The Poetics of Information Overload

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Published by University of Minnesota Press

INTRODUCTION

> Relevant information's hard to come by. Soon it'll be everywhere, unnoticed.
>
> —John Cage, *A Year from Monday*

> A human being takes in far more information than he or she can put out. "Stupidity" is a process or strategy by which a human, in response to social denigration of the information she or he puts out, commits him- or herself to taking in no more information than she or he *can* put out. (Not to be confused with ignorance, or lack of data.)
>
> —Samuel Delany, *Stars in My Pocket Like Grains of Sand*

The Aesthetics of Information Overload

Anyone surveying the topic of information overload is bound to run headlong into the phenomenon him- or herself. The topic has attracted the attention of media theorists, futurologists, sociologists, librarians, historians, computer scientists, psychologists, neuroscientists, popular pundits, management theorists—as well as, this book argues, poets.

The Poetics of Information Overload explores twentieth- and twenty-first-century literary works that partake of, as well as parody, the information glut that characterizes modernity. Although information technology has typically been figured as hostile or foreign to poetry, I suggest that avant-garde poetry has been centrally concerned with technologies of communication, data storage, and bureaucratic control—not simply rejecting those technologies, but also adopting and commenting on them. Much of the poetry discussed in this book has been dismissed as "non-referential" or unreadable; by reading this poetry through the lens of information systems and data practices, I show that the poetry of the past century has had much to say about the effects of new media. Rather than being antithetical to technological change, avant-garde poetry has been closely tied to it.[1] Although scholars from other fields have devoted considerable attention to information overload, this book is the first to

account for the phenomenon in relation to modernist and contemporary poetry.

As detailed in my historical survey below, I understand information overload broadly as a range of phenomena relating to the limits of cognition, perception, and memory (both personal and collective). Rather than passively observing an end of history, or drowning in information, avant-garde writers have swum within and against the currents of information flows—demonstrating not only agitation but also absorption. If one replaces the word "art" with "poetry" in the following sentence, it is possible to get an idea of what I mean with respect to poetry: "Data art reflects a contemporary worldview informed by data excess; ungraspable quantity, wide distribution, mobility, heterogeneity, flux."[2] Poetry "informed by data excess" has been with us at least since the emergence of modernism. Virtually the same transposition could be performed on the following sentence from Victoria Vesna's *Database Aesthetics: Art in the Age of Information Overflow*, in which she suggests, "In an age in which we are increasingly aware of ourselves as databases, identified by social security numbers and genetic structures, it is imperative that artists actively participate in how data is shaped, organized, and disseminated."[3] This active participation in the shaping, organization, and dissemination of information has been an important, though underappreciated, ongoing concern of avant-garde poetics on the levels of both form and content.

This study takes modernism as its point of departure because so many of the key concerns surrounding information saturation were first articulated in the late nineteenth century, long before the advent of the computer or the Internet. As Tim Wu has shown, the first all-powerful American "information empires" were not IBM, Microsoft, Apple, Amazon, or Google—but rather Western Union (telegraphy), the Bell System (telephony), and RCA (radio and television).[4] Before there was a "mimeograph revolution" in the 1960s, there was a "magazine revolution" that began in the 1890s.[5] Mark Morrisson succinctly identifies the conditions that brought about such a revolution: "Cheap paper, the rotary press, the Linotype machine—at the most mundane level, these inventions led to the explosion of mass market print publications and advertising at the end of the nineteenth century in Britain and America."[6] As early as his 1926 *One-Way Street*, Walter Benjamin would locate the origins of poetic modernism in Mallarmé's reaction to unprecedented

"locust swarms of print" in the 1890s.[7] Benjamin worried that ever-cheaper means of reproduction would lead to literary writing being "pitilessly dragged out into the street by advertisements and subjected to the brutal heteronomies of economic chaos."[8] But he also foresaw that poets—"the first and foremost experts in writing"—would have a central role to play in the creation of a revolutionary new "picture-writing."[9]

