Gill Partington

Friedrich Kittler's *Aufschreibsystem*

In one of his better-known essays, "Dracula's Legacy" (1982), the German theorist Friedrich Kittler delivers a reading of Bram Stoker's Victorian vampire potboiler. Unlike other recent critics, Kittler's interest lies not primarily in the novel's *fin-de-siècle* Gothic horror tropes, nor in its exploration of the relationship between enlightened imperialism and its occult others, nor yet in Stoker's gendered subtexts of sexual violence and the rise of the New Woman. Instead, for Kittler, *Dracula* (1899) is a story about media machines and the technologies of writing. The novel's bloodsucking anti-hero is vanquished not by a stake through the heart but by an act of information processing. It isn't arch-vampire hunter Van Helsing who is the Count's real nemesis but the typewriter belonging to the hero's unassuming fiancée, Mina Harker, who tirelessly collates, transcribes, and relays the newspaper reports, journals, shorthand diary entries, and phonograph recordings necessary to track down the vampire. Against the Count's fiendish schemes are marshaled an array of up-to-the-minute data-storage and transmission technologies, along with their new species of (female) operator, as Mina and her typewriter become a conduit for the information that will ultimately defeat him. *Dracula,* Kittler declares, "is no vampire novel, but a written account of our bureaucratization" (73).

The specter at the heart of Stoker's story is that of modern technology rather than atavistic evil. The late nineteenth century's bureaucratic revolution involved the incursion of writing machines not merely into the workplace, but into the very fabric of existence, producing new kinds of writing and writers. And for Kittler, it is the shock of this technocultural transformation that Stoker's novel registers: it depicts a world that is recognizable as historical reality, but is at the same time unfamiliar and aggressively technologized, populated by machines that encroach into all areas of life and choreograph new types of behavior and social formations. In short, Kittler approaches *Dracula* as he approaches all literature: he reads it as science fiction.

His work continually reveals such unlikely texts as *Dracula*, the tales of E.T.A. Hoffman (1815-21), and Goethe's *Faust* (1808) as technological fables. In his hands, these disparate fictions become accounts of interactions between humans and machines in a defamiliarized, technologically saturated world. While Kittler is, as he periodically insists, a literary critic, in his writings literature always functions as part of a more general technological and cultural matrix. It occupies a slightly uneasy position, therefore. On the one hand, it is unmistakably a privileged focus of analysis, since it functions as what is termed a "discourse on discourse," a cultural form that is uniquely able to reflect the media conditions under which it is produced ("Discourse" 1). Yet as just one form of information processing among others, it is continuous with other techniques of storing and transmitting data and "not structurally different from

computers" ("Benn's Poetry" 11). Literature thus represents an insight into the workings of technological media at a certain moment in time. This fact not only accounts for the disparity of Kittler's chosen literary texts but also for their juxtaposition with historical material. In the first place, the specifics of literary genre and period are of interest only in so far as they allow comparison between different technological epochs. And in the second place, distinctions of fact and fiction are similarly irrelevant, since Nietzsche at his typewriter or the courtship letters of Kafka may be analyzed in parallel with literary tableaux as comparable "media scenes." Consequently, Kittler's work brings together an enjoyably incongruous range of subject matter: the poetry of Goethe, the development of stenography, Freudian psychoanalysis, higher mathematics, computing languages, and the music of Pink Floyd.

The hybrid nature of these disciplinary reference points makes Kittler's work particularly resistant to labels. Undoubtedly a "poststructuralist," his critical practice is nonetheless grounded in the mathematical communications theory of Claude Shannon and Norbert Wiener as much as it is in a humanities-based corpus of "Critical Theory." His persistent literary focus makes him an unlikely candidate for Science and Technology Studies or its neighboring sub-disciplines. But his idiosyncratic media-sensitive approach to textuality is not recognizable in terms of the practices that currently comprise literary studies, either. It is not surprising that those attempting to summarize Kittler's project have invariably resorted to listing what fields of scholarship his work spans: including "discourse analysis, structuralist psychoanalysis, and first generation media theory" (Winthrop-Young and Wutz xvi). This tendency to slip through the disciplinary net helps to explain why, in the Anglo-American academy at least, Kittler has not received the recognition of a comparable European figure such as Bruno Latour. Despite several spells as visiting professor at the University of California, Berkeley, and at Stanford, he remains a relatively obscure, almost cultish figure in the Anglophone world, and only a fraction of his substantial output has made its way into translation. His most influential works, *Discourse Networks 1800/1900* and *Gramophone, Film, Typewriter*, were both written in the mid-1980s, yet were not published in English until the following decade (the latter translated thirteen years after its initial German publication). As late as 1997, a volume of his collected essays (*Literature, Media, Information Systems*) aimed to "introduce" Kittler to an English-speaking readership and, to date, these three volumes represent his only book-length publications in English.

