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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. W E L L S , 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.”

“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. 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.* 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.

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.” 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. 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” 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-
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.”

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. 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”—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.”

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.”
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” 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).

“LACANCAN AND DERRIDADA”: 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 maitre 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.” 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.

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. 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 tra­tion, 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. 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. 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. 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.

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.” Discussing Lacan’s famous account of human consciousness as a camera that captures and stores images even when nobody is around, 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.” 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 re-coding 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. 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. 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. 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. 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. 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.” 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. Originary 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 communed 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.”

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,” 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.” 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 differentiality—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. 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 McNIETZSCH: 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 kinetoscope 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-
Translators' Introduction

Translation 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-
important 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.” 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.

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” 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 styler, or even a dagger,” 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 comunication? 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, Type-
writer. That part goes to Thomas Alva Edison, a casting decision that Kitt-
ler 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.” 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 be-
tween the United States and Germany, or of the implied distinction be-
tween technology and culture, but there can be no doubt that North
American readers will find much of interest in Gramophone, Film, Type-
writer. They will, however, also find cause for irritation beyond the ques-
tion of style. In conclusion, we will briefly point to five particularly promis-
ing 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 hu-
manities, 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 mili-
tant 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 Gramo-
phone, Film, Typewriter is the belief that “so-called Man” (der soge-
namnte 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.”\(^5\) 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.”\(^5\)
Certainiy, 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.”

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 aspirès to effects which could be fully obtained only with a changed technical standard.” 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." 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.

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." 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.
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*. 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.

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.” 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,” “Volk” 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. (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.
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.”

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.

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
still be for books to record. Pushed to their margins even obsolete media become sensitive enough to register the signs and clues of a situation. Then, as in the case of the sectional plane of two optical media, patterns and moirés emerge: myths, fictions of science, oracles . . .

This book is a story made up of such stories. It collects, comments upon, and relays passages and texts that show how the novelty of technological media inscribed itself into the old paper of books. Many of these papers are old or perhaps even forgotten, but in the founding age of technological media the terror of their novelty was so overwhelming that literature registered it more acutely than in today’s alleged media pluralism, in which anything goes provided it does not disturb the assumption of global dominance by Silicon Valley. An information technology whose monopoly is now coming to an end, however, registers this very information: an aesthetics of terror. What writers astonished by gramophones, films, and typewriters—the first technological media—committed to paper between 1880 and 1920 amounts, therefore, to a ghostly image of our present as future. Those early and seemingly harmless machines capable of storing and therefore separating sounds, sights, and writing ushered in a technologizing of information that, in retrospect, paved the way for today’s self-recursive stream of numbers.

Obviously, stories of this kind cannot replace a history of technology. Even if they were countless they would remain numberless and thus would fail to capture the real upon which all innovations are based. Conversely, number series, blueprints, and diagrams never turn back into writing, only into machines. Heidegger said as much with his fine statement that technology itself prevents any experience of its essence. However, Heidegger’s textbook-like confusion of writing and experience need not be; in lieu of philosophical inquiries into essence, simple knowledge will do.

We can provide the technological and historical data upon which fictional media texts, too, are based. Only then will the old and the new, books and their technological successors, arrive as the information they are. Understanding media—despite McLuhan’s title—remains an impossibility precisely because the dominant information technologies of the day control all understanding and its illusions. But blueprints and diagrams, regardless of whether they control printing presses or mainframe computers, may yield historical traces of the unknown called the body. What remains of people is what media can store and communicate. What counts are not the messages or the content with which they equip so-called souls for the duration of a technological era, but rather (and in
strict accordance with McLuhan) their circuits, the very schematism of perceptibility.

Whosoever is able to hear or see the circuits in the synthesized sound of CDs or in the laser storms of a disco finds happiness. A happiness beyond the ice, as Nietzsche would have said. At the moment of merciless submission to laws whose cases we are, the phantasm of man as the creator of media vanishes. And it becomes possible to take stock of the situation.

In 1945, in the half-burned, typed minutes of the Army High Command’s final conferences, war was already named the father of all things: in a very free paraphrase of Heraclitus, it spawns most technological inventions. And since 1973, when Thomas Pynchon’s *Gravity’s Rainbow* was published, it has become clear that real wars are not fought for people or fatherlands, but take place between different media, information technologies, data flows. Patterns and moirés of a situation that has forgotten us . . .

But no matter what: without the research and contributions of Roland Baumann this book would not have been written. And it would have not have come about without Heidi Beck, Norbert Bolz, Rüdiger Campe, Charles Grivel, Anton (Tony) Kaes, Wolf Kittler, Thorsten Lorenz, Jann Matlock, Michael Müller, Clemens Pornschlegel, Friedhelm Rong, Wolfgang Scherer, Manfred Schneider, Bernhard Siegert, Georg Christoph (Stoffel) Tholen, Isolde Tröndle-Azri, Antje Weiner, David E. Wellbery, Raimar Zons, and Agia Galini.

F.K.

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INTRODUCTION

Optical fiber networks. People will be hooked to an information channel that can be used for any medium—for the first time in history, or for its end. Once movies and music, phone calls and texts reach households via optical fiber cables, the formerly distinct media of television, radio, telephone, and mail converge, standardized by transmission frequencies and bit format. The optoelectronic channel in particular will be immune to disturbances that might randomize the pretty bit patterns behind the images and sounds. Immune, that is, to the bomb. As is well known, nuclear blasts send an electromagnetic pulse (EMP) through the usual copper cables, which would infect all connected computers.

The Pentagon is engaged in farsighted planning: only the substitution of optical fibers for metal cables can accommodate the enormous rates and volumes of bits required, spent, and celebrated by electronic warfare. All early warning systems, radar installations, missile bases, and army staffs in Europe, the opposite coast, finally will be connected to computers safe from EMP and thus will remain operational in wartime. In the meantime, pleasure is produced as a by-product: people are free to channel-surf among entertainment media. After all, fiber optics transmit all messages imaginable save for the one that counts—the bomb.