In chapter 1, I explore Gertrude Stein's importance as an inaugural figure in a tradition of sprawling works which, in her own words, cannot be read, but can only be "read at." Kenneth Goldsmith, perhaps the most influential of contemporary appropriation poets, places his writing in the Stein tradition. Stein, he suggests, "often set up a situation of skimming, knowing that few were going to be reading her epic works straight through (how many people have literally read every word of *The Making of Americans*?) . . . Much of Stein's writing was never meant to be read closely at all, rather she was deploying visual means of reading. What appeared to be densely unreadable and repetitive was, in fact, designed to be skimmed, and to delight the eye (in a visual sense) while holding the book. Stein, as usual, was prescient in predicting our reading habits."[10] Goldsmith (himself trained as a sculptor) shifts the literary value of Stein's saturated writing from narrative or semantic levels to visual and aural levels. Whereas visual pleasure in reading is often associated with minimalist works, or with concrete or visual poetry, Goldsmith suggests that there can be an equivalent pleasure in skimming large quantities of text. In surveying Stein's writing in relation to technology over the course of her career, I suggest that Stein was concerned with the effects of information saturation from her early writing in the 1890s until her very last written composition, "Reflection on the Atomic Bomb" in 1946. As Mark Goble writes in *Beautiful Circuits: Modernism and the Mediated Life*, "Stein exemplifies the new mode of writing that Friedrich Kittler calls 'the discourse network of 1900,' which understands the medium of words as powerfully challenged by the ability of film and other 'technological media' to record and store experience of every kind."[11]

In chapter 2, I show how Bob Brown, in claiming that Stein inspired him to create his reading machine, also read Stein's work in relation to technological change. Without using the term proper, Stein and Brown both thematize information overload in ways starkly at odds with the Pound/Eliot/Joyce model of obsessively cataloging cultural history.

Stein's resistance to proper names and to direct quotation suggests a radical break between history and lived memory, as well as between stored information and immediate sensory data. With regard to Joyce, Stein claimed, "You see it is the people who smell of the museums who are accepted, and it is the new who are not accepted. You have got to accept a complete difference. It is hard to accept that, it is much easier to have one hand in the past. That is why James Joyce was accepted and I was not. He leaned toward the past, in my work the newness and difference is fundamental."[12] The museum, like the archive and the library, preserves the data of the past. From Stein's perspective, Joyce's writing is profoundly paleonymic—that is, it preserves proper names rather than interrupting the patriarchal process of genealogical affiliation. Both *Ulysses* and *The Making of Americans* are supremely overloaded (or overflowing) works—but it would be impossible to list the contents of the pockets of the latter's protagonist, David Hersland, much less to map his information intake on a particular day.[13]

Charles Olson, I argue in chapter 3, modified the Pound/Williams model of the poet as prolific autodidact. Williams's late-1920s *Embodiment of Knowledge* is indicative of modernist hostility toward universities as well as toward the growing specialization of knowledge. As rector of Black Mountain College, Olson championed a radically interdisciplinary curriculum. As early as 1949, he incorporated the language of cybernetics into his poem "The Kingfishers," which would go on to be the opening poem in Donald Allen's *New American Poetry*, the most influential poetry anthology of the postwar period. Olson champions an insatiable desire to embody information; at the same time, his attempt to synthesize vast bodies of information from disparate fields culminates in *The Maximus Poems*' failure to communicate that information to the townspeople of Gloucester, Massachusetts (the putative addressees of Olson's epic). Olson, I suggest, is both a hero and a victim of information overload—tragically, as well as self-parodically, at various points in his career.

The fourth chapter, "'When Information Rubs/Against Information': Poetry and Informatics in the Expanded Field in the 1960s," discusses the writing of John Cage, Bern Porter, Bernadette Mayer, and Hannah Weiner, all of whom refer to information overload in the mid to late '60s. Influenced in large part by Marshall McLuhan, they increasingly incorporated informatic motifs and issues into their writing—demonstrating

a recurring fascination with what the art historians Hannah Higgins and Douglas Kahn describe as the "mainframe experimentalism" of the 1960s.[14] Although pre-digital, the "mimeograph revolution" of the 1960s lowered barriers to publication and enabled poets (often in the company of artists) to experiment with visual and found texts in journals such as *0 To 9*. Cage, Porter, Mayer, and Wiener (all of whom were published in *0 To 9*) exhibit a keen interest in new telecommunications and data-storage technologies, and their writing explores a rich array of issues related to the emergence of a postindustrial "information society."