Kittler is less of a disciplinary oddity in his native country, however, where he has enjoyed a prolific thirty-year career and is currently Professor of Aesthetics and Media Studies at the Institute for Aesthetics and Cultural Studies at Berlin's Humboldt University. Here his work may be positioned as part of a school of "post-hermeneutic" criticism—"a distinctly German offshoot of poststructuralism that must be understood against the German reception in the 1970s of the French triumvirate of Derrida, Foucault, and Lacan" (Winthrop-Young and Wutz xvi).[1] The term "hermeneutic" in this context designates a particular construction of reading in which a text's inherent, immanent meaning is thought to be recovered by the attentive reader through a universal and

timeless act of "interpretation." The hermeneutic paradigm is thus a kind of "depth model" of textuality and language in general, which purports to read "through" a text to the meanings and realities that are assumed to lie behind or within it. And these essential meanings, transcending the vagaries of time and culture, tend to revolve around such privileged and unifying terms as "man," "author," "origin," "inwardness."

Put simply, Kittler's post-hermeneutic criticism switches the textual focus from "depth" to "surface" in an attempt to critique this paradigm. Its starting point is that "hermeneutic understanding is not at all what human beings always do with written or spoken texts, it is not a foundational condition for the processing of significant marks. Rather, it is a contingent phenomenon within the evolution of discursive practices in Europe" (Wellbery x). The legacy of poststructuralist thought is immediately evident in Kittler's project; his critique of hermeneutics has much in common with Derrida's attempts to deconstruct a pervasive "metaphysics of presence." Yet Kittler is more profoundly indebted to the poststructuralism of Foucault than to Derrida. Like Foucault, Kittler adopts Nietzsche's "genealogical" approach to the past, in that he seeks to expose the historical contingency of the foundational notions underpinning western culture. In particular, Kittler's preoccupation with the emergence and possible disappearance of "so-called man" (*Gramophone* xxxix) echoes the work of Foucault, for whom—in his memorable passage from *The Order of Things* (1966)—man is a figure drawn in the sand and effaced by the tide. Both thinkers reverse conventional assumptions about human subjectivity; rather than producing discourse, "man" is in effect produced *through* discourse. Crucially, though, what distinguishes Kittler's post-hermeneutic criticism from existing versions of poststructuralism is its insistence on materiality. While the concept of "discourse" (like its twin, "textuality") has suffered from overuse, becoming amorphous, abstract, and free-floating, Kittler revitalizes the term, anchoring it in a network of technologies and material practices.

The central concept in Kittler's theoretical framework, "Discourse Networks," indicates both his debt to Foucault and his angle of departure. The term as it appears in German, *Aufschreibsystem*, literally translates as "system of writing down" or "notation system" and is borrowed from Daniel Paul Schreber's much-cited 1903 volume, *Memoirs of My Nervous Illness*.[2] For Schreber, describing his own paranoid delusions, the term designated the mysterious, hallucinated mechanism through which his thoughts were instantaneously transcribed the moment they appeared. This suggestion of an automatic writing system, omnipresent yet having no identifiable point of origin, is one that Kittler finds useful in conceptualizing his own vision of a cultural inscription system. Significantly, it is also one whose startling conjunction of human agency and quasi-technological "systems" seems oddly prescient in its echoes of subsequent key science fiction tropes.[3] The concept of discourse networks, as used by Kittler, is an attempt to map the (inter)connections between "physical, technological, discursive, and social systems" (Winthrop-Young and Wutz xxiii). They are "the network of technologies and institutions that allow a given culture to select, store, and process relevant data" (*Discourse* 369). At once

inescapable and constitutive, they operate as the "frame-constituents" of knowledge. Or, as David Wellbery puts it, "discourse networks is a framework within which meaning and man become possible at all" (xii).

Such a concept has obvious correspondences with Foucault's system of "epistemes": both terms designate the historical conditions under which knowledge and meaning are possible, or else "the archive of what is inscribed by a culture at a particular moment in time" (Johnston 9). Both are imagined as a series of hegemonic cultural formations punctuated by sudden historical ruptures and disjunctions, and to a large extent the two chronological frame-works may even be mapped onto one another.[4] Unlike Foucault, however, Kittler asserts "the materiality of the print object itself as a locus for social relations and as a site for the construction of meaning" (Donatelli and Winthrop-Young viii). He explores not only the social construction of meaning, but its material deployment. Or, as the English translation of *aufschreibsystem* suggests, he shifts the emphasis from Foucauldian "discourse" to "technologi-cally embedded discourse networks" (Donatelli and Winthrop-Young vii). And in this sense the switch from hermeneutic depth to post-hermeneutic surface is to be taken literally: his focus is not on discourse or textuality in the abstract, but on its technological incarnations. So, while acknowledging a methodological debt, Kittler also spells out what he sees as the limitation of Foucault's work, in that it is largely insensitive to the issue of mediation. The latter's concept of the archive is confined to written documents, with the result that his mode of discourse analysis is unable to progress much beyond 1850.

