The Noises of American Literature, 1890–1985
Toward a History of Literary Acoustics

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Introduction

On returning to New York in 1905, after almost forty years of absence, Henry Adams describes the visual and acoustic panorama he encounters in the following terms:

The outline of the city became frantic in its effort to explain something that defied meaning. Power seemed to have outgrown its servitude and to have asserted its freedom. The cylinder had exploded, and thrown great masses of stone and steam against the sky. The city had the air and movement of hysteria, and the citizens were crying, in every accent of anger and alarm, that the new forces must at any cost be brought under control. [..] Everyone saw it, and every municipal election shrieked chaos. A traveller in the highways of history looked out of the club window on the turmoil of Fifth Avenue, and felt himself in Rome, under Diocletian, witnessing the anarchy, conscious of the compulsion, eager for the solution, but unable to conceive whence the next impulse was to come or how it was to act. The two-thousand-years failure of Christianity roared upward from Broadway, and no Constantine the Great was in sight. (The Education 471–72)

Adams's The Education of Henry Adams (1907/18) documents an intellectual's heroic if failed effort to bring the forces of modernization under noetic control, to tame the noises of modernity through an act of intellectual imagination. Adams's dynamic theory of history, expounded at length in the second half of The Education and in his "Letter to American Teachers of History," imports the second law of thermodynamics into historiography to account for what he perceives as a world-historical process of entropic degradation, an irreversible descent into disorder and chaos. The purpose of Adams's borrowing from the natural sciences is not to deny multiplicity but to master it by bringing it into the framework of a unified and unifying scientific doctrine. It is in the context of this scientific framework that the physical noises of modernity are figuratively aligned with disorder and chaos: "Every day nature violently revolted, causing so-called accidents with enormous destruction of property and life, while plainly laughing at man,
who helplessly groaned and shrieked and shuddered, but never for a single instant could stop. The railways alone approached the carnage of war; automobiles and fire-arms ravaged society, until an earthquake became almost a nervous relaxation" (467). For Adams, a resigned critic of his times, this multiplicity and noise needed to be mastered at all cost: "Law should be Evolution from lower to higher, aggregation of the atom in the mass, concentration of multiplicity in unity, compulsion of anarchy in order; and he would force himself to follow wherever it led, though he should sacrifice five thousand millions more in money, and a million more lives" (224).

In Genesis, published originally in French in 1982 and translated into English in 1995, the French historian of science and philosopher Michel Serres urges us to think differently about unity and multiplicity, order and noise:

A noisy philosophy would be the shadow of Leibnizianism. The latter relegates it to little departments. In the seventeenth century, you see, hatred was limited and squabbling was confined. The uproar, the murmur of the sea, the generalized confused battle, nausea, are not avoided, but, once again, are the effect of narrowness or limited perceptions [...] Clearly, we will have to retain the word noise, the sole positive word for describing a state we otherwise can only designate in negative terms, such as disorder. The noisy sea is always there, present, dangerous. To be sure, it's enough to make one shudder with fear. Leibniz lumps everything into the differential, and under the numberless thickness of successive orders of integration. The mechanism is admirable. No one ever went so far in rational mastery, down into the innermost little recesses of the smallest departments. The straight line of reason that must turn its back on this chaos is the ascent into those scalar orders. That way lies before us, it is infinite, the perfect flat projection remains inaccessible. It is divine, it is invisible. (What noise does the classical age repress, to what clamor does it close its ears in order to invent our rationalism?) (20-21)

In disassociating himself from the erection of Leibnizian edifices of reason, Serres at the same time abandons Adams's rationalist project and quest for unity in favor of a philosophy that attempts "to think the multiple as such" (6), accounts for background noise as "the basic element of the software of all our logic" (7) and "the first object of metaphysics" (54), remembers that Aphrodite was "born of the chaotic sea, this nautical chaos, the noise" (25), and for which "the work is a confident chord" while "the masterwork trembles with noise" (18). Serres' allegiance to multiplicity and noise defines itself both positively, in its celebration of the birth of things out of chaos and noise, and negatively, in its denunciation of the violence that inheres, as Adams already perceived, in the move from the many to the one.

Between these two texts, published near the turn of two different centuries, a fundamental reevaluation of noise has taken place.

It is the purpose of this book to chart this by no means linear history as it manifests itself in and through literary texts from the naturalist to the postmodern period in American literature. Literature, it will be argued, is not solely a privileged site for the representation of the noises of our acoustic world but is itself a discourse that generates noise within the channels of cultural communication. As such, literature from the late nineteenth to the late twentieth century negotiates, affirms, critiques, and becomes an integral part of the acoustics of modernity/postmodernity. The remainder of this introduction provides a twofold setting for thinking about that acoustics and its relation to literary discourse. It first outlines a number of key moments in the history of ideas on noise outside the literary field and then suggests ways in which that history can be made fruitful for literary and cultural studies.

Near the beginning of such a history, however, we already encounter a text that calls into question any strict distinction between the literary and the nonliterary, a text that sits on the fence between religious treatise and literary work. In The Epic of Gilgamesh, written in the second millennium BC, noise is an offense punishable by the gods:

In those days the world teemed, the people multiplied, the world belied like a wild bull, and the great god was aroused by the clamor.

Enlil heard the clamour and he said to the gods in council, "The uproar of mankind is intolerable and sleep is no longer possible by reason of the babel." So the gods agreed to exterminate mankind. (108)

In this Sumerian version of the flood, noise already occupies the place it still occupies for most of us today: noise is a nuisance, an unwanted signal. This corresponds both to its earliest recorded sense and its current dictionary definition as "a sound that lacks agreeable musical quality or is noticeably loud, harsh, or discordant" (Webster's Third New International Dictionary).

Since the 1960s, noise pollution has been recognized as an environmental problem, a health hazard, and grounds for legal action. Today, the World
Health Organization (WHO) puts noise on top of the environmental agenda. In the executive summary of its Guidelines for Community Noise (1999), the WHO states: “In contrast to many other environmental problems, noise pollution continues to grow and it is accompanied by an increasing number of complaints from people exposed to the noise. The growth in noise pollution is unsustainable because it involves direct, as well as cumulative, adverse health effects. It also adversely affects future generations, and has socio-cultural, esthetic and economic effects” (par. 3).

The quality of our acoustic environment has changed radically since the introduction of the internal combustion engine and electricity in the industrial revolutions. As Emily Thompson documents in The Soundscape of Modernity (2002), acousticians and sound engineers have been responding to the noise problem since the 1920s. Since then, new engines and industrial machines, cars and road surfaces, airplanes and airports with significantly reduced noise emission have been designed, and noise-abatement legislation has further contributed to diminishing environmental noise. However, a steady increase in mobility and a growing demand for heavier cars with broader tires and higher-performance engines—take the fashionable idiocy of driving SUVs in a (sub)urban environment as one indicator—has overcompensated for any noise-reduction measures. Today, road traffic is by far the biggest source of noise (U.S. Environmental Protection Agency; Hofmann, “Lärmbekämpfung”).

Still other, more subtle kinds of noise have proliferated since electricity was introduced, especially so since the onset of the information revolution in the early 1970s. In the centers of global economic activity, large sections of the population are exposed to a continual bombardment of low-impact noise emitted by all sorts of electrical appliances (refrigerators, air conditioners, computers, TVs, radios, and so on). While the noise produced by these machines often goes unrecognized, it contributes significantly to the extremely dense texture of our acoustic environment. In its uniformity and lack of variance, it provides the constant background noise, the “white noise,” against which other acoustic phenomena struggle to make themselves heard. Because its energy is distributed over a large section of the audible range, such broad-band noise has the effect of masking potentially more meaningful sounds to the point of impeding human communication: “The result is a kind of aural ‘crowding’—the distance over which one communicates is severely reduced, and that space starts to include few other people” (Truax 2001, 139–40).

Dissatisfied with current approaches to the noise problem—which rely heavily on noise studies and consultants who treat noise from a signal-processing approach that disregards informational, contextual, and systemic aspects—Barry Truax in Acoustic Communication (1984; 2001) opts for a communicational approach that conceptualizes noise as a communicative disturbance: “We have characterized sound as having a mediating effect on, and therefore as creating relationships between, the individual and the environment. Noise seems to be the source of a negative mediation of such relationships, an alienating force that loosens the contact the listener has with the environment, and an irritant that works against effective communication” (Truax 2001, 94).

