine our situation and that our situation changed decisively during the *Mediengründerzeit*, exposes their intellectual origins as well as technological matrix that shaped them.

PREFACE

Tap my head and mike my brain,
Stick that needle in my vein.

— THOMAS PYNCHON

Media determine our situation, which—in spite or because of it—deserves a description.

Situation conferences were held by the German General Staff, great ones around noon and smaller ones in the evening: in front of sand tables and maps, in war and so-called peace. Until Dr. Gottfried Benn, writer and senior army doctor, charged literature and literary criticism as well with the task of taking stock of the situation. His rationale (in a letter to a friend): “As you know, I sign: On behalf of the Chief of the Army High Command: Dr. Benn.”¹

Indeed: in 1941, with the knowledge of files and technologies, enemy positions and deployment plans, and located at the center of the Army High Command in Berlin's Bendlerstraße, it may still have been possible to take stock of the situation.²

The present situation is more obscure. First, the pertinent files are kept in archives that will all remain classified for exactly as many years as there remains a difference between files and facts, between planned objectives and their realization. Second, even secret files suffer a loss of power when real streams of data, bypassing writing and writers, turn out merely to be unreadable series of numbers circulating between networked computers. Technologies that not only subvert writing, but engulf it and carry it off along with so-called Man, render their own description impossible. Increasingly, data flows once confined to books and later to records and films are disappearing into black holes and boxes that, as artificial intelligences, are bidding us farewell on their way to nameless high commands. In this situation we are left only with reminiscences, that is to say, with stories. How that which is written in no book came to pass may