In addressing itself to this "*impensée* or blindspot of poststructuralism" (Johnston 8), Kittler's work marks a "radical application of the concept of media to the field of cultures" (Griffin 709) and thus represents a new way of looking at textuality, reconfiguring it as a technology, a means of information storage and processing that must be considered alongside other, subsequent technologies. "All books ... are discourse networks," Kittler writes, "but not all discourse networks are books" (*Discourse* 298). Kittler's project describes how these discourse networks, each with their culturally pervasive media technologies, profoundly affect our interaction with language, ultimately producing historically different modes of literacy and understanding. Differing forms of textual and informational materiality, in other words, are capable of producing vastly different formations of culture and subjectivity. Early work from the 1970s and 1980s on "the age of Goethe" examined the interactions of literature, writing technologies, and the emerging social formations of individualism and the nuclear family in the early nineteenth century. While retaining this as a starting point, Kittler's interests expanded in subsequent years to incorporate the advent of electric media and, more recently, digital media. He identifies two moments of transformation a century apart, heralding the Discourse Network of 1800, then that of 1900. Discourse Network 2000 is a later, more tentative addition, making a tripartite historical structure that the remainder of this essay follows.

The symmetry of this chronological framework has, unsurprisingly, laid Kittler open to allegations of clunking historicism, an oversimplified "epochist way of thinking about technology" (Connor 1). But the very arbitrariness of

these dates seems more indicative of a provocative strain in Kittler's work than a lack of theoretical sophistication. Both stylistically and structurally, it consciously flouts the strictures of German academic writing, often being fragmented and "mosaic-like," with abrupt and disconcerting shifts between subjects or paragraphs. It follows difficult, densely argued passages with hyperbole, "syntactic coherence frequently yields to apodictic apercus ... and reasoned logic to sexy sound bites" (Winthrop-Young and Wutz xxvii). Seldom given to methodological pronouncements, Kittler leaves his readers to make sense of what Johnston terms the "fruitful ambiguities" in his writing (7). But such rhetorical strategies may deliberately evoke the aesthetics of other media. Kittler's style, it's been suggested, calls to mind cinematic jump-cuts or even hypertext, acknowledging the tension between the content of his work and its printed codex form.[5] Criticism of a lack of rigor may therefore be misplaced. Kittler's project is best seen not as a history of media in any conventional sense, but as something more experimental in spirit. It may be that his writings enact "the newness of technical media ... inscrib[ing] itself in outmoded book pages" ("Gramophone" 29).

1800. Kittler opens *Discourse Networks 1800/1900* with one of the most iconic scenes in the canon of German Romanticism. Alone at his desk and hemmed in by heaps of books, Goethe's Faust laments the slavish lifelessness of academic scholarship, which endlessly leads students around "by their noses." Tired of dealing in mere words, Faust wants real meaning and truth to reveal themselves to him and enlists the help of the supernatural to transcend the limitations of learning (ultimately getting, of course, more than he bargained for). This über-canonical moment of Promethean over-reaching functions, for Kittler, as a narrative that enacts the collision of two incompatible textual paradigms. The piles of dusty books that so frustrate Faust symbolize for Kittler a discourse network that by the time of Goethe is rapidly becoming obsolete. This eighteenth-century "republic of scholars" that continually defers to, and produces commentaries on, an unchanging body of existing scholarship is an "endless circulation, a discourse network without producers or consumers, which simply heaves words around" (*Discourse* 4). Faust's attempt to bypass this circulation and to access instead "true" meaning represents, by contrast, the incipient discourse network of Romanticism, with its stress on originality, genius, and the "transcendental signified" (11). Rather than adding to this parasitical economy of rhetoric, producing yet another translation or commentary on the Bible, Faust's revolutionary gesture is to attempt to replace "rhetorical paraphrase" with "hermeneutical translation" (12). He tries, therefore to transcend the biblical language, and access the truth behind it. This marks a transition from a logic of signifiers (a logic of substitution) to "the logic of signifieds, a fantasy according to which one irreplaceable signified replaces all replaceable signifiers" (12). With the advent of the new discourse network, "[t]ranslation becomes hermeneutics" (9).

Having established this Faustian scene as paradigmatic, Kittler then proceeds to show how Faust's revolutionary new textual paradigm is symptomatic of a

profound change in attitudes to literacy. Examining the pedagogical literature and primers of the influential Bavarian minister Heinrich Stephani, Kittler detects a widespread alteration in teaching methods in Germany around 1800. Previous methods of learning to read had emphasized rote memorization, and traditionally began with the pronunciation of long biblical names. It proceeded from the assumption that there was an arbitrary link between vocal sound and written letters, a link that must therefore be memorized by an effort of will. Such teaching methods had implicitly acknowledged "the materiality and opacity of signs" (39). The new method pioneered by Stephani, by contrast, proceeded from a different set of assumptions about language. This new phonetic method aimed to replace the laborious and artificial process of rote learning with "understanding." Rather than a series of sounds and signs, meaningless in themselves, language is now purported to be composed of elements that, however minimal, still signify in some way. Acquiring literacy is consequently a matter of perceiving the natural link between written word and sound.