Writers of fiction long ago recognized this communicational dimension of noise pollution. By the time Dos Passos wrote Manhattan Transfer (1925), noise had seeped from the factories into the streets of New York, forcing characters to retreat into silent insides to make themselves heard:

An elevated train shattered the barred sunlight overhead. He could see Ruth’s mouth forming words.

“Look,” he shouted above the diminishing clatter. “Let’s go have brunch at the Campus and then go for a walk on the Palisades.” […]

“Then there’s Mrs Sunderland . . .

“Oh yes I got a glimpse of her going into the bathroom—an old lady in a wadded dressing gown with a pink boudoir cap on.”

“Jimmy you shock me . . . She keeps losing her false teeth,” began Ruth; an L train drownd out the rest. The restaurant door closing behind them choked off the roar of wheels on trains. (128)

Dos Passos writes at a time when “traditional auditory irritants were increasingly drowned out by the din of modern technology” (E. Thompson 6). His depictions of urban and industrial acoustic environments belong to a tradition of technology critique that can be traced back to writings on technology by Karl Marx, Jacques Ellul, Lewis Mumford, and Martin Heidegger and that surfaces in the literary works of, among others, Henry David Thoreau, Sarah Orne Jewett, Henry Adams, Sinclair Lewis, John Steinbeck, and Don DeLillo (Mitcham and Casey; L. Marx, “The Machine”). It is a tradition that
reaches an early literary apex in Stephen Crane’s depiction of the noise of war in *The Red Badge of Courage* (1895). In Crane’s grim vision, noise is not only an impediment to human communication; it is a form of sonic violence. Yet from Truax’s communicational perspective, noise is not necessarily that which drowns out human language and threatens our psychological as well as physiological well-being. While he is mainly and deeply concerned about the deterioration of the contemporary acoustic environment, Truax does recognize that noise can be a potentially meaningful element of communication:

as pointed out by Bateson (1972) and others, noise, in the sense of information that is unpatterned and unordered by the brain, is the only source of new information. The foreign language or musical style that once seemed unintelligible becomes meaningful once the cognitive structures that are required to decode and understand it are in place. [..] This sense of the word is farthest removed from that associated with sounds that are psychologically irritating or stressful. Whereas such annoyance reactions seem ingrained and unchangeable in us, noise as a source of new information is open-ended and offers the promise of all that we may possibly experience. (2001, 97)

Truax here refers to the systems-theoretic order-from-noise principle, which states that systemic evolution depends on environmental perturbations that trigger processes by which systems transform external noise into internal order and information, thus evolving into higher states of complexity. From a systems perspective, disruptions, errors, and noise are indispensable to the long-term survival of any system and constitute the motor of systemic evolution (Foerster; Maturana and Varela; Luhmann, *Social Systems*).

Systems theory builds on the work of biologists who, in the 1930s, began to claim that the reductive-deductive approach taken by physics could not describe the complexity of life (Kneer and Nassehi 17–22). But the roots of its interest in noise must be sought in another field. It is with Claude E. Shannon’s pioneering work in information theory that we may begin to account for the role of noise in communication processes in terms that are not exclusively negative. In his seminal paper “The Mathematical Theory of Communication” (1948), Shannon insisted that the amount of information a given message conveys must be calculated in relation to the set of possible messages from which the actual message has been chosen: “To be sure, this word information in communication theory relates not so much to what you do say, as to what you could say. That is, information is a measure of one’s freedom of choice when one selects a message” (Shannon and Weaver 8–9). The greater the set of possible messages, the greater the freedom of choice a sender has in choosing a specific message. And the greater the freedom of choice on the part of the sender of a message, the greater the uncertainty on the part of the receiver as to what specific message the sender has chosen out of a set of possible messages. Within this framework, it seems intuitively clear that a message about which the receiver was highly uncertain prior to its arrival conveys more information than one that the receiver could predict with certainty. Conversely, a message that is completely predictable is redundant and therefore devoid of information.

Since the introduction of noise into a channel of communication increases uncertainty and makes messages less predictable (by distorting the signal emitted by the sender), it also increases information. In fact, noise is defined in Shannon’s framework as the signal that carries the greatest amount of information: noise is the opposite of redundancy. Shannon is, however, quick to point out that one needs to distinguish between useful and useless information. Noise, he points out, exhibits a large amount of useless information:

Uncertainty which arises by virtue of freedom of choice on the part of the sender is desirable uncertainty. Uncertainty which arises because of errors or because of the influence of noise is undesirable uncertainty. It is thus clear where the joker is in saying that the received signal has more information. Some of this information is spurious and undesirable and has been introduced via the noise. To get the useful information in the received signal we must subtract out this spurious portion. (Shannon and Weaver 19)

Noise, it seems, has been successfully exorcised from information theory. As an engineer working for the Bell Telephone Laboratories, Shannon was clearly interested in eliminating noise in order to ensure maximally efficient ways of transmitting (useful) information. Toward the end of his expository introduction, however, his coauthor Weaver opens up a different avenue of thinking about noise.

Throughout his exposition of Shannon’s insights, Weaver insists that “information must not be confused with meaning” and that “the semantic as-
pects of communication are irrelevant to the engineering aspects” (Shannon and Weaver 8). This exclusion of semantic considerations is already apparent in the communication model (figure 1) Shannon proposes at the beginning of his article.5

No box is provided for the interpretive activity of the receiver, and it is clear that the purpose of communication in this schema is to transmit messages in such a way that the message received is identical to the message sent.6 But when Weaver does turn to semantic problems in his concluding section, he proposes changes to Shannon's communication model:

One can imagine, as an addition to the diagram, another box labeled “Semantic Receiver” interposed between the engineering receiver (which changes signals to messages) and the destination. This semantic receiver subjects the message to a second decoding, the demand on this one being that it must match the statistical semantic characteristics of the message to the statistical semantic capacities of the totality of receivers, or of that subset of receivers which constitute the audience one wishes to affect. (Shannon and Weaver 26)

Weaver's heightened awareness of the role of the receiver in communication indicates a shift away from a model that considers the sender's intention as the sole source of meaning and interpretive authority. Moreover, his insis-
at the other end of the communication process represents an engineer's radical break with communication models based on the sender's intention as the final touchstone of communicative success. Weaver's changes to Shannon's model also reintroduce the noise that has been exorcised via Shannon's distinction between useful and useless information (see figure 2).

Of course, Weaver's reflections on meaning and noise propose a model of communication that functions despite the noise rather than because of it. Nevertheless, his suggestion that noise is not only an inevitable component of all forms of communication but may actually be an integral part of the desired message accords noise the status of a potentially beneficial element of communication. Together with Shannon's assertion that noise is the signal with the highest information-content, it forms, either implicitly or explicitly, the basis for all the revalorizations of noise discussed in the remainder of this chapter. This is as true for literary scholars' conceptualizations of literature as the noise of culture as it is for Michel Serres' as well as systems theorists' valorization of disorder and noise, which are all inconceivable without Shannon and Weaver's prior theoretical reflections on information and noise.

The crucial move from Shannon's information theory to systems theory, from noise to order-from-noise, is one from a simple sender-receiver communications model to a model of communication that seeks to describe processes of information exchange taking place at several hierarchically distinct levels within highly complex systems such as computers, the human body, or society. The order-from-noise principle was introduced by Heinz von Foerster in "On Self-Organizing Systems and Their Environment" (1960). Von Foerster begins his now famous talk with the infamous statement that "There are no such things as self-organizing systems!" (31). What von Foerster means is that even self-organizing systems could not exist without environments that make energy and order available (for living systems, environmental energy exists in the form of food; environmental order in the form of information). But order is not the only thing self-organizing systems find in their environments: "self-organizing systems do not only feed upon order, they will also find noise on the menu" (43). In the discussion following his talk and transcribed in the appendix to the published article, von Foerster clarifies this statement somewhat by linking systems' adaptability to noise to their chances of evolution and survival: "I think it is favorable to have some noise in the system. If a system is going to freeze into a particular state, it is inadaptable and this final state may be altogether wrong. It will be incapable of adjusting itself to something that is a more appropriate situation" (49). Despite or perhaps because of the brevity of his remarks, von Foerster's introduction of the order-from-noise principle had an enormous impact on a variety of fields, including literary studies.