Language poets who came of age as writers in the 1970s, such as Lyn Hejinian and Bruce Andrews, produced new kinds of saturated poetic texts, which I explore in chapter 5. In *My Life* and *The Cell*, Hejinian offers a dense mix of immediate personal sensory data and public information (or misinformation). Likewise, Andrews recycles the linguistic detritus of consumer culture into radically paratactic poems. Works such as Andrews's *I Don't Have Any Paper, So Shut Up (or Social Romanticism)* ask us to reconfigure our notions of personhood and communicative agency. In response to an information-saturated world, Andrews fights saturation with more saturation. Hejinian employs similar strategies—but whereas there is practically no sense of personal recollection in Andrews's poetry, Hejinian routinely interjects seemingly insignificant personal memories into her poems. "Memory is the money of my class," she writes in *My Life*, drawing our attention to the value accorded to information within different contexts.[15] Nostalgia reifies bourgeois conceptions of family and identity; information saturation threatens to undermine such markers of origin.

Drawing on the legacy of conceptual art, recent works of conceptual writing by poets such as Goldsmith, Robert Fitterman, Vanessa Place, and Tan Lin—which I discuss in chapter 6—have been consistently engaged with new media and with questions of appropriation and remediation. Goldsmith's *Day* could well stand as an answer to a rhetorical question posed by Basex's 2007 report on information overload: "What is a knowledge worker to do in a world where the Sunday edition of the *New York Times* has more information than the amount of information an average person alive 400 years ago might have come across in his lifetime?"[16] While Basex Inc. hyperbolically stresses the existential threat of information overload, Goldsmith sanguinely engages it by retyping, without any semantic alteration, an entire day of the *New York*

Times. Retyping the *Times* significantly reconfigures our sense of its context and meaning. "All the news that's fit to print"—but from whose perspective? "Fit" in the sense of size? Or "fit" in the sense of appropriate? In book form, the September 1, 2000, edition of the *New York Times* Late Edition takes up 836 pages. Yet *Day* does not feel encyclopedic in the manner of *Ulysses*. *Ulysses* demands that we pay attention to the specificity of its allusions; *Day* does not. As readers, we cannot possibly master the mostly forgettable and/or immediately obsolete information of the national paper of record. While the management culture writing on information overload continually stresses that workers and knowledge consumers need to exert more careful control over information, Goldsmith and other conceptual writers suggest that we can only exert such control with great difficulty. As a writer, Goldsmith voluntarily gives up control over many aspects of his process. From Goldsmith's perspective, there were few variables involved in producing *Day*—and little or no skill or craft was required. I suggest that Goldsmith's work, along with other recent works of conceptual writing, can be situated in the context of the emergence of cognitive capitalism and the intensification of the "risk society," particularly in the wake of the 2008 financial crisis.

Although I express reservations about the term "information overload"—due primarily to its potential for technological determinism—I think it is here to stay, and I follow the lead both of popular usage, as well of scholars from diverse disciplines, in adopting the term to refer to a range of phenomena related to information abundance. A chart (Figure 2) produced by Google's Ngram Viewer gives an idea of the increasing frequency with which the term appears in the Google Books database. "Information overload" first began to appear in journals of psychology and organizational management around 1960. The term is sometimes traced to Bertram Gross's 1964 *The Management of Organizations*, but it clearly circulated in a number of contexts prior to this.[17] The term appears in Marshall McLuhan's writing for the first time in the 1964 talk "Cybernetics and Culture": "Today, the ordinary child lives in an electronic environment; he lives in a world of information overload. From infancy he is confronted with the television image, with its braille-like texture and profoundly involving character. . . . Any moment of television provides more data than could be recorded in a dozen pages of prose."[18] Here, television is considered the primary culprit and

children the primary victims. McLuhan's later writings would expand considerably on the theme of information overload (as I detail in chapter 4), but perhaps the greatest credit for popularizing the term should to go to Alvin Toffler's 1970 *Future Shock*, which drew on Gross's work.[19] Gross in turn cited Vannevar Bush's 1945 "As We May Think" as the earliest theorization of the problem. The rise of information theory in the 1940s, accomplished by figures such as Bush, Alan Turing, Norbert Weiner, John von Neumann, Claude Shannon, and Warren Weaver, brought with it far-reaching implications. Like the computer itself, the postwar notion of information overload could be said to emerge at the complex intersection of military, corporate, and educational interests.[20]