The new pedagogy thus assumed a new set of relationships between subjectivity and language: language is not "imposed" on the human mind, but is seen as having something like an organic link with it. Poetry assumes an unprecedented significance in the discourse network of 1800 as the epitome of the romantic textual ideal, since here language exists not only as the spontaneous and unmediated expression of the author's creative spirit, but as the "translation of Nature" itself (64). "The text is an expression of Nature, a fixing of its unembellished accents and minimal signifieds" (63). Correspondingly, there arose an unprecedented emphasis on handwriting, not merely as a practical skill, but as an expression of individuality, inwardness, and a "mode of self-authentication" (Tabbi and Wutz 28). The fluency and consistency of such script indicated, supposedly, a correspondingly rounded and consistent personality. The discourse network of 1800 thus rested on a direct correlation, Kittler argues, between "organically coherent handwriting" and "bourgeois individual" (*Discourse* 82). The involvement of mothers in the process of acculturation was a key part of the new mode of literacy. Where education had been previously an official and male preserve, mothers were now informed, through innumerable primers and pedagogical tracts, that it was their "natural" and maternal duty to teach their children to read and write. The child learned not though any artificial means, but from the natural example of the mother's pronunciation of written signs. Hence the central importance in Kittler's formulation of the concept of "The Mother's Mouth": "The Mother's Mouth thus frees children from books. Her voice substituted sounds for letters, just as in the course of his Scholar's Tragedy Faust substituted meanings for words" (34). In Kittler's terms, written language in the discourse network of 1800 becomes "oralized." "The new method opposed all rote learning and exteriority with an inner voice, which made letters ... 'into nothing but sounds'" (33).

The new oralized literacy differed from previous modes in that the sounds of words were internalized to the extent that "reading ... was an exercise in scriptographically or typographically induced verbal hallucinations, whereby linguistic signs were commuted into sounds and images" (Tabbi and Wutz 99).

The new Romantic textual paradigm was thus predicated on the notion of what Kittler terms a "primary orality," in that "writers ... understood language as a form of originary orality, a transcendental inner voice superior and anterior to any form of written language" (Winthrop-Young and Wutz xxiv). Moreover, because of the central importance of the maternal role in this process, the new literacy entailed a fundamental realignment of gender categories. Women, in this discourse network, lose their specificity and plurality and become identified instead with "Woman"—a synecdoche for Nature, the "mute and mysterious" Other. She is the Romantic muse who does not herself speak but who facilitates and presides over the poetic discourse of male writers. The "system of equivalents" Woman=Nature=Mother thus gives language an "absolute origin": all arbitrariness disappears and language becomes instead an ideal of nature. "The origin of language, once a creation ex nihilo, becomes a maternal gestation" (*Discourse* 28, 25). This paradigm thus rested on a paradox, or what Kittler terms a "shortcircuit." The "hermeneutically-conditioned readers" of 1800 were able to forget the textual nature of text, and were able to conceive of it instead as an extension of nature, because the discourse network effectively operated to suppress its own materiality and origins (Winthrop-Young and Wutz xxiv). The Mother, as fountainhead of this new oralized form of literacy, is not herself supposed to have been taught to read by any artificial means. Rather, as incarnation of Nature, she is supposed instead to somehow "possess" literacy, since language is now also a natural phenomenon. "Romanticism is the discursive production of the mother as the source of discursive production" (Wellbery xxiii).

Having elaborated the discourse network of 1800, Kittler shows how it is implicated in the widespread social reorganization in Germany in the period. Oralized literacy acted as a form of socialization, in that it interpellated certain useful kinds of subjects. In particular, it facilitated the gendered forms of subjectivity that were necessary for the emergent nineteenth-century ideal of the nuclear family. The acculturation process of 1800 created, on the one hand, a network of male readers, writers, and bureaucrats, and on the other hand, an army of silent mothers. German poetry positioned men as the producers of texts, and women as the consumers. The Romantic hermeneutic paradigm, with its claims of ahistoricality and universality, is exposed as an historical phenomenon, as the byproduct of a change in the materiality of literacy.

Kittler's approach here is no Marxist-informed "ideology" of Romanticism, however: there are "no hidden truths to be uncovered" (Wellbery xvii), since such a "depth model" would succumb to the very hermeneutic paradigm that Kittler attempts to deconstruct. Instead, "Kittler's innovation is to replace the traditional causal expressive mode of sociological explanation with a cybernetic one" (Wellbery xviii). In this mode of criticism, "getting outside" of hermeneutics not only allows us to see the materiality of the text, but also, significantly, to see that the hermeneutic, interpretative paradigm (with all its attendant notions of "meaning," "essence," "man") is itself on one level merely a result of a particular form of textual materiality: "depth interpretations ... are themselves *effects*: effects, among others, of situations, media, and technologies of

'communication''(Gumbrecht and Pfeiffer 3). As David Wellbery explains: "[p]rimary orality, the Mother, the self-presence of the origin: these are not merely sublimations or philosophical hallucinations, they are discursive facts, nodal points in a positive and empirical discursive network" (xxiii) This empirical discursive network, moreover, is embedded in the social and cultural fabric, and in relationships of power. Thus, German literature of 1800 became "a means of programming people" (xxi). Operating therefore as a kind of "cultural inscription program," it facilitated and regulated social and familial relationships as well as enabling the production of a certain kind of useful notion of national identity.