Today, there are many different formulations of the order-from-noise principle. The version provided by theoretical biologists Humberto Maturana and Francisco Varela has been highly influential in its own right. Maturana and Varela have developed a theory of autopoietic systems, a term that designates a subgroup of autonomous systems. As the term indicates, autopoietic systems are not only autonomous but also self-creating systems, meaning that the components they consist of are produced in a recursive process by the components themselves. The only known examples of autopoietic systems are living organisms, and Maturana and Varela in fact postulate that "autopoiesis is necessary and sufficient to characterize the organization of living systems" (82).

Autopoietic systems are not determined by environmental input; they attain their "coherence through [their] own operation, and not through the intervention of contingencies from the environment" (Varela 55). As with von Foerster's self-organizing systems, this does not imply that autopoietic systems operate completely independent of processes occurring in their environment. But Maturana and Varela's shift to a description of living systems as autopoietic necessitates a rethinking of system-environment interaction that abandons the more traditional input-output model. As self-organizing and self-creating systems, autopoietic systems interact with systems located in their environment by way of "structural coupling," the process by which "the autopoietic conduct of an organism A becomes a source of deformation for an organism B, and the compensatory behavior of organism B acts, in turn, as a source of deformation of organism A, whose compensatory behavior acts again as a source of deformation of B, and so on recursively until the coupling is interrupted" (Maturana and Varela 120).

In other words, autopoietic systems interact by perturbing one another. They do not perceive changes in their environment as inputs but as sources of noise that trigger processes of reorganization whose specific forms are, however, determined by the system's own logic of operation. Autopoietic systems thrive on such destabilizing perturbations, which make them more adaptive.
to disturbances (rather than being destroyed by them) and prevent them from ossification. Maturana and Varela join von Foerster and other systems theorists in arguing that the adaptability of systems to disorder and noise is essential not only to their survival but also to their evolutionary development. Noise is thus accorded a productive role in system formation.

While Maturana and Varela (117–18) are undecided on whether their findings are applicable to the study of social structures and processes, other theorists have been less hesitant to move in that direction. In his fascinating study *The Noise of Culture: Literary Texts in a World of Information* (1988), William R. Paulson draws heavily on the theory of autopoietic systems, arguing that, in an informational society, literature is but the noise of the cultural system. Literature is "a residue of a no longer dominant mode of cultural organization" (181) that meets none of the requirements of a social order that to an ever-larger extent relies on the production and consumption of easily processable, machine-readable, clear and unambiguous information (in stockbroking, in databases, on the increasingly commercialized World Wide Web). It will not do to try to reestablish the centrality of literary texts by reverting to humanist defenses of literature, by claiming that they are also objects of knowledge, that they contain eternal truths, moral and cultural values. Rather, we should accept literature's marginal status in a world of information and begin from a recognition of that position of marginality:

**Literature is not and will not ever again be at the center of culture, if indeed it ever was. There is no use in either proclaiming or debunking its central position. Literature is the noise of culture, the rich and indeterminate margin into which messages are sent off, never to return the same, in which signals are received not quite like anything emitted.** (Paulson 180)

To designate literature as noise may seem like a strange move for a literary critic concerned about the function and relevance of literature today. But Paulson values literature precisely for its refusal to conform to dominant processes of information exchange. Drawing on the systems-theoretic order-from-noise principle, he conceptualizes literature as the unpredictable noise that is capable of producing new meanings, new concepts, and new information against the backdrop of redundancy continually produced and reproduced by the dominant culture. Literature conforms, in other words, to Lyotard's logic of paralogy and as such allows for "the invention of new moves in the linguistic and symbolic games that constitute knowledge and society" (Paulson 180).

For Paulson, the noise of literature is both internal and external. It is internal because literary language deviates from ordinary language use in its ambiguities, its indeterminacies, its aporias, its multiple complex relations between different levels of signification: "Rather than attempting to reduce noise to a minimum, literary communication assumes its noise as a constitutive factor of itself" (83). The noise of literature is also external in its interaction with other cultural domains. Literature's difference from other forms of communication ensures that it can never be fully assimilated to the communicative networks already in place. It is this recalcitrance that allows literary communication to "participate in the process by which new ideas and new constructions of reality are formed" (165).

Though he relies heavily on models from the natural sciences, Paulson does not suggest that literary texts are organisms, and he does not return to New Critical postulates of the "organic unity" of the text. As he himself points out, his discussion of literary autonomy is both a revalorization and a demystification of romantic doctrines of the autonomous organic text (120–31). For Paulson, autonomy is not an invariant characteristic of literary works; it is a powerful interpretive convention that calls upon readers to assume poetic texts are autonomous objects functioning according to their own rules: "part of [a literary text's] culturally defined role is to persuade its reader to treat it as autonomous and experience it accordingly" (135). In Paulson's terms, the literary text is an "artificially autonomous object" (135). As such, it places special demands on its readers. In particular, it requires them to interpret all aspects of the poetic text as contributing to its overall signification. In poetic texts, nothing is gratuitous. Hence, whenever readers encounter features that are radically alien to their constructions of meaning so far, they are forced to modify their interpretation by reading what seems random or unintelligible on one level of signification (for example, the literal level) as meaningful on another (for example, the figural level): "the reader is forced to move on to a new level of understanding in order to integrate features which at a simplistic level seemed merely interference in a message" (90). The reader must, in other words, continually transform noise into order and information.
The order-from-noise principle is already inherent in the nature of poetic communication; it is inscribed in the *differentness* of literary language. In the final analysis, though, readers' constant transformations of noise into information are less a response to specific properties of the literary text itself than an entirely appropriate (and eminently useful) activity within an institutional framework that still derives many of its assumptions from romantic and formalist reflections on the unity and autonomy of literary texts.

Quite clearly, this implies a perspective on literary texts that the poststructuralist challenge to New Critical doctrines as well as modernist and postmodernist literary practices have rendered problematic. However, it still offers a good description of the conventions that to a large extent govern the reading practices of most professional and nonprofessional readers alike. More important, Paulson's systems-theoretic approach opens up new avenues of thinking about the social function of literature as it invites us to reconsider questions of literariness, literary autonomy, and innovation that have been all but relegated to the past by poststructuralist theory and postmodern assertions of the impossibility of the new. Paulson achieves this without falling back into the organicist fallacy of either the Romantics or their formalist successors.

Moreover, he gives us a viable model for correlating the formal properties of literary texts with their social function, a model that manages to rethink Adorno's paradox that literary texts are both autonomous and social. Paulson opts neither for an approach that would study literature in isolation from other cultural practices nor for one that would level literature's difference from other discourses. His systemic approach avoids both the excessive determinism of some of the approaches that seek to situate literature primarily in its historical, social, or political contexts and the almost complete dissociation of literature from these contexts characteristic of the "organic unity" doctrine. In this, Paulson's deliberations correspond to our intuitive awareness that there is something special about literary texts—which is both one of the reasons why many of us are in literary studies and a justification for the institutionalized status of what we do—but that the literary discourse is not completely different from or independent of other discursive as well as material practices.

Finally, Paulson's conceptualization of literature as an act of communication that is an anticomunication is important not only because it tells us something about literature's ambiguity and unreliability as an instrument of communication but also because it gives us a model to think about literature's continuing relevance in a world of information. Paulson accomplishes this without any kind of nostalgia for a time when literature was still at the center (or apex) of culture. Instead, he fully acknowledges the marginality of literature in the informational society and bases his investigations on that premise. Paulson's model is a model for our times and will continue to be so, for the process of informatization will not slow down. The decoding of the human genome in 2001 is only one indicator of the speed, cultural relevance, and endurance of this process.