Before the end, something is coming to an end. The general digitization of channels and information erases the differences among individual media. Sound and image, voice and text are reduced to surface effects, known to consumers as interface. Sense and the senses turn into eyewash. Their media-produced glamor will survive for an interim as a by-product of strategic programs. Inside the computers themselves everything becomes a number: quantity without image, sound, or voice. And once optical fiber networks turn formerly distinct data flows 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.

But there still are media; there still is entertainment.

Today’s standard comprises partially connected media links that are still comprehensible in McLuhan’s terms. According to him, one medium’s content is always other media: film and radio constitute the content of television; records and tapes the content of radio; silent films and audiotape that of cinema; text, telephone, and telegram that of the semi–media monopoly of the postal system. Since the beginning of the century, when the electronic tube was developed by von Lieben in Germany and De Forest in California, it has been possible to amplify and transmit signals. Accordingly, the large media networks, which have been in existence since the thirties, have been able to fall back on all three storage media—writing, film, and photography—to link up and send their signals at will.

But these links are separated by incompatible data channels and differing data formats. Electrics does not equal electronics. Within the spectrum of the general data flow, television, radio, cinema, and the postal service constitute individual and limited windows for people’s sense perceptions. Infrared radiations or the radio echoes of approaching missiles are still transmitted through other channels, unlike the optical fiber networks of the future. Our media systems merely distribute the words, noises, and images people can transmit and receive. But they do not compute these data. They do not produce an output that, under computer control, transforms any algorithm into any interface effect, to the point where people take leave of their senses. At this point, the only thing being computed is the transmission quality of storage media, which appear in the media links as the content of the media. A compromise between engineers and salespeople regulates how poor the sound from a TV set can be, how fuzzy movie images can be, or how much a beloved voice on the telephone can be filtered. Our sense perceptions are the dependent variable of this compromise.

A composite of face and voice that remains calm, even when faced during a televised debate by an opponent named Richard M. Nixon, is deemed telegenic and may win a presidential election, as in Kennedy’s
case. Voices that an optical close-up would reveal as treacherous, how­
ever, are called radiogenic and rule over the VE 301, the Volksempfänger of the Second World War. For, as the Heidegger disciple among Ger­
many’s early radio experts realized, “death is primarily a radio topic.”

But these sense perceptions had to be fabricated first. For media to
link up and achieve dominance, we need a coincidence in the Lacanian
sense: that something ceases not to write itself. Prior to the electrification
of media, and well before their electronic end, there were modest, merely
mechanical apparatuses. Unable to amplify or transmit, they nevertheless
were the first to store sensory data: silent movies stored sights, and Edi­
son’s phonograph (which, unlike Berliner’s later gramophone, was capa­
ble both of recording and reproducing) stored sounds.

On December 6, 1877, Edison, lord of the first research laboratory in
the history of technology, presented the prototype of the phonograph to
the public. On February 20, 1892, the same lab in Menlo Park (near New
York) added the so-called kinetoscope. Three years later, the Lumière
brothers in France and the Skladanowsky brothers in Germany merely
had to add a means of projection to turn Edison’s invention into cinema.

Ever since that epochal change we have been in possession of storage
technologies that can record and reproduce the very time flow of acoustic
and optical data. Ears and eyes have become autonomous. And that
changed the state of reality more than lithography and photography,
which (according to Benjamin’s thesis) in the first third of the nineteenth
century merely propelled the work of art into the age of its technical re­
producibility. Media “define what really is”;

What phonographs and cinematographs, whose names not coinci­
dently derive from writing, were able to store was time: time as a mix­
ture of audio frequencies in the acoustic realm and as the movement of
single-image sequences in the optical. Time determines the limit of all art,
which first has to arrest the daily data flow in order to turn it into images
or signs. What is called style in art is merely the switchboard of these
scannings and selections. That same switchboard also controls those arts
that use writing as a serial, that is, temporally transposed, data flow. To
record the sound sequences of speech, literature has to arrest them in a
system of 26 letters, thereby categorically excluding all noise sequences.
Not coincidentally, this system also contains as a subsystem the seven
notes, whose diatonics—from A to G—form the basis of occidental mu­
sic. Following a suggestion made by the musicologist von Hornbostel, it is
possible to fix the chaos of exotic music assailing European ears by first
interpolating a phonograph, which is able to record this chaos in real time and then replay it in slow motion. As the rhythms begin to flag and “individual measures, even individual notes resound on their own,” occidental alphabetism with its staffs can proceed to an “exact notation.”

Texts and scores—Europe had no other means of storing time. Both are based on a writing system whose time is (in Lacan’s term) symbolic. Using projections and retrievals, this time memorizes itself—like a chain of chains. Nevertheless, whatever ran as time on a physical or (again in Lacan’s terms) real level, blindly and unpredictably, could by no means be encoded. Therefore, all data flows, provided they really were streams of data, had to pass through the bottleneck of the signifier. Alphabetic monopoly, grammatology.

If the film called history rewinds itself, it turns into an endless loop. What will soon end in the monopoly of bits and fiber optics began with the monopoly of writing. History was the homogenized field that, as an academic subject, only took account of literate cultures. Mouths and graphisms were relegated to prehistory. Otherwise, stories and histories (both deriving from historia) could not have been linked. All the orders and judgments, announcements and prescriptions (military and legal, religious and medical) that produced mountains of corpses were communicated along the very same channel that monopolized the descriptions of
those mountains of corpses. Which is why anything that ever happened ended up in libraries.

And Foucault, the last historian or first archeologist, merely had to look things up. The suspicion that all power emanates from and returns to archives could be brilliantly confirmed, at least within the realms of law, medicine, and theology. A tautology of history, or its calvary. For the libraries in which the archeologist found so much rich material collected and catalogued papers that had been extremely diverse in terms of addressee, distribution technique, degree of secrecy, and writing technique—Foucault’s archive as the entropy of a post office. Even writing itself, before it ends up in libraries, is a communication medium, the technology of which the archeologist 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 or towers of film rolls.