The emergence of the term proper in the early 1960s can be most closely linked to the need among management theorists to achieve greater efficiency, and among psychologists to assess the impact of new technologies. But beyond this, there is little consensus when it comes to the history of the larger phenomenon. Reputable scholars have variously located the origins of information overload in the library at Alexandria, in medieval scriptoria, in the printing revolution of early modern Europe, in the Enlightenment's "reading revolution," in the late-nineteenth century's "control revolution," in the post-1945 development of computers, as well as in the post-1990s growth of the Internet.[21] Others have argued that the problem of information overload has been greatly exaggerated—

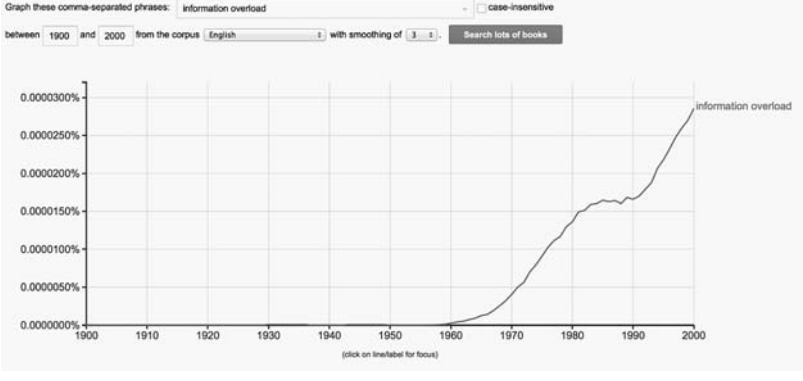

Figure 2. The Google Books Ngram Viewer is still in the beta stage of development and remains unreliable in terms of producing precise results. I reproduce this chart mainly to demonstrate broadly the post-1960 proliferation of the term "information overload."

either out of elitist fear of mass culture, or out of misunderstanding the nature of information and its dissemination.

Using the term "information overflow" to describe artworks that incorporate databases, Victoria Vesna has suggested another approach in her *Database Aesthetics*. While I find her substitution of "overflow" for "overload" suggestive in that it shows the response of artists and writers to information saturation not to be an exclusively negative one, I retain the terminology of "overload," in part because it describes conditions of exhaustion common to "knowledge workers" (a term first coined by the management guru Peter Drucker in 1959). Among the most consistently articulated concerns of those who have written on the subject has been the sense that workers, readers, and computer users experience fatigue. Unlike the more general "overflow," "overload" more forcefully takes account of how often the phenomenon is linked to questions of "infostress" or "information anxiety."[22] Both "overload" and "overflow" convey a strong sense of the limitations of the human capacity to absorb data, but "overflow" may put a more favorable spin on the phenomenon by eliding the sense of agitation implicit in "overload." "Overflow," particularly in the context of poetry, connotes the sublime, an important aesthetic analogue of information abundance. Recent critics have variously used the terms "digital sublime," "information sublime," and "bureaucratic sublime" to describe twentieth- and twenty-first-century conditions of information abundance.[23] Wordsworth famously spoke of poetry as the "spontaneous overflow of powerful feelings," but insisted that it be found in "tranquility." A key aspect of the sublime, according to Kant, is that "the feeling of the sublime carries with it, as its character, a mental agitation."[24] Drawing on Kant (and with direct reference to Stein), Sianne Ngai has coined the term "stuplimity" to describe the negative affects, or "ugly feelings," associated with the sublime.[25]

Many of the major aesthetic debates of the twentieth century—over, for instance, perception, style, technological reproducibility, cultural memory, and canonicity—take on new valences in the context of information overload. Primarily following the lead of media theorists and art historians, this book rereads the avant-garde poetic tradition through the lens of its engagement with information overload. Sven Spieker goes so far as to "view early-twentieth-century modernism as a reaction formation to the storage crisis that came in the wake of Beniger's [control] revolution, a giant paper jam based on the exponential increase in

stored data, both in the realm of public administration and in large companies whose archives were soon bursting at the seams."[26] Spieker claims ingeniously that "Dadaist montage functions as an anti-archive that . . . reacts to the traumatizing paper jam that occurred in the wake of the First World War (no other event in history generated as much paperwork)."[27] The approach taken by Spieker suggests the rich interrelation between twentieth-century aesthetic form and new data-storage techniques.