Yet Paulson's systems-theoretic account of the social function of literature also has serious limitations, the most fundamental of which concerns the implications of his theses for the study of what I would call "the politics of representation." From a systems perspective, what is outside a given system and thus in its environment becomes interesting only if it can be integrated into the system's organization via the order-from-noise mechanism. Anything that disturbs a system from the outside is recognizable for the system only if it is absorbed as order or information. Concerned as it is with the preservation of existing systems and the integration of noise as order, systems theory has a conservative bias and remains unable to account for the radically unintegrable alterity and negativity that a thinker like Adorno postulates for art.

Even though Paulson explicitly acknowledges his debt to Michel Serres in his preface to *The Noise of Culture*, Serres' own theorizing on noise presents a necessary corrective to the inherent (one is tempted to write "systemic") conservatism of Paulson's approach. Serres joins systems theorists in arguing that "noise gives rise to a new system, an order that is more complex than the simple chain" (*The Parasite*, 14). For Serres as for Paulson, the continuation of any system's functioning relies on both the establishment of order and the disruption of that order. Both critics would agree, moreover, with German sociologist and systems theorist Niklas Luhmann that "the meaning process lives off disturbances, is nourished by disorder, lets itself be carried by noise, and needs an 'excluded third' for all technically precise, schematized operations" (*Social Systems* 83). But Serres much more powerfully and insistently moves this third—excluded by Shannon's distinction between useful and useless information and contained by systems theory's order-from-noise principle—to the center of attention.

Serres' *The Parasite and Genesis*, first published in French in 1980 and 1982
respectively, present sustained attempts to restore to philosophy and the history of science that which has been lost, overlooked, and excluded by dualist systems of thought. His principal ally in this endeavor is the parasite, a wanderer between the worlds of biology, anthropology, and information theory. Unloved, feared, and chased out, the parasite—a word that denotes noise in technical French—becomes for Serres a figure for that which binary thought seeks to suppress and exclude.

For Serres, multiplicity, disorder, and noise are not mere precursors to unity, order, and information; they are originary and constitute the ground of our world and our being:

a system has interesting relations according to what is deemed to be its faults or depreciations. What then about its noises and parasites. Can we rewrite a system, in the way Leibniz understood the term, not in the key of preestablished harmony but in what he called seventh chords? Not with the equilibrium he loved to mention but with the waves and shocks on the line in mind? [...] The book of differences, noise, and disorder would only be the book of evil for someone who would prohibit the Author of the universe, through calculation, from a world that is incorruptibly dependable. This, however, is not the case. The difference is part of the thing itself, and perhaps it even produces the thing. Maybe the radical origin of things is really the difference, even though classical rationalism damned it to hell. In the beginning was the noise. (The Parasite 13)

Two years after The Parasite, Serres published his book of noise—a book he had originally intended to entitle Noise but was dissuaded from doing so by its first readers (Assad 279). His Genesis begins with “A Short Tall Tale,” a brief narrative in which a shipwrecked narrator constructs a raft out of countless bottles, each with a little message inside, colliding noisily on the Sargasso Sea. The sea, the noise, and the multiple are not only at the beginning of things, they are also at the beginning of Serres’ text: “Before language, before even the word, the noise” (54). Genesis presents Serres’ most sustained attempt to listen to the noise.

In a series of meditations that blend the languages of science, philosophy, and poetry, Serres develops a theme that was already present in The Parasite. In Genesis, we encounter a thinker who has become increasingly concerned about the violence inherent in the pursuit of unity and order:

I am attempting to extricate myself from the hell of dualism. Utterly pure rationality is a myth, it is a sacred place, cleansed, purified through lustral procedures that expel the confused, the profane, the unclean, the victim, accordingly, excluding, in any event, for the greater glory and power of its new priests. [...] To think in terms of pairs is to make ready some dangerous weapon, arrows, darts, dovetails, whereby to hold space and kill. To think by negation is not to think. Dualism tries to start a ruckus [chercher noise], make noise, it relates to death alone. It puts to death and it maintains death. Death to the parasite, someone says, without seeing that a parasite is put to death only by a stronger parasite. Keep the noise down, says he, without perceiving that he has monopolized all the noise, without understanding that he thus becomes the head of all the fury. (Genesis 131)

Serres shares Henry Adams’s insight that “Chaos was the law of nature, Order was the dream of man” (The Education 427), but he is no longer prepared to pay the price to realize the dream of unity and order. In his decision to listen to the noise and explore the fuzzy regions of multiplicity and chaos, Serres does not celebrate irrationality, and his ire is not directed against rational inquiry as such (Assad 291) but against the arrogance of a rationalist discourse whose desire for unity turns violent in its exclusion of everything that does not fit its rigid order. The logic of the parasite, he contends, pervades all systems, and his/her/its exclusion always only heralds the rise to dominance of another parasite. Noise always remains part of the equation.

With Serres, we get a model of thinking about noise that builds on information and systems theory but urges us to consider the costs involved in the transformation of noise into information and order. Any such transformation, Serres contends, threatens to reduce the other to the same; it threatens to deny the otherness of the other and thereby obliterate it. Working within a broadly poststructuralist framework, a number of cultural theorists including the German media archaeologist Friedrich Kittler and the French economist and music theorist Jacques Attali have followed Serres’ lead, discovering in noise a source not only of new order but also of the disruption and the subversion of systems based on binary logic. Taken together and read alongside Adorno’s reflections on the social function of literature, these critics expose a crucial blind spot in Paulson’s argumentation that will be explored further in subsequent chapters.
The second, and in my view almost equally serious limitation to Paulson's project concerns his stance on the question of literary representation. In conceiving of the interaction between different systems exclusively in terms of mutual perturbation or structural coupling, Paulson fails to account for the representational nature of literary texts. Critics realized long before the advent of modernism that there is more to literature than the faithful reproduction of "reality." It has become a commonplace that literary texts are to a large degree structured according to internal laws that are independent of and sometimes opposed to the structures (and strictures) of daily existence. Derrida's famous contention that "there is nothing outside of the text" (Of Grammatology 58) has for many critics even reversed the traditional relationship between texts and "reality": life as we know it can now be seen as structured like a text rather than vice versa. Nevertheless, it cannot be denied that literary texts draw some of their material from a space external to themselves. Moreover, the relationship between the fictional world of the literary text and the external world of objects can at least partly be described in terms of representation—a term that invites us to consider both the objects and the forms of literary discourse. In view of this, Paulson's stern rejection of a representational approach seems premature: "To seek and find knowledge in literature—where the autonomy of language is made manifest—is to accept that the act of knowing resides in language and community, that it is part of an adaptive and self-coherent system and not a representation of reality" (Paulson 172). Maturana and Varela's shift from a representational approach to living organisms to one that focuses on their capacity for autopoiesis does not translate as easily into literary studies as Paulson would have us believe. Literary texts remain in a dynamic interaction with empirical reality that cannot be reduced to processes of mutual perturbation and self-organization. The representational perspective in literary studies is only sterile and un-inventive if we conceive of representation as imitation in the most narrow sense, a stance few if any literary critics would adopt.24

Related to Paulson's rejection of a representational approach is what constitutes the most radical of his book's many arguments. In order to ensure the continuing relevance of literary studies, he argues, critics today should move away "from the dead center of their discipline, from the project of interpreting and describing texts as fully as possible" (182). If literature is no longer seen as being about something, we may turn our backs on interpretation and interrogate instead the processes by which knowledge is produced in the interaction and mutual perturbation of a variety of discourses, including the literary discourse but not necessarily centered around it. In Paulson's view, a systemic approach to literature allows us to rethink its social function in a time of retrenchment and is emphatically not "a gadget for producing readings and interpretations" (181). Literary studies, Paulson agrees with Kittler, must become truly interdisciplinary and can no longer be practiced in isolation from the discourses of science and technology. Paulson concedes that such a project might very well mean the end of literary studies as we know it, and he ends his book with the hope that "Out of a new dialogue between literature and science, out of interferences between disciplinary discourses, we may yet be able to arrange a graceful exit from the era of Literaturwisenschaft" (185).