As long as it was moving along, history was indeed Foucault’s “wave-like succession of words.” More simply, but no less technically than tomorrow’s fiber optic cables, writing functioned as a universal medium—
in times when there was no concept of medium. Whatever else was going on dropped through the filter of letters or ideograms.

"Literature," Goethe wrote, "is a fragment of fragments; only the smallest proportion of what took place and what was said was written down, while only the smallest proportion of what was written down has survived."  

Accordingly, oral history today confronts the historians' writing monopoly; accordingly, a media theoretician like the Jesuit priest Walter J. Ong, who must have been concerned with the spirit of the Pentecostal mystery, could celebrate a primary orality of tribal cultures as opposed to the secondary orality of our media acoustics. Such research remained unthinkable as long as the opposite of "history" was simply termed (again
following Goethe) “legend.”8 Prehistory was subsumed by its mythical name; Goethe’s definition of literature did not even have to mention optical or acoustic data flows. And even legends, those oralized segments of bygone events, only survived in written format; that is, under pretechnological but literary conditions. However, since it has become possible to record the epics of the last Homeric bards, who until recently were wandering through Serbia and Croatia, oral mnemotechnics or cultures have become reconstructible in a completely different way.9 Even Homer’s rosy-fingered Eos changes from a Goddess into a piece of chromium dioxide that was stored in the memory of the bard and could be combined with other pieces into whole epics. “Primary orality” and “oral history” came into existence only after the end of the writing monopoly, as the technological shadows of the apparatuses that document them.

Writing, however, stored writing—no more and no less. The holy books attest to this. Exodus, chapter 20, contains a copy of what Yahweh’s own finger originally had written on two stone tablets: the law. But of the thunder and lightning, of the thick cloud and the mighty trumpet which, according to scripture, surrounded this first act of writing on Mount Sinai, that same Bible could store nothing but mere words.10

Even less is handed down of the nightmares and temptations that afflicted a nomad called Mohammed following his flight to the holy mountain of Hira. The Koran does not begin until the one God takes the place of the many demons. The archangel Gabriel descends from the seventh heaven with a roll of scripture and the command to decipher the scroll. “Rejoice in the name of the Lord who created—created man from clots of blood. Recite! Your Lord is the Most Bountiful One, who by pen taught man what he did not know.”11

Mohammed, however, answers that he, the nomad, can’t read; not even the divine message about the origin of reading and writing. The archangel has to repeat his command before an illiterate can turn into the founder of a book-based religion. For soon, or all too soon, the illegible scroll makes sense and presents to Mohammed’s miraculously alphabetized eyes the very same text that Gabriel had already uttered twice as an oral command. Mohammed’s illuminations began, according to tradition, with this 96th sura—in order then to be “memorized by the faithful and written down on primitive surfaces such as palm leaves, stones, wood, bones, and pieces of leather, and to be recited, again and again, by Mohammed and select believers, especially during Ramadan.”12

Writing therefore merely stores the fact of its authorization. It cele-
brates the storage monopoly of the God who invented it. And since the realm of this God consists of signs that only nonreaders can’t make sense of, all books are books of the dead, like the Egyptian ones with which literature began. The book itself coincides with the realm of the dead beyond all senses into which it lures us. When the Stoic philosopher Zeno asked the oracle at Delphi how he should best lead his life, he was given the answer “that he should mate with the dead. He understood this to mean that he should read the ancients.”

The story of how the divine instructions to use quills extended beyond Moses and Mohammed and reached simpler and simpler people is a lengthy one that nobody can write, because it would be history itself. In much the same way, the storage capacities of our computers will soon coincide with electronic warfare and, gigabyte upon gigabyte, exceed all the processing capacities of historians.

Suffice it to say that one day—in Germany, this may have already been the case during the age of Goethe—the homogenous medium of writing also became homogenous in the social sphere. Compulsory education engulfed people in paper. They learned a way of writing that, as an “abuse of language” (according to Goethe), no longer had to struggle with cramped muscles and individual letters, but rather proceeded in rapture or darkness. They learned to read “silently to one’s self,” a “sorry substitute for speech” that consumed letters without effort by bypassing oral organs. Whatever they emitted and received was writing. And because only that exists which can be posted, bodies themselves fell under the regime of the symbolic. What is unthinkable today was once reality: no film stored the movements they made or saw, no phonograph, the noise they made or heard. For whatever existed failed before time. Silhouettes or pastel drawings fixed facial expressions, and scores were unable to store noise. But once a hand took hold of a pen, something miraculous occurred: the body, which did not cease not to write itself, left strangely unavoidable traces.

I’m ashamed to tell of it. I’m ashamed of my handwriting. It exposes me in all my spiritual nakedness. My handwriting shows me more naked than I am with my clothes off. No leg, no breath, no clothes, no sound. Neither voice nor reflection. All cleaned out. Instead, a whole man’s being, shriveled and misshapen, like his scribble-scrabble. His lines are all that’s left of him, as well as his self-propagation. The uneven tracings of his pencil on paper, so minimal that a blind man’s fingertips would hardly detect them, become the measure of the whole fellow.
Today, this shame, which overcomes the hero of Botho Strauss’s last love story, *Dedication*, whenever he sees his handwriting, is no more than an anachronism. The fact that the minimal unevenness between stroke and paper can store neither a voice nor an image of a body presupposes in its exclusion the invention of phonography and cinema. Before their invention, however, handwriting alone could guarantee the perfect securing of traces. It wrote and wrote, in an energetic and ideally uninterrupted flow. As Hegel so correctly observed, the alphabetized individual had his “appearance and externality”\(^\text{17}\) in this continuous flow of ink or letters.

And what applied to writing also applied to reading. Even if the alphabetized individual known as the “author” finally had to fall from the private exteriority of handwriting into the anonymous exteriority of print in order to secure “all that’s left of him, as well as his self-propagation”—alphabetized individuals known as “readers” were able to reverse this exteriorization. “If one reads in the right way,” Novalis wrote, “the words will unfold in us a real, visible world.”\(^\text{18}\) And his friend Schlegel added that “one believes to hear what one merely reads.”\(^\text{19}\) Perfect alphabetization was to supplement precisely those optical and acoustic data flows that, under the monopoly of writing, did not cease not to write themselves. Effort had been removed from writing, and sound from reading, in order to naturalize writing. The letters that educated readers skimmed over provided people with sights and sounds.