1900. The discourse network of 1900 marks, by contrast, the re-emergence of these media materialities. Kittler's paradigmatic scene here is the figure of Nietszche in his study, reflecting in despair on the ultimate meaningless of his own act of writing. Nietszche experiences almost the exact reverse of the enchantment of language described by Faust, and a contrasting disenchantment and disillusionment with language. "[B]are and impoverished, the scratching of the pen exposes a function that had never been described: writing in its materiality" (*Discourse* 181). This foregrounding of materiality is connected to the emergence of new forms of media: the typewriter, the gramophone, and film. With the advent of the typewriter, some of the fundamental assumptions about the significance of the physical act of writing were transformed. Where handwriting was a natural and inevitable expression of inwardness, the typewriter abruptly and conspicuously severed the perceived link between personality and written text. It "unlinks hand, eye, and letter within the moment that was decisive for the age of Goethe" (195). Writing, once conceived of as a quasi-mystical activity, as the ultimate expression of inwardness, becomes visible simply as a series of mechanical marks on a page: "writing was no longer the handwritten, continuous transition from nature to culture. It became selection from a countable, spatialized supply" (194). Shorn of its transcendent, oralized status, the signifier emerges in its naked materiality.

Moreover, the existence of new media capable of recording sound and pictures challenges the sanctified status of written language as the only available means of conveying information. Gramophone and film "broke the monopoly of writing, started a non-literary (but equally serial) data processing." Where "the discourse network of 1800 depended upon writing as the sole, linear channel for processing and storing information," this media hegemony is ended by the emergence of other, mechanical forms of conveying information (Winthrop-Young and Wutz xxv, xxiv). With the advent of these other kinds of media occurs a splitting of "language channels," or the "differentiation of data streams" (Winthrop-Young and Wutz xxv). Writing's strategic obscuring of its own materiality and mediality can no longer be sustained, and thus it becomes visible in an unprecedented way precisely as *media*: "script, instead of continuing to be a translation from the mother's mouth, has become an irreducible medium among media" (*Discourse* 199).

Kittler contrasts the phonetic literacy and pedagogical techniques of 1800 with "psychophysics" a century later. Herman Ebbinghaus, whose research into the workings of memory involved repeated attempts to memorize streams of meaningless syllables, deliberately divested language of any meaning whatsoever. He reduced it to gibberish—a series of arbitrary and random sounds. Psychophysics "takes language to a point where it stops making sense" (Wellbery xxix). So where hermeneutics had given central importance to the meaning of language, what became visible and significant in 1900 is the inverse of this—language as nonsense and "noise." Ebbinghaus's linguistic learning process did not follow the "natural" and maternal route from mother to child. Rather, it was a forcible and almost violent imprinting of language onto the brain. Divorced form its mystical origins in the Mother's Mouth, language lost the hallucinatory orality of 1800: "neither sound nor phonetic method supports a writing that occurs without preliminary speech and so without a soul" (*Discourse* 183). The myth of primary orality disappeared (the only sound for Nietzsche being that of his pen scratching on the paper).

Language loses its mystical feminine and maternal origin, and Woman correspondingly loses her status as muse and eternal Other. With the discourse network of 1900, Kittler contends, women re-emerge in their plurality. "Woman" the figure of muse and mother in the discourse network of 1800, is replaced by "women," and the latter, unlike the former, are granted cultural access to writing technologies. Pointing out that the word "typewriter" initially designated both the machine and its (female) operator, he argues that the discourse of 1900 "inverts the gender of writing" (*Gramophone* 183). But if the growing army of early-twentieth-century female typists may be permitted to write, it is not in order to express their innermost thoughts and feelings, but to transcribe endless streams of information authored by others (as the tireless secretarial efficacy of Mina Harker illustrates in *Dracula*). And as writing becomes word-processing, the quasi-mystical role accorded to literature, and in particular poetry, under the hermeneutic model can no longer be sustained; "when the one Mother gave way to a plurality of women, when the alphabetization-made-flesh gave way to technological media ... Poetry also disintegrated" (*Discourse* 178).

The transition from the discourse network of 1800 to that of 1900 marks the transition "from the magic of letters to the histrionics of media," and the transcendental signified of Romantic poetry gives way to the very different textual paradigm of Modernism, which foregrounds instead the material signified. For modernist poets, experimenting with the kind of nonsensical decomposition of language seen in Ebbinghaus's test, words are no longer the result of natural correspondences but are conventions held in place by the logic of "pure differentiality" (*Discourse* 89). "Mechanized and materially specific, literature disappears," Kittler states (226). And with this disappearance of "Poetry" and "Woman" goes another central term in the discourse network of 1800. The figure of "Man" as an autonomous, unified entity and origin of linguistic meaning is also dismantled by the new media technologies. Writing is no longer an expression of an authentic, unique selfhood, because there is no

such thing to express. Freudian psychoanalysis, like Ebbinghaus's psychophysics, reconfigures identity not as a coherent whole but as a series of discrete functions, as a set of recording, storage, and processing capacities that, like the unconscious, may exist in a semi-autonomous relationship with one another. Firstly, the splitting of language channels into different media is echoed in the splitting of the human subject. Secondly, instead of being the origin or author of meaning, the subject becomes an inscription surface, as Freud's image of the unconscious as a "mystic writing pad" indicates. Unafraid of hyperbole, Kittler declares that "[M]an simply died around 1900" (258).