While I agree with William Paulson that the task of literary scholars cannot be to study poetic texts in isolation and with the sole purpose of understanding them as completely as possible, I share neither his rejection of representational approaches nor his abandonment of the interpretive project. In fact, the remainder of this book is crucially concerned with establishing passages between Paulson's and other thinkers' conceptualizations of literature as "the noise of culture" and analyses of literary representations of noise. Despite the invention of the phonograph in the 1870s, which effectively ended the monopoly of writing on the storage of sound (Kittler, Aufschreibesysteme), literary texts from the late nineteenth to the late twentieth century continue to be sites of both the cultural production and the representation of noise, and it is this convergence that a history of literary acoustics addresses.

Let us turn to William Burroughs's Naked Lunch for an example. In one of the many passages that seem to lend support to Burroughs's claim that he has "no precise memory of writing the notes which have now been published under the title Naked Lunch" (7) but ultimately undermine it in their self-reflexive quality, Burroughs discusses both the form and content of his work:

The Word is divided into units which be all in one piece and should be so taken, but the pieces can be had in any order being tied up back and forth, in and out fore and aft like an innarexing sex arrangement. This book spills off the page in all directions, kaleidoscope of vistas, medley of tunes and street noises, farts and riot yipes and the slamming steel shutters of commerce, screams of pain and pathos and screams...
plain pathetic, copulating cats and outraged squawk of the displaced bull head, prophetic mutterings of brujo in nutmeg trances, snapping necks and screaming mandrakes, sigh of orgasm, heroin silent at dawn in the thirsty cells, Radio Cairo screaming like a berserk tobacco auction, and flutes of Ramadan fanning the sick junky like a gentle hiss worker in the grey subway dawn feeling with delicate fingers for the green folding crackle... (180)

This passage functions first of all as a commentary on the formal arrangement of *Naked Lunch*. In Burroughs's narrative (if that is the word), the "Word" is stripped of the metaphysical unity it might have once possessed; it is fractured beyond repair—and beyond Burroughs's mockery of religious oratory. This book truly spills off the page in all directions; its cut-up technique, associative ordering of thoughts, and fragmentary syntax provide a source of noise that reflects and complements the novel's events and actions. The novel's formal aspects forestall the reader's easy assimilation of experiences that are out of the ordinary and shocking to most people (sadomasochism, raw violence, drug abuse). Burroughs's formal innovations therefore not only mimaetically reproduce the chaos and breathlessness of his characters' lives; his way of dissecting language and reducing "sense to nonsense" and "government propaganda to noise" (Kittler, *Grammophon* 167; my translation) is itself a form of resistance by negativity in Adorno's sense.25

At the same time, the passage captures the auditory manifestations of some of the novel's main themes. It makes the reader participate in the acoustic turmoil of the city, the cries of pleasure and screams of violence, the blare of the radio and din of the crowd, the full range of noises that define the acoustic world of Burroughs's subculture of junkies and sexual misfits. Moreover, the reference to "Radio Cairo screaming like a berserk tobacco auction" constitutes one of the book's many allusions to radio transmission and thus to a field in which the elimination of noise, of "moment[s] of static, dangling wires, broken connections" (171) has been of primary importance to engineers since the first radio broadcast in 1906. Indeed, in the paragraph following the passage quoted above, Burroughs attributes all of its noises to radio broadcasting and assigns them revelatory force: "This is Revelation and Prophecy of what I can pick up without FM on my 1920 crystal set with antennae of jism" (180). As part of the fictional world Burroughs creates, these noises have a decidedly literal quality. At the same time, their representation is inextricably intertwined with Burroughs's reflections on the recalcitrant, noisy form of his book. The two forms of noise mutually reinforce each other, building up to the overwhelming brouhaha the reader is sucked into. *Naked Lunch*, then, assumes noise as a part of itself not only in its formal inventiveness and breaches of decorum but also in its representations of physical noise.

Burroughs's decision to associate the subculture he depicts with a panorama of noises points to a related convergence between reflections on the social function of literature and literary representations of noise. *Naked Lunch* is not only a noisy text because it reproduces on the level of textual organization the noises it registers emerging from the margins of society. Literary texts need not be formally experimental to kick up a fuss, to make noise. Burroughs's text provides a platform for the voices of those few whose street talk and junkie slang is merely noise in the ears of the many. In giving a voice to forms of cultural expression that fall outside the perimeter of official culture, Burroughs embarks on a project many writers of fiction have come to embrace as their own.26 In choosing to dwell among the eccentrics, the outcasts, and the losers of history, Burroughs gives expression to voices and sounds that official culture has a tendency to relegate to the dangerous, unstable realms of nonsense and noise. The OED entry for "noise" provides an interesting example in this respect. It is hardly a coincidence that five out of the sixteen examples given for the first sense of "noise" ("Loud outcry, clamor, or shouting; din or disturbance made by one or more persons") record the noises of others: heathens, Bretons, thieves and murderers, women:

1297 R. GLOUC. (Rolls) 8167 Of trompes & of tabors & sarazins made here So gret noyse pat cristinemen al destourbed were.

1330 R. BRUNNE Chron. Wace (Rolls) 11531 At pat word was noyse & cry Of Bretons pat stoden ney.

1481 CAXTON Godfrey v. 23 Of the noyse that sounded emonge the hethen men discordyng in theyr lawe.

1633 G. HERBERT Temple, Redemption 12. At length I heard a ragged noise and mirth Of theeves and murderers.

1702 ROWE Tamerl. IV. i, Thou hast thy sexes Virtues, Their Affectation, Pride, Ill Nature, Noise.
And when the City of New York systematically began to address its noise problem in 1907, it first banned the use of megaphones by the Coney Island barkers (E. Thompson 123–24). In America, the policing of soundscapes reaches back to colonial times when African-Americans, Native Americans, and the lower orders in general were identified as the most troublesome noisemakers (M. Smith 9–12). The disparagement of the sounds of others as noise has a long tradition that involves processes of exclusion—which can be processes of silencing in the most literal sense—in which immigrants’ accents, female modes of communication, or jazz music are considered undesirable interferences with the sociocultural and communicative networks already in place.27 In some instances, such acoustic boundary-drawings along the lines of race, class, and gender are accompanied by genuine concerns about the debilitating effects of excessive levels of noise. This is the case with Victorian middle-class professionals’ campaigns against the street musicians of mid-nineteenth century London. Their anti-street music movement was informed as much by fears that the sounds produced by organ grinders or brass bands would imperil the mental and physical well-being of their own class as by an often openly expressed xenophobic disdain for the lower-class immigrants who took their music to the streets (Picker, Victorian 41–81). Literature participates in such processes, both in affirming and contesting them. As will be argued in greater detail in the following three chapters, naturalist portrayals of immigrant accents, modernist renditions of working-class dissent, or postmodernist representations of alternative systems of communication all constitute interventions in those debates.

Many of the writers discussed in this book challenge and sometimes reverse the hierarchy between voice and noise, sense and nonsense by valorizing the sound-making of others as a productive disturbance of established modes of communication and sense-making. These authors, chief among them the modernists and early postmodernists, are faced with the task of preserving in (and through) their writing something of the otherness of alternative forms of sounding.28 This is a task that is complicated by the fundamental question of how any acoustic phenomenon can be translated into the written format of a literary text. As Bruce R. Smith points out, any translation of the oral into the written threatens to codify and thereby tame the unruly realm of orality. Smith’s examples are moralistic treatises Puritans wrote about the dances and gests of early modern England: “Something heard, felt, en/joyed

becomes, in their hands, something seen, known, mastered” (166); Kittler documents European musicologists’ use of the phonograph to record the unruliness of other peoples’ “exotic music” so as to be able to reduce it to “exact notation” (Literature 35). The question arises just how the alterity of the sounds and noises of others can be conserved in rather than contained by literary representation.

For many of the authors discussed in the following pages, any answer to this question must be based on the premise that the literary representation of others demands special forms of representation. Thus, we encounter slippages of language into pure sound in Jean Toomer’s and Zora Neale Hurston’s tributes to the African-American oral tradition, highly fragmented prose in John Dos Passos’s portrayal of working-class voices of dissent, and a narrative structure that replicates the noisy alterity of the alternative communications system at the heart of Thomas Pynchon’s The Crying of Lot 49. These authors challenge and disturb dominant modes of communicating about others by means of representational innovations that turn the literary text itself into a source of noise within the networks of culture.