Aided by compulsory education and new alphabetization techniques, the book became both film and record around 1800—not as a mediotechnological reality, but in the imaginary of readers’ souls. As a surrogate of unstorable data flows, books came to power and glory.\(^\text{20}\)

In 1774 an editor by the name of Goethe committed handwritten letters or *Sorrows of Young Werther* to print. The “nameless throng” (to quote the dedication of *Faust*), too, was to hear an “early song” that, like “some old half-faded song,” revived “old griefs” and “old friends.”\(^\text{21}\) This was the new literary recipe for success: to surreptitiously turn the voice or handwriting of a soul into Gutenbergiana. In the last letter he wrote and sealed but did not send off before committing suicide, Werther gave his beloved the very promise of poetry: during her lifetime she would have to remain with Albert, her unloved husband, but afterwards she would be united with her lover “in the sight of the Infinite One in eternal embraces.”\(^\text{22}\) Indeed: the addressee of handwritten love letters, which were then published by a mere editor, was to be rewarded with an immortality in the shape of the novel itself. It alone was able to create the
"beautiful realm" in which the lovers of Goethe’s *Elective Affinities*, according to the hope of their narrator, “will waken together once more.” Strangely enough, Eduard and Ottilie had one and the same handwriting during their lifetime. Their death elevated them to a paradise that under the storage monopoly of writing was called poetry.

And maybe that paradise was more real than our media-controlled senses can imagine. Reading intently, Werther’s suicidal readers may well have perceived their hero in a real, visible world. And the lovers among Goethe’s female readers, like Bettina Brentano, may well have died with the heroine of his *Elective Affinities* only to be “reborn in a more beautiful youth” through Goethe’s “genius.” Maybe the perfectly alphabetized readers of 1800 were a living answer to the question with which Chris Marker concludes his film essay *Sans Soleil*:

Lost at the end of the world on my island, Sal, in the company of my dogs strutting around, I remember that January in Tokyo, or rather I remember the images I filmed in Tokyo in January. They have now put themselves in place of my memory, they are my memory. I wonder how people who do not film, take photos, or record tapes remember, how humankind used to go about remembering.

It is the same with language, which only leaves us the choice of either retaining words while losing their meaning or, vice versa, retaining meaning while losing the words. Once storage media can accommodate optical and acoustic data, human memory capacity is bound to dwindle. Its “liberation” is its end. As long as the book was responsible for all serial data flows, words quivered with sensuality and memory. It was the passion of all reading to hallucinate meaning between lines and letters: the visible and audible world of Romantic poetics. And the passion of all writing was (in the words of E. T. A. Hoffmann) the poet’s desire to “describe” the hallucinated “picture in one’s mind with all its vivid colors, the light and the shade,” in order to “strike [the] gentle reader like an electric shock.”

Electricity itself put an end to this. Once memories and dreams, the dead and ghosts, become technically reproducible, readers and writers no longer need the powers of hallucination. Our realm of the dead has withdrawn from the books in which it resided for so long. As Diodor of Sicily once wrote, “it is no longer only through writing that the dead remain in the memory of the living.”

The writer Balzac was already overcome by fear when faced with photography, as he confessed to Nadar, the great pioneer of photography. If (according to Balzac) the human body consists of many infinitely thin
layers of “specters,” and if the human spirit cannot be created from nothingness, then the daguerreotype must be a sinister trick: it fixes, that is, steals, one layer after the other, until nothing remains of the specters and the photographed body. Photo albums establish a realm of the dead infinitely more precise than Balzac’s competing literary enterprise, the Comédie humaine, could ever hope to create. In contrast to the arts, media do not have to make do with the grid of the symbolic. That is to say, they reconstruct bodies not only in a system of words or colors or sound intervals. Media and media only fulfill the “high standards” that (according to Rudolf Arnheim) we expect from “reproductions” since the invention of photography: “They are not only supposed to resemble the object,
but rather guarantee this resemblance by being, as it were, a product of the object in question, that is, by being mechanically produced by it—just as the illuminated objects of reality imprint their image on the photographic layer," or the frequency curves of noises inscribe their wavelike shapes onto the phonographic plate.

A reproduction authenticated by the object itself is one of physical precision. It refers to the bodily real, which of necessity escapes all symbolic grids. Media always already provide the appearances of specters. For, according to Lacan, even the word "corpse" is a euphemism in reference to the real.

Accordingly, the invention of the Morse alphabet in 1837 was promptly followed by the tapping specters of spiritistic seances sending their messages from the realm of the dead. Promptly as well, photographic plates—even and especially those taken with the camera shutter closed—furnished reproductions of ghosts or specters, whose black-and-white fuzziness only served to underscore the promise of resemblance. Finally, one of the ten applications Edison envisioned for his newly invented phonograph in the *North American Review* (1878) was to record "the last words of dying persons."

It was only a small step from such a "family record," with its special consideration of revenants, to fantasies that had telephone cables linking the living and the dead. What Leopold Bloom in *Ulysses* could only wish for in his Dublin graveyard meditations had already been turned into science fiction by Walter Rathenau, the AEG chairman of the board and futurist writer. In Rathenau's story "Resurrection Co.," the cemetery administration of Necropolis, Dacota/USA, following a series of scandalous premature burials in 1898, founds a daughter company entitled "Dacota and Central Resurrection Telephone Bell Co." with a capital stock of $750,000. Its sole purpose is to make certain that the inhabitants of graves, too, are connected to the public telephone network. Whereupon the dead avail themselves of the opportunity to prove, long before McLuhan, that the content of one medium is always another medium—in this concrete case, a définition professionnelle.