Picking up on the implicitly technological nuances of another Freudian term, "psychic apparatus," Kittler argues that psychoanalysis, as part of the discourse network of 1900, imagines human psychological and cognitive functions as media mechanisms. "Freud's materialism reasoned only as far as the information machines of his epoch—no more, no less" ("World" 134). This insight gives Kittler the opportunity for his most innovative and unusual application of Lacanian psychoanalytic theory. He argues that Lacan's structuralist appropriation and reformulation of the principles of psychoanalysis is effectively a recognition of the implicit media foundations of Freudian theory.

> In constructing his model of the psychic apparatus Freud implemented all storage and transmission media available at the time.... Lacan grasped not only the importance of these technical media for Freudian theory ... but also the extent to which the foundations of psychoanalysis rested on the end of the print monopoly and the historical separation of different media. (Johnston 24)

Lacan's division of the psyche into the registers of the real, the imaginary, and the symbolic is presented as corresponding to the three-way splitting of media channels in the discourse of 1900. Cinema, with its idealized images of the human form, is aligned with the Lacanian imaginary order, in which the human infant (mis)recognizes a reflection of its own unified self. The real, relating to that which lies outside the field of representation, corresponds to the function of the gramophone, which captures noise in its raw state prior to any semiotic ordering process. The symbolic order, in which a structure of differentiated signifiers produces meaning, is technologically embodied in the typewriter. Thus, Kittler argues, what Lacan makes explicit is that psychoanalysis reconfigures the psyche according to the logic of new media technologies. Human identity, as constituted in the discourse network of 1900, is forced through the available media channels of the gramophone, film and typewriter.

2000. The Discourse Network of 2000 is the most hesitantly sketched stage of Kittler's chronological frameworks. He begins to explore the digital media environment in *Gramophone, Film, Typewriter*, which discusses at length the significance of Alan Turing's code-breaking machine, and then its subsequent evolution into the computer. Yet there is an ambiguity about whether Turing's invention constitutes part of the continued discourse network of 1900 or is being presented as a new kind of technological and cultural paradigm. A similar doubt seems to attach itself to the cybernetic models that Kittler both discusses and to some extent utilizes. In comparison with his consideration of earlier discourse

networks, there is a good deal of chronological uncertainty as to the whereabouts of the epistemological break heralding the emergence of the discourse network of 2000. And the whole question of whether our present situation may be apprehended is one that Kittler himself seems unsure about. While at points he seems to move towards an elaboration of it, at other times he retreats from the possibility that it may be analyzed. *Contra* McLuhan, Kittler declares that "it remains an impossibility to understand media ... the communications technologies of the day exercise remote control over all understanding and evoke its illusion" ("Gramophone" 30). These inconsistencies indicate the difficulties involved in bringing his historical media narrative up to date. As John Johnston points out, any attempt to "explain" the present moment inevitably raises fraught questions concerning the position of Kittler's own critical discourse in relation to its cultural and technological context, since "methodological constraints determine that an event inaugurating another discourse network can only be identified retrospectively" (6).

Despite Johnston's conclusion that Kittler must therefore "remain silent" about the Discourse Network of 2000, however, his later work undoubtedly has moved toward a consideration of the technological condition of the present. We exist currently in an environment of "partially connected media systems," he has argued, giving the example of the jumbo jet, which consists of separate but overlapping systems (the onboard navigation equipment, the air supply mechanism, the communications link with air traffic control). Such partial connection seems to be a stage enroute to a situation in which all systems are incorporated into one seamless web of information. The discourse network of 1900, which split information channels into separate media, will be (or has been) replaced by a total hegemony of digitized information that reunites them. "The general digitalization of information and channels erases the differences between individual media.... In computers everything becomes number: imageless, soundless, wordless quantity. And if the optical fiber network reduces all formerly separate data flows into one standardized digital series of numbers, any medium can be translated into another" ("Gramophone" 31-32). Such de-differentiation of media channels, Kittler argues, "erases the notion of media itself." However, while such a development might appear to mirror the discourse network of 1800, in which writing predates the splitting of media channels, this does not constitute a "return" to the hermeneutic paradigm, and a re-enchantment of language. Kittler's companion essays "There is no Software" and "Protected Mode," both reprinted in *Literature, Media, Information Systems* (1997), spell out a much more dystopian vision of digital hegemony in which corporate control of computer systems prevents any significant user intervention into their functioning. Software environments, while they appear to provide user-friendly access to computers, effectively determine the parameters of discourse, setting limits around what may or may not be done, programmed, or written by the computer user. "'Software' simply names [and obscures] the strategy of simulation that secretly governs today's writing subjects and the bureaucracies within which they operate" (Johnston 26).