Jean Baudrillard maintains that "we live in a world where there is more and more information, and less and less meaning."[28] This I find a reductive formulation. More information does not necessarily lead to less meaning (and properly speaking, Baudrillard would be better off using the term "data" rather than the term "information," since information, at least as understood by information theory, must by definition convey meaningful data).[29] The claim that information overload is at odds with narrative fiction could be understood as a version of the complaint that more information leads to less meaning. David Shields's recent *Reality Hungers*, for instance, argues that "we're overwhelmed right now by calamitous information. The real overwhelms the fictional, is incomparably more compelling than an invented drama."[30] Walter Benjamin claims similarly in his 1936 "The Storyteller" that "if the art of storytelling has become rare, the dissemination of information has played a decisive role in this state of affairs. Every morning brings news from across the globe, yet we are poor in noteworthy stories."[31] For Benjamin and Shields, information excess is opposed to authentic experience and to our ability to impose narrative coherence on the world. In response, both Benjamin and Shields practice collage/appropriation techniques in order to recuperate lost meaning. In so doing, they create new (and often surprisingly personal) narratives that decry information excess at the same time that they thrive on guiding readers through that excess.

When T. S. Eliot asks in the 1934 "The Rock" "Where is the wisdom we have lost in knowledge? / Where is the knowledge we have lost in information?" he is articulating a key high modernist anxiety.[32] A surplus of data threatens access to cultural tradition as well as to reliable political information. Max Weber's main thesis in the 1919 "Science as a Vocation"—which would go on to be the central claim of Adorno and Horkheimer's *Dialectic of Enlightenment*—is that "the increasing

intellectualization and rationalization of the world do not . . . indicate an increased and general knowledge of the conditions under which one lives."[33] The culture industry, in Adorno and Horkheimer's terms, thrives off the overproduction of sensory data. As theorized by Siegfried Kracauer and Walter Benjamin, the masses are distracted by mass culture's dazzling ornamentalism.[34] They lose control over knowledge; by succumbing to mass culture they surrender their very ability to make informed political decisions.[35]

High modernism's relation to mass culture has been amply discussed elsewhere—what should be particularly noted here is the degree to which modernist writers were preoccupied by the profusion of information brought about by new technologies of communication and storage.[36] Near the opening of his first essay collection, *The Sacred Wood*, Eliot writes:

> The vast accumulations of knowledge—or at least of information—deposited by the nineteenth century have been responsible for an equally vast ignorance. When there is so much to be known, when there are so many fields of knowledge in which the same words are used with different meanings, when every one knows a little about a great many things, it becomes increasingly difficult for anyone to know whether he knows what he is talking about or not. And when we do not know, or when we do not know enough, we tend always to substitute emotions for thoughts.[37]

Eliot's concern with information abundance, this passage shows, was related to his theory of emotions and individual expression—the subject of his most famous essay, "Tradition and the Individual Talent," also included in *The Sacred Wood*. Eliot's worries about the effects of "vast accumulations of . . . information" were widely shared by his contemporaries. Modernist poets demonstrate a keen preoccupation with guiding the tastes of the "average reader"—works such as Pound's *ABC of Reading* or Louis Zukofsky's *A Test of Poetry* function as primers on what and how to read. Every anthology or great books list could be said to be an attempt to contain a flood of possibilities—Pound's attempt to condense and synthesize general culture for his readers is explicitly couched in terms of rescuing the modern autodidact from the research library. Pound is routinely apologetic about the limitations of his anthological and pedagogical projects, as for instance in the *Guide to Kulchur*:

"Despite appearances I am not trying to condense the encyclopedia into 200 pages. I am at best trying to provide the average reader with a few tools for dealing with the heteroclite mass of undigested information hurled at him daily and set to entangle his feet in volumes of reference."[38] As he writes in the *ABC of Reading*, "We live in an age of science and abundance. . . . The weeder is supremely needed if the Garden of the Muses is to persist as a garden."[39] In some sense Pound spent his entire career trying to condense his own personal mental encyclopedia for his readers—from his early writings on troubadour poetry to the late *Cantos*, Pound's writings (with the important exception of his Imagist poems) are overloaded with historical detail. I. A. Richards famously claimed that T. S. Eliot was able to make *The Waste Land* "equivalent in content to an epic" through his use of allusion.[40] Could *The Cantos* and *The Waste Land* be considered epics of sampling or of data compression? Perhaps designating them as such undervalues their contents. On the other hand, in some sense both are elaborate pastiches which thematize their own fragmentation as well their own inability to make tradition(s) "cohere."

The Cantos and *The Waste Land* present versions of a world overburdened by factual history, and yet threatened at the same time by a loss of authentic cultural tradition. Pound especially had a tortured relation to emergent media forms, most notoriously radio. On one wartime broadcast, he claimed, "The press, your press, is a machine for destroying the memory, the public memory."[41] As it was for Eliot, for Pound the mass media was generally antithetical to "tradition." Eliot's "dissociation of sensibility" occurs in the seventeenth century when poets find themselves no longer capable of "constantly amalgamating disparate experience."[42] Like the metaphysical poet in Eliot's account, the contemporary knowledge worker who suffers from overload proves incapable of "constantly amalgamating disparate experience." Increasingly over the course of the century, the poet was a white-collar office worker, sometimes even thematizing conditions of work and distraction in the workplace.[43] As JoAnne Yates and Alan Liu have shown, Taylorist procedures were introduced into white-collar offices not long after they were introduced in factories.[44] The primary obstacle to white-collar efficiency, to employ an anachronism, was what we would think of as "multitasking." The Taylorist/Fordist response to the distracted worker is to reduce the number of tasks assigned to each worker. The distracted knowledge

worker is typically an insufficiently specialized knowledge worker; the non-specialized (and hence distractible) worker became increasingly anathema over the course of the twentieth century. Concomitantly over the course of the century, as the conceptual artist Ian Burn noted in the early 1980s, intellectuals and artists underwent a process of "deskilling."[45] From the ready-mades of Marcel Duchamp to the *Statements* of Lawrence Wiener, art arguably became information as opposed to craft.

If high modernist poets could envision themselves as critics as well as victims of the discontinuous time of distraction in the workplace, it became more difficult for postwar writers to position themselves outside the continuous stream of data and distraction.[46] Whereas high modernist poets tended to quote high cultural sources in discrete units, more recent techniques of appropriation suggest that such selective methods of quotation have lost their force within contemporary media culture. Rob Fitterman describes his writing practice as follows:

> For me, using appropriation—either wholesale or in smaller sampled units (no hierarchy here)—intersects several current conversations about consumerism, art and technology, readership, etc. . . . By replacing or meshing "authentic" text with found text, I hope to highlight a parallel disparity between the object and the commodified object (Buchloh). *Significantly reduce eDiscovery processing costs by culling and reducing the amount of data collected prior to submission to costly processing.* This is, in part, why I do what I do—not to replicate or exploit the original, but to turn up the volume on its difference as we drag these materials into our own expressions and carve our paths through the informational morass.[47]

Fitterman's appropriation technique calls into question the authenticity of any text in a society dominated by information. But although Fitterman describes our current condition as "the informational morass," he does not nihilistically suggest that there is nothing we can do about it. On the contrary, he suggests that updated defamiliarization techniques might allow for recognizing new ways of navigating an increasingly commodified infosphere.