These days, paranormal voices on tape or radio, the likes of which have been spiritistically researched since 1959 and preserved in rock music since Laurie Anderson's 1982 release *Big Science,* inform their researchers of their preferred radio wavelength. This already occurred in 1898, in the case of Senate President Schreber: when a paranormal, beautifully autonomous "base or nerve language" revealed its code as well as its channels, message and channel became one. "You just have to
choose a middle-, short-, or long-wave talk-show station, or the 'white noise' between two stations, or the 'Jürgenson wave,' which, depending on where you are, is located around 1,450 to 1,600 kHz between Vienna and Moscow.\textsuperscript{38} If you replay a tape that has been recorded off the radio, you will hear all kinds of ghost voices that do not originate from any known radio station, but that, like all official newscasters, indulge in radio self-advertisement. Indeed, the location and existence of that "Jürgenson wave" was pinpointed by none other than "Friedrich Jürgenson, the Nestor of vocal research."\textsuperscript{39}

The realm of the dead is as extensive as the storage and transmission capabilities of a given culture. As Klaus Theweleit noted, media are always flight apparatuses into the great beyond. If gravestones stood as symbols at the beginning of culture itself, our media technology can retrieve all gods. The old written laments about ephemerality, which measured no more than distance between writing and sensuality, suddenly fall silent. In our mediascape, immortals have come to exist again.

War on the Mind is the title of an account of the psychological strategies hatched by the Pentagon. It reports that the staffs planning the electronic war, which merely continues the Battle of the Atlantic,\textsuperscript{40} have already compiled a list of the propitious and unpropitious days in other cultures. This list enables the U.S. Air Force "to time [its] bombing campaigns to coincide with unpropitious days, thus 'confirming' the forecasts of local gods." As well, the voices of these gods have been recorded on tape to be broadcast from helicopters "to keep tribes in their villages." And finally, the Pentagon has developed special film projectors capable of projecting those gods onto low-hanging clouds.\textsuperscript{41} A technologically implemented beyond . . .

Of course the Pentagon does not keep a handwritten list of good and bad days. Office technology keeps up with media technology. Cinema and the phonograph, Edison's two great achievements that ushered in the present, are complemented by the typewriter. Since 1865 (according to European accounts) or 1868 (according to American ones), writing has no longer been the ink or pencil trace of a body whose optical and acoustic signals were irretrievably lost, only to reappear (in readers' minds) in the surrogate sensuality of handwriting. In order to store series of sights and sounds, Old Europe's only storage technology first had to be mechanized. Hans Magnus Malling Hansen in Copenhagen and Christopher Latham Sholes in Milwaukee developed mass-producible typewriters. Edison commented positively on the invention's potential when Sholes visited him in
Newark to demonstrate his newly patented model and to invite the man who had invented invention to enter a joint venture.\textsuperscript{42}

But Edison declined the offer—as if, already in 1868, the phonograph and kinetoscope preoccupied their future inventor. Instead, the offer was grabbed by an arms manufacturer suffering from dwindling revenues in the post–Civil War slump. Remington, not Edison, took over Sholes’s discourse machine gun.

Thus, there was no Marvelous One from whose brow sprang all three media technologies of the modern age. On the contrary, the beginning of our age was marked by separation or differentiation.\textsuperscript{43} On the one hand, we have two technological media that, for the first time, fix unwritable data flows; on the other, an “intermediate’ thing between a tool and a machine,” as Heidegger wrote so precisely about the typewriter.\textsuperscript{44} On the one hand, we have the entertainment industry with its new sensualities; on the other, a writing that already separates paper and body during textual production, not first during reproduction (as Gutenberg’s movable types had done). From the beginning, the letters and their arrangement were standardized in the shapes of type and keyboard, while media were engulfed by the noise of the real—the fuzziness of cinematic pictures, the hissing of tape recordings.

In standardized texts, paper and body, writing and soul fall apart. Typewriters do not store individuals; their letters do not communicate a beyond that perfectly alphabetized readers can subsequently hallucinate as meaning. Everything that has been taken over by technological media since Edison’s inventions disappears from typescripts. The dream of a real visible or audible world arising from words has come to an end. The historical synchronicity of cinema, phonography, and typewriting separated optical, acoustic, and written data flows, thereby rendering them autonomous. That electric or electronic media can recombine them does not change the fact of their differentiation.

In 1860, five years before Malling Hansen’s mechanical writing ball (the first mass-produced typewriter), Gottfried Keller’s “Misused Love Letters” still proclaimed the illusion of poetry itself: love is left with the impossible alternatives of speaking either with “black ink” or with “red blood.”\textsuperscript{45} But once typing, filming, and recording became equally valid options, writing lost such surrogate sensualities. Around 1880 poetry turned into literature. Standardized letters were no longer to transmit Keller’s red blood or Hoffmann’s inner forms, but rather a new and elegant tautology of technicians. According to Mallarmé’s instant insight, literature is made up of no more and no less than twenty-six letters.\textsuperscript{46}
Lacan's "methodological distinction" among the real, the imaginary, and the symbolic is the theory (or merely a historical effect) of that differentiation. The symbolic now encompasses linguistic signs in their materiality and technicity. That is to say, letters and ciphers form a finite set without taking into account philosophical dreams of infinity. What counts are differences, or, in the language of the typewriter, the spaces between the elements of a system. For that reason, Lacan designates "the world of the symbolic [as] the world of the machine."148

The imaginary, however, comes about as the mirror image of a body that appears to be, in terms of motor control, more perfect than the infant's own body, for in the real everything begins with coldness, dizziness, and shortness of breath.49 Thus, the imaginary implements precisely those optical illusions that were being researched in the early days of cinema. A dismembered or (in the case of film) cut-up body is faced with the illusionary continuity of movements in the mirror or on screen. It is no coincidence that Lacan recorded infants' jubilant reactions to their mirror images in the form of documentary footage.

Finally, of the real nothing more can be brought to light than what Lacan presupposed—that is, nothing. It 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.

The methodological distinctions of modern psychoanalysis clearly coincide with the distinctions of media technology. Every theory has its historical a priori. And structuralist theory simply spells out what, since the turn of the century, has been coming over the information channels.