If Kittler's misgivings about elaborating a post-1900 discourse network are evident in the brevity of this account, they may also be evident in the fact that the most recent literary text he discusses is from the early 1970s. His literary investigations into the latter part of the twentieth century are largely focused on the cybernetic fictions of Thomas Pynchon, thus confining them to a territory that lies not only at a safe chronological distance but, equally significantly, within secure canonical boundaries. Kittler's choice of textual and literary materials, while eclectic, displays at times some curious blind spots. It would seem logical that Kittler's analysis, which privileges literature as a repository of the technocultural imaginary, might be particularly productive in relation to science fiction as a genre. And in the case of discourse network 1900 this indeed is shown to be the case. Here, Kittler's literary case studies are a quirky mixture of the canonical, the non-canonical, and the plain obscure. He analyzes the writings of Nietzsche alongside the proto-science fiction of Villiers de l'Isle-Adam, whose *Tomorrow's Eve* (1886), with its plot involving a mechanical woman, is used repeatedly as a key example of the cultural transformation of woman from eternal feminine and poetic muse into the thoroughly demystified component of a mechanized process of bureaucratic language production. But in dealing with later developments involving computing, cybernetics, and digital information, Kittler finds nothing to say about science fiction texts.

Thus, while Kittler strategically "uncovers" the science-fictional thematics of other literatures, he shows a curious reluctance to engage with the genre of science fiction itself. It is left to Scott Bukatman, in his essay "Gibson's Typewriter," to deliver a "Kittlerian" reading of that most iconic of sf novels, William Gibson's *Neuromancer* (1984). Bukatman begins with the apparent irony that the author wrote the founding text of cyberpunk on a manual typewriter. He uses this irony to problematize and historicize the slick neophilia of the novel, whose gleaming ultra-modern virtual spaces are in fact embedded in an older history of industrial technologies. Bukatman quotes Gibson himself on the subject of the cyberspace novels: "I suspect they're actually about what we do with machines, what machines do with us, and how wholly unconscious ... this process has been, is, and will be" (qtd in Bukatman 99).

If this sentence seems as apt a description of Kittler's writings as it does of Gibson's, it hints at some potential overlaps between Kittler's investigations into the history of technology and some recent developments in sf. The most obvious example of this is the subgenre of "steampunk," whose events take place not in a strange future world, but in a technologically defamiliarized past. Character-ized by a fascination for elaborate Victoriana and the squalor of the Dickensian metropolis, steampunk found its clearest and most memorable expression in *The Difference Engine* (1990), Bruce Sterling and William Gibson's attempt to envisage a nineteenth-century London in which the inventor Charles Babbage's designs for the eponymous computing device were actually realized, and society was "computerized" one hundred years before Turing. Where Kittler uncovers a history of "data processing" and technological unease well before the advent of the computer, then, *The Difference Engine* pushes back the data processing

revolution in a more literal sense, reimagining the history of modern computing in a chaotically industrialized Victorian London.

And while steampunk may have finished its brief flourishing by the early 1990s, its legacy arguably lives on in the work of Neal Stephenson, whose recent novels have built a historical cycle of ambitious proportions. Having written *Cryptonomicon* (1999), a labyrinthine prehistory of computing and global financial systems set predominantly during World War II, Stephenson has subsequently completed a three-volume "prequel." The three books in this trilogy, *Quicksilver* (2003), *The Confusion* (2004), and *The System of the World* (2005), trace his interconnected themes of technological and financial systems back to the late-seventeenth and early-eighteenth centuries, a pivotal period in which modern science emerges in fraught circumstances. As with steampunk, the historically factual mingles with the fictional, and amid Stephenson's sprawling picaresque narrative the characters of Newton and Leibniz battle for authority over the new scientific knowledge. While the historical reference points may predate Kittler's chronological framework, the similarities are evident. Stephenson's writing is concerned with radically historicizing technology, but also with examining moments of shift and uncertainty that accompany its emergence, when an established system gives way to a newer one based on science and commerce. Steampunk, along with its more recent offshoots, indicates an impulse to excavate the strange, problematic, and grimy past of machines, rather than focusing on their gleaming future. These alternative, technologically-saturated histories thus represent an odd but undeniable parallel to Kittler's work, suggesting that a Kittlerian approach to the field of science fiction may produce some intriguing and worthwhile insights.

NOTES

1. The term "post-hermeneutic" is elaborated by David Wellbery in his introduction to *Discourse Networks,* but is also used in variant form elsewhere to describe Kittler's project (the term "posthermeneutics" appears on the cover of *Literature, Media, Information Systems*, and Gumbrecht uses "nonhermeneutic"). Other practitioners identified with this mode of criticism include Kittler's lesser known colleagues Norbert Bolz and Jochen Horisch.

2. As Rosemary Dinnage writes in her introduction to a recent edition of Schreber's *Memoirs*, "From the time that Freud's celebrated paper about it was published in 1911, everyone has had something to say about Schreber" (xi).

3. The proto-science fictional nature of Schreber's narrative is nowhere made more explicit than in the 1998 Alex Proyas film *Dark City*, in which Kiefer Sutherland portrays one "Daniel Paul Schreber," an archetypal mad doctor who implants memories into his subjects. Part film-noir homage, part sci-fi dystopia, the film uses a curiously refracted (and sanitized) version of Schreber's delusions as the basis of a flimsy plot featuring an amnesiac city under the control of a sinister cabal of psychic aliens.