Yet artists’ attempts to preserve something of the otherness of other sounds and voices do not guarantee a progressive politics of representation. Futurist and Dadaist spectacles of noise in the first decades of the twentieth century were informed as much by primitivism and militarism as by a desire to disrupt classical harmonies (Kahn 45–67). In many a naturalist text, the differentness of immigrant, working-class, or politically dissenting forms of sound-making is highlighted only to be exposed to ridicule, to be denigrated as noise and excluded from the realm of acceptable sense-making. The interrelations between the literary representation of noise and literature’s potential to function as the noise of culture are complex and contingent on the historical context of literary production, distribution, and reception. Our analyses and judgments of the politics of different writers’ acoustic imagination will therefore need to proceed on the basis of careful analyses of the different representational strategies of specific works of literature as well as their place within the discourse networks of their times.

As the examples discussed above already show, the relevance of conceptualizations of literature as the noise of culture is not restricted to a specific literary period. But the obvious applicability of an aesthetics of noise to formally difficult texts does suggest that such reflections have a decidedly
modernist bent. From the dual perspective proposed by a history of literary acoustics, this comes as no surprise. Modernist formal experimentation and innovation can be seen as responses to problems of representing the noise of modernity not only in its metaphorical but also in its literal, acoustic sense. Artists confronted with a rapid urban growth that engendered massive demographic changes, the carnage of World War I, and the acceleration of industrial and scientific progress were exposed to a chaos of sense perceptions that demanded new modes of artistic representation. For a growing number of writers, the literary forms of realism and naturalism no longer served to render the cultural atmosphere of a world radically unhinged. Literature, already severely challenged in its claims to verisimilitude by photography, film, and the phonograph, entered a crisis of representation, and modernist experimental forms are a response to that crisis.

While this does not entail that modernist montage, fragmentation, or dissonance simply reproduce the visual and acoustic chaos of life at the beginning of the twentieth century, it registers a historical contingency of modernist form beyond the needs of the system of art to periodically renew itself. The futurist musician Luigi Russolo's groundbreaking compositions best exemplify the new art forms inspired by the soundscape of modernity. Russolo theorized that urban noise was the most authentic musical expression of the twentieth century. Consequently, he built a number of new instruments, so-called noise-intoners (intonarumori), that allowed him to bring the noise of the city into the concert hall. As Emily Thompson documents, Russolo's dozen or so public performances in Italy and London in 1913 and 1914 met with anything from enthusiastic endorsement to ridicule and outrage, and his first public performance in Milan erupted into a fistfight between fellow futurists and unappreciative members of the audience. What even some of Russolo's most fervent admirers failed to understand, though, was his emphasis on "the abstract over the imitative quality of his music" (E. Thompson 137). Most revolutionary about Russolo's compositions was not that they reproduced the noise of the city but that they elevated noise into a principle of composition. Writing against the same acoustic background, modernist authors pursued similar aims, though with the different (and, strictly speaking, silent) tools of their own trade. Both modernist writing and music, then, emerged from a cultural situation whose metaphorical and literal noise helped shape artistic forms. A recognition of the modernist lineage of the "literature as noise" paradigm—on which I will elaborate in chapter 1

—therefore allows us to link its origins to a period characterized by a proliferation of noises that was instrumental in making literature jeopardize its communicative function and enabled it to become the noise of culture.

However, even as we situate the emergence of a modernist aesthetics of noise within the historical context of technological modernity, we are forced to recognize that the process of modernization was already well under way when the naturalists published their first books. The end of the Civil War in 1865 was followed by an upsurge in industrial production, particularly in the metal industries (cast iron, steel); by the introduction of more powerful steam engines; and by the concentration of a rapidly growing percentage of the U.S. population in the urban centers of industrial production. Naturalist writers felt compelled to give a sustained fictional account of the new acoustic spaces produced by urbanization and industrialization, and their texts raise interesting questions with regard to the literary representation and representability of noise. As with modernist texts, we may sound out the politics of naturalists' mappings of urban and industrial acoustic spaces and ask ourselves to what extent their texts truly give a platform to or, conversely, seek to contain the noises of modernity and its social conflicts. From the perspective of a history of literary acoustics, answers to this question touch on the complex relationship between the representational forms of literary texts and their historically contingent social functions. This question invites us, in other words, to think about the politics of representation.

Postmodern writing raises a similar range of questions. Yet while many of the sounds introduced by the industrial revolutions continue to sound in the acoustic spaces of postmodernity, the information revolution has inserted new kinds of noise into the postmodern soundscape. The inhabitants of informational cities are exposed to a continuous stream of broad-band noise emitted by electronic apparatuses of all kinds. This "white noise" feeds into an acoustic world in which noise has been all but exorcised from the channels of real-time communication, but in which the very machines that enable this interference-free exchange of information contribute significantly to an extremely dense acoustic environment in which noise is a near-ubiquitous presence. Postmodern writers of fiction register this new quality of the soundscape in their texts and experiment with old representational forms and invent new ones to render the omnipresent and mostly subliminal quality of the noises of postmodernity.

This brief overview of some of the arguments that will be developed in
greater detail in the following pages already attests to the need to account for the historical specificity of writers' representations of and reflections on noise. The following three chapters, which form the core of this book, present an attempt to historicize the question of the social function of literature in a series of analyses that address the convergences between the noises literature represents and the noises it produces in the three successive literary periods of naturalism, modernism, and postmodernism. These chapters are crucially concerned with the politics of literary representation and in their double focus on the literary production and representation of noise seek to contribute to the study of American literature from the late nineteenth to the late twentieth century a history of literary acoustics that is embedded in the ongoing project of writing the history of modernity and postmodernity.

The Soundscapes of Naturalism

We must speak by the cord,
Or equivocation will undo us.
Shakespeare, Hamlet

Around the turn of the previous century, the scene of writing changed radically. With the invention of the phonograph (in 1877) and film (in 1895), writing lost its monopoly on data storage. As Kittler points out, the new media technologies "store acoustic and optical data with superhuman precision" (Aufschreibesysteme 310; my translation) and relegate writing to the status of one medium among others. For Kittler, this transition marks the end of literature in the Romantic sense: "As long as the book had to take care of all serial data flows, [...] words trembled with sensuality and memory. All the passion of reading consisted of hallucinating a meaning between letters and lines: the visible or audible world of romantic poetry. [...] Electricity itself has brought this to an end. If memories and dreams, the dead and the specters have become technically reproducible, then the hallucinatory power of reading and writing has become obsolete" (Literature 40-41). Under the new media regime, Kittler reasons, only two options are left for writers of literature: they could either—as the modernists would—focus their attention on the medium of writing itself and "begin a cult by and for letter fetishists" or become producers of song lyrics and thus turn from "the imaginary voices" of literature "to the real" voices of records (Kittler, Grammophon 135-36; my translation).

Kittler's far-reaching claims need to be qualified, not least because, from a literary-historical perspective, they elide realist and naturalist attempts to reproduce the sights and sounds of the real. At the same time, though, Kittler's media archaeology invites us to ask a fundamental question concerning all literary representations of noise: How can writing represent noise at all if it must, by force, reduce the unruly noise that lies outside of language to the rules and order of the alphabet? That question is particularly relevant to the
Notes

Introduction

1. The story of the flood as narrated in *The Epic of Gilgamesh* is based on the older version of the same story in *Atrahasis*, where the flood is preceded by a plague and two droughts, all of which are the gods' responses to overpopulation and its attendant noise (Lambert and Millard 1; Forsyth 151).

2. I follow Manuel Castells (34-40) and the majority of historians in distinguishing between the first industrial revolution, which began in the second half of the eighteenth century and had the steam engine as its prime mover, and the second industrial revolution, which took off a century later and was mainly driven by the introduction of electricity.

3. My account of Shannon draws on Katherine N. Hayles's excellent discussion of Barthes and Shannon (Hayles, "Information").