Only the typewriter provides writing as a selection from the finite and arranged stock of its keyboard. It literally embodies what Lacan illustrated using the antiquated letter box. In contrast to the flow of handwriting, we now have discrete elements separated by spaces. Thus, the symbolic has the status of block letters. Film was the first to store those mobile doubles that humans, unlike other primates, were able to (mis)perceive as their own body. Thus, the imaginary has the status of cinema. And only the phonograph can record all the noise produced by the larynx prior to any semiotic order and linguistic meaning. To experience pleasure, Freud’s patients no longer have to desire what philosophers consider good. Rather, they are free to babble. Thus, the real—especially in the talking cure known as psychoanalysis—has the status of phonography.

Once the technological differentiation of optics, acoustics, and writing exploded Gutenberg’s writing monopoly around 1880, the fabrication of so-called Man became possible. His essence escapes into apparatuses. Machines take over functions of the central nervous system, and no longer, as in times past, merely those of muscles. And with this differentiation—and not with steam engines and railroads—a clear division occurs between matter and information, the real and the symbolic. When it comes to inventing phonography and cinema, the age-old dreams of humankind are no longer sufficient. The physiology of eyes, ears, and brains have to become objects of scientific research. For mechanized writing to be optimized, one can no longer dream of writing as the expression of individuals or the trace of bodies. The very forms, differences, and frequencies of its letters have to be reduced to formulas. So-called Man is split up into physiology and information technology.

When Hegel summed up the perfect alphabetism of his age, he called it Spirit. The readability of all history and all discourses turned humans or philosophers into God. The media revolution of 1880, however, laid the groundwork for theories and practices that no longer mistake information for spirit. Thought is replaced by a Boolean algebra, and consciousness by the unconscious, which (at least since Lacan’s reading) makes of Poe’s “Purloined Letter” a Markoff chain. And that the sym-
bolic is called the world of the machine undermines Man's delusion of possessing a "quality" called "consciousness," which identifies him as something other and better than a "calculating machine." For both people and computers are "subject to the appeal of the signifier"; that is, they are both run by programs. "Are these humans," Nietzsche already asked himself in 1874, eight years before buying a typewriter, "or perhaps only thinking, writing, and speaking machines?"52

In 1950 Alan Turing, the practitioner among England's mathematicians, gave the answer to Nietzsche's question. He observed, with formal elegance, that there is no question to begin with. To clarify the issue, Turing's essay "Computing Machinery and Intelligence"—appearing in, of all places, the philosophical periodical Mind—proposed an experiment, the so-called Turing game: A computer A and human B exchange data via some kind of teletype interface. The exchange of texts is monitored by a censor C, who also only receives written information. A and B both pretend to be human, and C has to decide which of the two is simulating and which merely is Nietzsche's thinking, writing, and speaking machine. But the game remains open-ended, because each time the machine gives itself away—be it by making a mistake or, more likely, by not making any—it will refine its program by learning.53 In the Turing game, Man coincides with his simulation.

And this is, obviously, already so because the censor C receives plotter printouts and typescripts rather than handwritten texts. Of course, computer programs could simulate the "individuality" of the human hand, with its routines and mistakes, but Turing, as the inventor of the universal discrete machine, was a typist. Though he wasn't much better or skilled at it than his tomcat Timothy, who was allowed to jump across the keyboard in Turing's chaotic secret service office,54 it was at least somewhat less catastrophic than his handwriting. The teachers at the honorable Sherborne School could hardly "forgive" their pupil's chaotic lifestyle and messy writing. He got lousy grades for brilliant exams in mathematics only because his handwriting was "the worst . . . ever seen."55 Faithfully, schools cling to their old duty of fabricating individuals (in the literal sense of the word) by drilling them in a beautiful, continuous, and individual handwriting. Turing, a master in subverting all education, however, dodged the system; he made plans for an "exceedingly crude" typewriter.56

Nothing came of these plans. But when, on the meadows of Grantchester, the meadows of all English poetry from the Romantics to Pink
Floyd, he hit upon the idea of the universal discrete machine, his early dreams were realized and transformed. Sholes's typewriter, reduced to its fundamental principle, has supported us to this day. Turing merely got rid of the people and typists that Remington & Son needed for reading and writing.

And this is possible because a Turing machine is even more exceedingly crude than the Sherborne plan for a typewriter. All it works with is a paper strip that is both its program and its data material, its input and its output. Turing slimmed down the common typewriter page to this little strip. But there are even more economizations: his machine doesn’t need the many redundant letters, ciphers, and signs of a typewriter keyboard; it can do with one sign and its absence, 1 and 0. This binary information can be read or (in Turing’s technospeak) scanned by the machine. It can then move the paper strip one space to the right, one to the left, or not at all, moving in a jerky (i.e., discrete) fashion like a typewriter, which in contrast to handwriting has block caps, a back spacer, and a space bar. (From a letter to Turing: “Pardon the use of the typewriter: I have come to prefer discrete machines to continuous ones.”)\(^57\)

The mathematical model of 1936 is no longer a hermaphrodite of a machine and a mere tool. As a feedback system it beats all the Remingtons, because each step is controlled by scanning the paper strip for the sign or its absence, which amounts to a kind of writing: it depends on this reading whether the machine keeps the sign or erases it, or, vice versa, whether it keeps a space blank or replaces it with a sign, and so on and so forth.

That’s all. But no computer that has been built or ever will be built can do more. Even the most advanced Von Neumann machines (with program storage and computing units), though they operate much faster, are in principle no different from Turing’s infinitely slow model. Also, while not all computers have to be Von Neumann machines, all conceivable data processing machines are merely a state \(n\) of the universal discrete machine. This was proved mathematically by Alan Turing in 1936, two years before Konrad Zuse in Berlin built the first programmable computer from simple relays. And with that the world of the symbolic really turned into the world of the machine.\(^58\)

Unlike the history to which it put an end, the media age proceeds in jerks, just like Turing’s paper strip. From the Remington via the Turing machine to microelectronics, from mechanization and automatization to the implementation of a writing that is only cipher, not meaning—one century was enough to transfer the age-old monopoly of writing into the
omnipotence of integrated circuits. Not unlike Turing’s correspondents, everyone is deserting analog machines in favor of discrete ones. The CD digitizes the gramophone, the video camera digitizes the movies. All data streams flow into a state $n$ of Turing’s universal machine; Romanticism notwithstanding, numbers and figures become the key to all creatures.
NOTES

TRANSLATORS’ NOTE: The citation format for Kittler’s text closely follows that of the German edition. When two publication dates are given, the first refers to the date of original publication, the second, either to a later edition used by Kittler or to an English translation. Page numbers refer to the latter date, which corresponds to the edition given in the Bibliography, pp. 299–315.