4. Winthrop-Young and Wutz demonstrate how Kittler and Foucault's chronologies relate to one another (xxiii).

5. O'Gorman suggests the similarity to hypertext, while Winthrop-Young and Wutz suggest the cinematic analogy.

WORKS CITED

Bukatman, Scott. "Gibson's Typewriter." *Flame Wars*. Ed. Mark Dery. Durham: Duke UP, 1994. 80-89.

Connor, Steven. "Modernism and the Writing Hand." November 12, 2005. <http://www.bbk.ac.uk/english/skc/modhand.htm>.

Dinnage, Rosemary. "Introduction." *Memoirs of My Nervous Illness*. By Daniel Paul Schreber. Trans. Ida MacAline and Richard A. Hunter. New York: New York Review of Books, 2000. xi-xxiv.

Donatelli, Joseph and Geoffrey Winthrop-Young. "Why Media Matters: An Introduction." *Mosaic* 28.4 (December 1995): v-xxiv.

Gibson, William, and Bruce Sterling. *The Difference Engine*. London: Gollancz, 1990.

Griffin, Matthew. "Literary Studies +/- Literature: Friedrich Kittler's Media Histories." *New Literary History* 27.4 (Autumn 1996): 709-16.

———— and Susanne Herrmann. "Technologies of Writing: Interview with Friedrich A. Kittler." *New Literary History* 27.4 (Autumn 1996): 731-42.

Gumbrecht, H.U. and K.L. Pfeiffer. *Materialities of Communication*. Stanford: Stanford UP, 1994.

Johnston, John. "Introduction: Friedrich Kittler: Media Theory After Poststructuralism." *Literature, Media, Information Systems*. By Friedrich Kittler. Ed. Johnston. Amsterdam: G+B Arts, 1997. 1-26.

Kittler, Friedrich. "Benn's Poetry—A Hit in the Charts." *SubStance: A Review of Theory and Literary Criticism*, 19.1 (1990) : 5-20.

———— . *Discourse Networks 1800/1900*. 1985. Trans. Michael Metteer, with Chris Cullens. Stanford, CA: Stanford UP, 1990.

———— . "A Discourse on Discourse." *Stanford Literature Review* 3.1 (Spring 1986): 157-66.

———— . "Dracula's Legacy." 1982. Trans. William Stephen Davis. *Literature, Media, Information Systems*. Ed. John Johnston. Amsterdam: G+B Arts, 1997. 130-46.

———— . "Gramophone, Film, Typewriter." 1987. Trans. Dorothea Von Mücke, with Philippe L. Similon. *Literature, Media, Information Systems*. Ed. John Johnston. Amsterdam: G+B Arts, 1997. 28-49.

———— . *Gramophone, Film, Typewriter*. 1986. Trans. Geoffrey Winthrop-Young and Michael Wutz. Stanford: Stanford UP, 1999.

———— . "The World of the Symbolic—A World of the Machine." Trans. Stefanie Harris. *Literature, Media, Information Systems*. Ed. John Johnston. Amsterdam: G+B Arts, 1997. 130-46.

O'Gorman, Marcel. "Friedrich Kittler's Media Scenes—An Instruction Manual." Review of *Literature, Media, Information Systems*. November 12, 2005. <http://www3.iath.virginia.edu/pmc/text-only/issue.999/10.1.r_ogorman.txt>.

Stephenson, Neal. *The Confusion*. London: Heinemann, 2004.

———— . *Cryptonomicon*. London: Heinemann, 1999.

———— . *Quicksilver*. London: Heinemann, 2003.

———— . *The System of the World*. London: Heinemann, 2005.

Tabbi, Joseph and Michael Wutz, eds. *Reading Matters: Narrative in the New Media Ecology*. Ithaca: Cornell UP, 1997.

Wellbery, David E. "Foreword." *Discourse Networks 1800/1900*. By Friedrich Kittler. Stanford, CA: Stanford UP, 1990.

Winthrop-Young, Geoffrey and Michael Wutz. "Translator's Introduction: Friedrich Kittler and Media Discourse Analysis." *Gramophone, Film, Typewriter*. Stanford: Stanford UP, 1999. xi-xxxviii.

ABSTRACT

This article presents an overview of the work of Friedrich Kittler, tracing the trajectory of his thought over his thirty-year career and locating his work in a contemporary theoretical context, before suggesting ways in which it may be relevant to the field of sf studies. Kittler's eclectic brand of poststructuralist media theory defies categorization but offers an idiosyncratic version of literary history in which literature is understood to function as part of a more general technocultural matrix or "discourse network." The article begins by exploring this central conept: according to Kittler, discourse networks operate at the material and technological, as well as the discursive, levels, determining the frameworks of knowledge at any given historical moment. It then goes on to outline Kittler's investigations into three such networks, each a century apart. While the contrasting textual and media paradigms of 1800 and 1900 are fully explored in his work, that of 2000 appears notably more problematic; this ambivalence about theorizing the contemporary has prevented any effective engagement with the genre of science fiction. The article concludes by suggesting ways that a Kittlerian approach could usefully be applied to sf, mapping out some intriguing affinities between Kittler's work and recent "historical" modes of sf, particularly Neal Stephenson's post-steampunk BAROQUE CYCLE novels.