4. As Weaver sums up: "Information is, we must steadily remember, a measure of one's freedom of choice in selecting a message. The greater this freedom of choice, and hence the greater the information, the greater is the uncertainty that the message actually selected is some particular one. Thus greater freedom of choice, greater uncertainty, greater information go hand in hand" (Shannon and Weaver 18-19).

5. In human oral communication, the information source would correspond to the brain of the speaker; the transmitter to the physical speech apparatus (vocal chords, oral cavity, tongue, and so on), which transforms the message into a coded signal that is sent over the communication channel; the receiver to the ear of the hearer; the destination to the brain of the hearer. See Shannon and Weaver (7-8) for a fuller explanation of the diagram. It will be noticed that what has been referred to as sender and receiver so far is in this model divided into two distinct elements of the communication process, namely information source and transmitter at the one end of the process and receiver and destination at the other.

6. This impression is confirmed when Weaver characterizes the "semantic problems" of communication as "concerned with the identity, or satisfactorily close approximation, in the interpretation of meaning by the receiver, as compared with the intended meaning of the sender" (Shannon and Weaver 4).

7. There are, of course, problems with Shannon and Weaver's model of communication. Even if we put aside for a moment Jacques Derrida's contention that "as writing [écriture], communication, if we retain that word, is not the means of transference of meaning, the exchange of intentions and meanings [vouloir-dire], discourse and the 'communication of consciousnsees'" ("Signature" 20) and retain a more conventional model of communication such as Weaver's enhanced model (fig. 2), we are still faced with at least three problematic aspects. First, despite a number of modifications to a
simple sender-message-receiver model, Shannon and Weaver's model of communication remains a one-way model that can only account for communication between two entities. A broader understanding of communication as it informs, for instance, the notion of discourse is well beyond its scope. Second, Weaver's clear-cut differentiation between "semantic noise" and "engineering noise" cannot be upheld because it presupposes a strict separation of the level of the signifier (affected by the engineering noise) and the signified (affected by the semantic noise). The poststructuralist assertion of the primacy of the signifier and the endless deferral of the signified has rendered such a distinction problematic.

Third, because Shannon and Weaver's concept of noise is based on the assumption that noise corresponds to all those "things [that] are added to the signal which were not intended by the information source" (Shannon and Weaver), their model does not account for noise added on purpose. In the analysis of literature, especially certain types of modernist and postmodern literature, it will be desirable to broaden Shannon and Weaver's concept of noise to include textual distortions and fragmentations that we, as readers, tend to see as intended by a writer who uses them consciously and for artistic effect (which does not amount to suggesting that the meaning of a literary text can be equated with the author's intention). The other thinkers on information and noise discussed in this chapter address some of these limitations.

8. Henri Atlan's "Du bruit comme principe d'autonomisation" (1972) and Prigogine and Stengers's Order Out of Chaos (1979) are two texts that build upon von Foerster's order-from-noise principle—the former in the study of the evolution of living organisms and the latter in its use of an "order through fluctuations" model—and have themselves become influential in the fields of theoretical biology and theoretical physics, respectively.

9. Maturana and Varela define an "autopoietic machine" as follows: "An autopoietic machine is a device organized (defined as a unity) as a network of processes of production (transformation and destruction) of components that produces the components which: (i) through their interactions and transformations continually regenerate and realize the network of processes (relations) that produced them; and (ii) constitute it (the machine) as a concrete unity in the space in which they (the components) exist by specifying the topological domain of its realization as such a network" (78-79).

10. The most prominent example is the German sociologist Niklas Luhmann, who in his groundbreaking Social Systems (1984) defines social systems (for example, the religious system, the economic system, the legal system, the system of art) as autopoietic systems that are ordered according to meaning and continually produce communications out of communications in a recursively closed process. Like Maturana and Varela, he maintains that different autopoietic systems have different ways of interpreting the world and therefore cannot absorb each other's complexity in any straightforward fashion. For Luhmann, too, their complexities act as sources of perturbation or noise: "the complexity each system makes available is an incomprehensible complexity—that is, disorder—for the receiving system. [...] All reproduction and structure formation thus presupposes a combination of order and disorder: a system's own structures and an incomprehensible foreign complexity, a regulated and a free complexity. The con-

11. Lyotard defines paralogy as "a move (the importance of which is often not recognized until later) played in the pragmatics of knowledge" (61). With regard to the progress of science, he describes the functioning of paralogy as follows: "Science does not expand by means of the positivism of efficiency. The opposite is true: working on a proof means searching for and 'inventing' counterexamples, in other words, the unintelligible; supporting an argument means looking for a 'paradox' and legitimating it with new rules in the games of reasoning" (74). Lyotard receives support from physics Nobel laureate Ilya Prigogine and philosopher Isabelle Stengers in their joint book, Order Out of Chaos: "It is obvious that the management of human society as well as the action of selective pressures tends to optimize some aspects of behaviors or modes of connection, but to consider optimization as the key to understanding how populations and individuals survive is to risk confusing causes with effects. Optimization models thus ignore both the possibility of radical transformations—that is, transformations that change the definition of a problem and thus the kind of solution sought—and the inertial constraints that may eventually force a system into a disastrous way of functioning" (207).

12. Paulson is aware that, from a systems-theoretic perspective at least, systems of all kinds act as sources of noise for other systems (Maturana and Varela; Reese-Schäfer). But he insists that literature occupies a special position. Due to its strangeness, its poeticity, its internal noise, literature is a priori more disruptive, more noisy than other systems.

13. In fact, Maturana and Varela's differentiation between systems that are autopoietic (and therefore living organisms) and systems that are "merely" autonomous allows for ways of thinking about literary autonomy that do not equate literary texts with living organisms and nevertheless show that literature shares some of their structural properties.

14. Paulson puts it thus: "The principle of constructing a pattern out of what interrupts patterns is inherent in artistic communication, because this kind of communication arises by deviating from the regularities of nonartistic communication, and this deviation must be the source of whatever advantage or specificity artistic communication possesses. In the language of the Group of Art (and of Jean Cohen), the poetic func-
tion implies departures from norms and then the production of new kinds of relations and meaning from these departures" (87).

15. Paulson would concur with German media theorist Friedrich Kittler's insistence that literature must be studied as part of a larger discourse network. He would, however—as I do, too—take issue with Kittler's assertion that literature is first and foremost a storage medium of the same order as the phonograph or film (Kittler, *Grammophon: Aufzeichnungs- systeme*). Kittler's contributions to the study of literature are discussed further below.

16. Not surprisingly, systems theory has often been charged with political conservatism (Lyotard: Kneer and Nassehi 186–92).

17. For Adorno, artistic deviation must precisely not be integrable if it is to retain any oppositional force: "In art what once took care of itself became a specific undertaking, and as a result integration increasingly binds the centrifugal counterforces. [...] The more successful the integration, the more it becomes an empty spinning of gears; teleologically it tends toward infantile tinkering" (*Aesthetic 29*). In Adorno's grim vision, the transformation of noise into order and information becomes an aggressive gesture of co-optation. What Paulson regards as a prerequisite for any successful process of innovation is for Adorno the neutralization of art's critical impulses, effected primarily via the culture industry, whose "unmistakable symptom is the passion to touch everything, to allow no work to be what it is, to dress it up, to narrow its distance from the viewer" (*Aesthetic 17*). See chapter 2 for a more detailed discussion of Adorno's aesthetic theory.

18. Paulson writes, "I owe a special intellectual debt to Michel Serres, whose writings were instrumental in convincing me that this was a book I should attempt to write" (x).