TRANSLATORS’ INTRODUCTION

2. Ibid.
9. Hans Magnus Enzensberger, “ Constituents of a Theory of the Media,” in

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The Consciousness Industry: On Literature, Poetics and the Media, ed. Michael Roloff (New York: Seabury, 1974), 118. See also Enzensberger’s hilarious retraction, “The Zero Medium, or Why All Complaints About Television are Pointless,” in Mediocrity and Delusion: Collected Diversions, trans. Martin Chalmers (New York: Verso, 1992), 59–70. In an interesting twist, Klaus Theweleit has speculated that the German Left discarded McLuhan because his focus on bodies and media, extensions, narcosis, and self-amputation was more materialist than Marxism had ever been. See Theweleit, Buch der Könige 1: Orpheus und Eurydike (Frankfurt: Stroemfeld, 1988), 383.


12. Ibid., 169.

13. Ibid., 173.

14. Ibid., 175.

15. The compound term Mediendiskursanalyse (the basis for our expression “media discourse analysis”) is occasionally used in German scholarship. Norbert Bolz may have been the first to combine its constituent parts when he outlined a program for a future “Diskursanalyse für neue Medien.” See Bolz, Philosophie nach ihrem Ende (Munich: Boer, 1992), 172, and idem, “Computer als Medium,” in Computer als Medium, ed. Bolz, Kittler, and Christoph Tholen (Munich: Fink, 1994), 15.


17. Needless to say, the story can be told neither impartially nor in its entirety: it is still going on and continuing divisions, spurred by the arrival of new approaches such as systems theory and radical constructivism, make it difficult, if not impossible, to find terms neutral enough to satisfy all parties involved. The following brief account only considers the политикo-theoretical framework of the last three decades, although there are, of course, larger perspectives on postruc­
turalism’s hampered reception. Hans Ulrich Gumbrecht, for one, has argued that analytical procedures such as Derridean deconstruction, with its (potentially an­
tihistorical) bias toward spatialization, did not sit easily with the traditional Ger­
man bias in favor of temporalization; this may also explain why Freudian psycho­

18. Holub, Crossing Borders: Reception Theory, Poststructuralism, Decon­


view with Friedrich Kittler,” New Literary History 27.4 [1996]: 741). Also see

21. In 1978 the volume *Dichtung als Sozialisationsspiel* appeared, which contained Kaiser’s “hermeneutical-dialectic” interpretation of novellas by Gottfried Keller, Kittler’s “discourse-analytical” reading of Goethe’s *Wilhelm Meister*, and a beautifully tortured preface trying to tie the two essays together. What they ultimately end up sharing is a common enemy, the “Marxist theory of the reflection of social conditions and processes in the literary work, as well as ... the neo-Marxist aesthetics of Adorno” (Gerhard Kaiser and Friedrich A. Kittler, *Dichtung als Sozialisationsspiel: Studien zu Goethe und Gottfried Keller* [Göttingen: Vandenhoeck & Ruprecht, 1978], 9).


29. Ibid., 145, referring to the following passage (Lacan, *Seminar II*, 89): “This discourse of the other is not the discourse of the abstract other, of the other in the dyad, of my correspondent, nor even of my slave, it is the discourse of the circuit in which I am integrated. I am one of its links.”


34. Bolz, Philosophie nach ihrem Ende, 154.


36. See Kittler, Dichter Mutter Kind, 7–17, and Hörisch’s belated preface to Die andere Goethezeit, 7–9. See also Kittler’s remarks in Griffin and Herrmann, Technologies of Writing,” 741: “When I think of my old literary criticism, the good essays are actually didactic pieces in programming. How did Duke Carl Eugen von Württemberg [sic] program Friedrich Schiller? I didn’t write about Schiller’s sentiments or religion, because all I had was a bare-bones model: educators and princes program the novelist for a specific civil function in the state. What you need is a fundamental understanding of concepts such as hardware, programming, automatization, and regulation.”


40. As Michael Giesecke points out in his monumental study of the early print age, media theorists have themselves only recently started to pay full attention to the “neglected difference” between scriptography and typography. Michael Giesecke, *Der Buchdruck in der frühen Neuzeit: Eine historische Fallstudie über die Durchsetzung neuer Informations- und Kommunikationstechnologien* (Frankfurt: Suhrkamp, 1991), 29.


42. Griffin and Herrmann, “Technologies of Writing,” 734.

43. See Wellbery, foreword to Kittler, *Discourse Networks*, xix.

44. Kittler, *Discourse Networks*, 369.


49. With this more nuanced account of the relationship of Lacan’s registers to media technologies Kittler goes a long way toward meeting the reviewers of *Discourse Networks* who charged him with setting up arbitrary links between the two. See, for example, Thomas Sebastian, “Technology Romanticized: Friedrich Kittler’s *Discourse Networks 1800/1900*”: “Why the phonograph should have access to the real, while the film only has access to the imaginary is baffling. . . . Notes emanating from a phonograph are neither more real nor less imaginary than filmed images on the screen” (*MLN* 105.3 [1990]: 590).


54. Ibid., 104.

56. Witness, for instance, Kittler’s take on Habermas’s theory of the origin of the enlightened public sphere: “This enlightenment ideology did not have its origin in the Enlightenment but is primarily the work of Jürgen Habermas, who, as is well known, wrote The Structural Transformation of the Public Sphere, the book about the topic. First of all, something has to be said about this book. He claims that the private postal system, which was introduced at the time, set the whole process in motion. What Habermas completely forgets over all those loving, intimate letter-writing people, who he thinks are so great because in them the bourgeois mentality is said to have constituted itself, is quite simply that states, as good mercantilist states, founded this postal system with a clear object in mind: they wanted to skim off the postal rates. For instance, 40 percent of Prussia’s successful Seven Years War against Austria was financed by postal revenue. So much for the function of enlightenment or participation in the eighteenth century.” Kittler, “Das Internet ist eine Emanation: Ein Gespräch mit Friedrich Kittler,” in Stadt am Netz: Ansichten von Telepolis, ed. Stefan Iglhaut, Armin Medosch, and Florian Rötzer (Mannheim: Bollmann, 1996), 201.

57. Griffin and Herrmann, “Technologies of Writing,” 735.


63. “The robot historian of course would hardly be bothered by the fact that it was a human who put the first motor together: for the roles of humans would be seen as little more than that of industrious insects pollinating an independent species of machine-flowers that simply did not possess its own reproductive organs during a segment of its evolution. Similarly, when this robot historian turned its attention to the evolution of armies in order to trace the history of its own weaponry, it would see humans as no more than pieces of a larger military-industrial machine: a war machine.” Manuel De Landa, War in the Age of Intelligent Machines (New York: Zone Books, 1991), 3.


65. Jochen Schulte-Sasse, “Von der schriftlichen zur elektronischen Kultur:
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69. For a critical assessment of these influences see Richard Wolin, Labirynths: Explorations in the Critical History of Ideas (Amherst: Univ. of Massachusetts Press, 1995).

PREFACE


2. Concerning the precision of Benn’s “Take stock of the situation!” see Schnur 1980, which makes clear that the poetic maxim immediately following—“Reckon with your defects, start with your holdings, not with your slogans” (Benn 1959–61, 2: 232)—simply rewrites Germany’s logistical problems with distributing raw materials during the war.


6. Hitler, January 1945, in Schramm 1982, 4: 1652. See also Hitler, May 30, 1942, in Picker 1976, 491, where the fragment from Heraclitus appears as the eternally true and “profoundly serious statement of a military philosopher.” But as Jünger (1926/1993, 128) observed, world wars, rather than continuing to fight in the “prevailing mode,” depend on innovation as such.

7. See Pynchon 1973, 606.

INTRODUCTION

1. Under the title “Nostris ex ossibus: Thoughts of an Optimist,” Karl Haushofer, “the main representative, . . . though not the originator, of the term ‘geopolitics’” (November 2, 1945, in Haushofer 1979, 2: 639), wrote: “After the war, the Americans will appropriate a relatively wide strip of Europe’s western and southern coast and, at the same time, in some shape or fashion annex England, thus realizing the ideal of Cecil Rhodes from the opposite coast. In doing so, they will act in accordance with the age-old ambition of any sea power to gain control of the opposite coast(s) and rule the ocean in between. The opposite coast
is at least the entire eastern rim of the Atlantic and, in order to achieve domina­
tion over all ‘seven seas,’ possibly the entire western rim of the Pacific. Thus, America wants to connect the outer crescent to the ‘axis’” (October 19, 1944, in Haushofer 1979, 2: 635)

8. Goethe, “Geschichte der Farbenlehre” (1810), in idem 1976, 14: 47. [The oral nature of this “opposite” to written history is underscored by the use of Goethe’s word Sage, “legend,” which derives from sagen, “to say.”—Trans.]
9. See Ong 1982, 27 and (more reasonably) 3.
13. See Assmann and Assmann 1983, 68.
27. See Deleuze 1965, 32. “The alternative is between two purities; the false and the true; that of responsibility and that of innocence; that of memory and that of forgetting. . . . Either one remembers words but their meaning remains obscure, or one apprehends the meaning, in which case the memory of the words disappears.”
33. Edison, 1878, quoted in Gelatt 1977, 29. Phonographic recordings of last words are based on the recognition that “physiological time is not reversible,” and that “in the province of rhythm, and of time in general, there is no symmetry” (Mach 1886/1914, 256).
34. See Joyce 1922/1969, 113. See also Brooks 1977, 213–14. [“AEG” refers to the Allgemeine Elektrizitäts-Gesellschaft, one of the leading German electronics corporations. It was originally founded in 1883 by Emil Rathenau as the German Edison Society for Applied Electricity.—Trans.]

35. Rathenau 1918–29, 4: 347. Two examples of déformation professionelle among the dead of Necropolis: “A writer is dissatisfied with his epitaph. An employee of the telephone company uses short and long intervals, a kind of Morse alphabet, to ring in a critique of his successor.” King Alexander, the hero of Bronnen’s Ostpolzug, says everything there is to say about telephonitis and Hades while, according to the stage directions, the “telephone is buzzing”: “Oh, you black beast growing on fatty brown stems, you flower of untimeliness, you rabbit of dark rooms! Your voice is our hereafter, and it has crowded out heaven” (Bronnen 1926/1977, 133).

36. The song “Example #22” actually combines the announcement and sound of “example no. 22” (“Hier spricht Edgar”/“Edgar speaking” [Schäfer 1983, 11]), which, strangely enough, must have migrated on a paranormal cassette-to-book from Freiburg to the United States.


45. Keller 1865/1974, 41. 46. See Mallarmé 1893/1945, 850.


55. Ibid., 30.

56. Ibid., 14.

57. J. Good, September 16, 1948, quoted in ibid., 387.

58. See Zuse, June 19, 1937, in idem 1984, 41: “Decisive thought, 19 June 1937 / Realization that there are elementary operations to which all computing and thinking operations may be reduced. / A primitive type of mechanical brain consists of storage unit, dialing system, and a simple device that can handle conditional chains of two or three links. / With such a form of brain it must be possible to solve all operations of the mind that can be dealt with mechanically, regardless of the time involved. More complex brains are merely a matter of executing those operations faster.”

**GRAMOPHONE**

1. Chew 1967, 2. When Kafka’s captured ape delivers his “Report to an Academy,” the scene depicting his animal language acquisition quotes both Edison’s “Hullo” and his storage technology: On board the ship “there was a cele-