19. As Serres puts it in his characteristically figurative style: "Noise destroys and horifies. But order and flat repetition are in the vicinity of death. Noise nourishes a new order. Organization, life, and intelligent thought live between order and noise, between disorder and perfect harmony. If there were only order, if we only heard perfect harmonies, our stupidity would soon fall down toward a dreamless sleep; if we were always surrounded by the shivaree, we would lose our breath and our consistency, we would spread out among all the dancing atoms of the universe. We are; we live; we think on the fringe, in the probable fed by the unexpected, in the legal nourished with information. There are two ways to die, two ways to sleep, two ways to be stupid—a head-first dive into chaos or stabilized installation in order and chitin." (*The Parasite 127*)

20. Ross Chambers's review of Serres' *Hermes: Literature, Science, Philosophy* captures the principal concerns as well as the feel of Serres' writing best: "Serres' recognition that the game is not the rules does not boil down, then, as it does (say) in Bourdieu, to rehabilitating practice in the face of theory. It asks a deeper question concerning the practice of theory itself, and enquires which theoretical practice, with its necessary entailments, one is to opt for, as between one which reifies the rules and promotes order and one which, aware of all that is sacrificed and destroyed in the production of order, refuses so momentous a sacrifice. The latter option, within our tradition, is by far the more difficult of the two: it involves the production of order but without a concomitant sacrifice of disorder, or if one will, the maintenance within order of the disorder which is its very condition of existence. But this is the option for which Michel Serres stands, the game he chooses to play and invites us to join, that of the inclusion of the excluded" (189–90).

21. Serres puts it thus: "I must put three things together: habits or customs, animals, noises. At first glance, they are unrelated. Yet I am not putting them together haphazardly. I am forced to do so by my tongue: Latin, Greek, Roman. In this somewhat fuzzy spot, a parasite is an abusive guest, an unavoidable animal, a break in the message" (*The Parasite 8*). As Lawrence R. Scheh explains in his "Translator's Introduction" to *The Parasite*, the title of Serres' book has three different meanings:

The parasite is a microbe, an insidious infection that takes without giving and weakens without killing. The parasite is also a guest, who exchanges his talk, praise, and flattery for food. The parasite is noise as well; the static and interference in a channel. These seemingly dissimilar activities are, according to Michel Serres, not merely coincidentally expressed by the same word (in French). Rather, they are intrinsically related and, in fact, they have the same basic function in a system. Whether it produces a fever or just hot air, the parasite is a thermal exciter. And as such, it is both the atom of a relation and the production of a change in this relation. (Serres, *The Parasite x*)

22. Gerald L. Bruns identifies this threat with admirable clarity: "As Emmanuel Levinas says in *Totality and Infinity* (1961), knowledge is not a relation to the other but the destruction of it; it is 'the reduction of the other to the same.' It is a refusal of otherness. The other, however, is for its part just what refuses to be contained within the conceptual structures that we build up in order to make sense of things. This is what the otherness of the other means" (1058). For a concise discussion of the problematic of the same and the other in contemporary philosophy and ethics, see Rasch.

23. For early examples, take Horace's literary pragmatics of instruction and delight (*prodece et delectare*) or, later, the Romantic view of poetry as an expression of the artist's feelings.

24. Moreover, the input-output perspective, with which Paulson constantly associates representational approaches, in no way describes the practices of those who are interested in the mimetic aspects of literary texts, and their implicit association with what Lyotard calls the logic of performativity is tendentious to say the least.

25. Insisting on the subversive potential of self-reflective fiction, Raymond Federman attributes a similar weight to the formal aspects of *Naked Lunch* and other early self-reflective novels: "the new fiction (created on the margin of the literary establishment) sought to show the form rather than the content of American reality. It tried to render concrete and even visual in its language, in its syntax, in its typography and topology; the disorder, the chaos, the violence, the incongruity, but also the energy and vitality, of American reality" (1146).
26. Witness, for instance, Günter Grass's characterization of the activity of authors in his acceptance speech for the 1999 Nobel Prize for Literature:

But worst of all they refuse to make common cause with the victors of history; they take pleasure milking about the fringes of the historical process with the losers, who have plenty to say but no platform to say it on. By giving them a voice, they call the victory into question, by associating with them, they join ranks with them. (par. 21)

As different as they are in their habitus, politics, and literary practice, both Grass and Burroughs have learned from Walter Benjamin's characterization of official historiography as "the triumphal procession in which the present rulers step over those who are lying prostrate" and decided to dissociate themselves from that project, accepting as the writer's task "to brush history against the grain" (Benjamin 565–57).

27. We may note here that the popular exclusion of certain artworks from the realm of art—I am thinking of hostile reactions to John Cage's compositions or Jackson Pollock's paintings—has proceeded along similar lines.

28. This task touches on the difficult question of the translatability of cultures. As Wolfgang Iser points out, this is a task that becomes increasingly significant in a world of global information exchange: "In a rapidly shrinking world, many different cultures have come into close contact with one another, calling for a mutual understanding not only in terms of the culture to which one belongs, but also in terms of the specificity pertaining to the culture encountered" ("On Translatability" 5).

29. Overcoming the imitative or referential function of sound in music continued to be a main prerogative of experimental twentieth-century music from the musique concrète of Pierre Schaeffer to the sonic violence of Japanese noise artist Merzbow. See also Kahn (101–22). Edgar Varèse put it succinctly when he said, "I need an entirely new medium of expression: a sound-producing machine (not a sound-reproducing one)" (qtd. in Kahn 387 n. 35).

30. Moreover, with Jacques Attali, who attributes prophetic force to music, we may at least "toy with the idea" that "it is no coincidence that Russolo wrote his Arte Dei Rumori ("The Art of Noise") in 1913; that noise entered music and industry painting just before the outbursts and wars of the twentieth century, before the rise of social noise" (9).

Chapter 1. The Soundscapes of Naturalism


2. Schafer explains the origin and characteristics of flat-line sounds thus: "The Industrial Revolution introduced another effect into the soundscape: the flat line. When sounds are projected visually on a graphic level recorder, they may be analyzed in terms of what is called their envelope or signature. The principal characteristics of a sound envelope are the attack, the body, the transients (or internal changes) and the decay. When the body of the sound is prolonged and unchanging, it is reproduced by the graphic level recorder as an extended horizontal line. [..] The flat continuous line in sound is an artificial construction. Like the flat line in space, it is rarely found in nature. (The continuous stridulation of certain insects like cicadas is an exception.) Just as the Industrial Revolution's sewing machine gave us back the long line in clothes, so the factories, which operated night and day nonstop, created the long line in sound." (Tuning 78)

3. See, for instance, Trachtenberg (142), who suggests that Crane's city sketches share important stylistic features with impressionist paintings. Margot Norris's recollection of being confronted in her reading of The Red Badge of Courage with a series of disconnected impressionist images rather than a continuous narrative makes a similar point with regard to Crane's depiction of war (personal communication). Levenson argues both ways when he reminds us that Crane himself was "content with the name of realist" (154) and at the same time makes a case for both Crane and Norris as precursors of modernism in their investigations into human psychopathology.

4. See also Hofmann, who points out that "noise carries information about its source and producer. The effect of noise on humans is therefore by no means only a question of intensity, but often dependent on the information content of the sound, which is evaluated in multiple ways and hardly measurable" ("Schall" 13 my translation). It should be noted here that Hofmann's concept of "information content" differs from Shannon's.

5. These differences may be culture-specific. Surveys in the 1960s, for instance, have shown that Jamaicans, who were exposed to few technological noises when the surveys were being conducted, were less prone than either Europeans or Americans to complain about traffic noises and more prone to complain about the noises of certain animals (Schafer, Tuning 147–48).

6. See also Schafer, who devotes a section of The Tuning of the World to "The Deviousness of the Wind" (171–73) and the frightful proportions its noises have acquired in human ears throughout the ages.

7. I am indebted to John Rowe for making me aware of this critical tradition. As Melville makes clear in "Hawthorne and His Mosses" (1850), "landscapes of the soul" may refer to both an internal landscape (the soul as a territory to be explored) and an external one (the landscape as a reflection of the workings of the soul). The first sense is evoked when Melville praises "the enchanting landscape in the soul of this Hawthorne" (338), the second when he marvels at the "orchard of the Old Manse," which "seems the visible type of the fine mind that has described it":

Those twisted, and contorted old trees, "that stretch out their crooked branches, and take such hold of the imagination, that we remember them as humorists and odd-fellows." And then, as surrounded by these grotesque forms, and hushed in the noon-day repose of this Hawthorne's spell, how aptly might the still fall of his ruddy thoughts into your soul be symbolized by "the thump of a great apple, in the stillest afternoon, falling without a breath of wind, from the mere necessity of perfect ripeness"! For no less ripe than ruddy are the apples of the thoughts and fancies in this sweet Man of Mosses. (339)
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