Perhaps the most iconic avant-garde poem of information overload is Raymond Queneau's 1961 *One Hundred Million Million Poems*, in which ten sonnets can be combined to form 10^{14} possible sonnets. According to François Le Lionnais, "Queneau calculated that someone reading the

book 24 hours a day would need 190,258,751 years to finish it."[48] This works out to 2.7 million human life spans at seventy years each. So demanding was the project of writing the poem(s) that Queneau sought the assistance of Le Lionnais, a mathematician, thereby inaugurating the Oulipo (or *Ouvroir de littérature potentielle*, the influential Paris-based literary collective that remains active to this day). Queneau's poem participates in the information sublime at the same time that it adheres to most of the conventions of the classical sonnet. In accomplishing this fusion of the finite sonnet with the infinitude of the machine, Queneau literalizes two of William Carlos Williams's most famous statements: "A poem is . . . a machine made of words," and "To me all sonnets say the same thing of no importance."[49] No final meaning can be assigned to a poem whose very parameters exceed the attentional capacities of its readers. But this is not to say that the poem is without meaning. In a 1938 essay, "Wealth and Limit," Queneau expressed strong concerns about an overabundance of information: "A finite individual cannot, in a finite amount of time, amass an infinite quantity of knowledge (facts)."[50] For Queneau, "By reading many books one can accumulate wealth, but in order to be truly rich you must renounce wealth; you must renounce what Goethe called 'infinite detail.'"[51] One means by which Queneau aspired to renounce the wealth of information to be found in poetry and in literary history was to undertake to "haikuify" a sonnet of Mallarmé, preserving only its rhyming words. Although *One Hundred Million Million Poems* at first appears to be a limitlessly expansive work, one might also read it as focusing the reader's attention on the most fundamental attributes of the sonnet form. Reduction and multiplication both function in Queneau's work as responses to a culture in which "to consult [the *Larousse de XXe Siècle*], or any catalogue, or any bibliography, is to learn nothing. . . . No one reads the original works any longer, and if they do glance at them, it's only for a quick look at the index or the table of contents."[52]

In common with the writers discussed at greater length in the individual chapters of this book, Queneau sees the accumulation of specialized information as having reconfigured the ways in which literary texts are created and experienced. He does not, however, react to this transformation with nostalgia, but rather with *a renewed attention to poetic form*. It is important to stress that this is a book about information overload in relation to the forms taken by avant-garde writing; this is not a

comprehensive study of information overload as a general phenomenon, nor does this study engage with the "mainstream" tradition in American poetry. Marjorie Perloff offers a succinct rationale for why more traditional poets do not fall under my purview: "The most cursory survey of contemporary poetics would show that, at least as far as what Charles Bernstein calls 'official verse culture' is concerned, technology, whether computer or the video, audio, and print media, remains, quite simply the enemy, the locus of commodification and reification against which a 'genuine' poetics discourse must react."[53] This dichotomy between a media-philic poetic avant-garde and a media-phobic "official verse culture" is perhaps overstated. Nonetheless, after much searching I have found very little mainstream poetry that engages issues of information saturation, either on the level of form or content. As this study argues, one of the distinguishing features of the poetic avant-garde has been its ongoing engagement with changing technologies of information and communication. That engagement has taken many forms, arguably even reshaping our understanding of what qualifies as poetry.

The Case Against Information Overload

A number of strong objections have been made to the term "information overload." The most common objection is made from the perspective of what Bruce Sterling calls "the Whig theory of technological history," in which "all technological developments have marched in progressive lockstep . . . to produce the current exalted media landscape."[54] Along these lines, the graphic design guru Edward Tufte succinctly rejects the term on organizational grounds: "It is not a matter of how much information there is, but rather how effectively it is used. . . . Information overload? . . . Clutter and confusion are failures of design, not attributes of information."[55] The extraordinary growth of Apple, Microsoft, and Google over the past two decades would lend considerable credence to Tufte's claim: the success of these three iconic corporations resulted in large part from their ability to make computers more user-friendly. By creating powerful, easy-to-use interfaces, they became among the largest and most influential American multinational firms within a remarkably short time. In his book *Interface Culture*, Steven Johnson presents a particularly Whiggish late-1990s view of the power of interfaces to combat information overload: "The great surge of information that has

swept across our society in recent years looks genuinely innocuous next to the meticulous anarchy of real bit-space . . . But we see almost nothing of that universe because we have built such sturdy mediators to keep it separate from us . . . What differentiates our own historical moment is that a symbolic form has arisen designed precisely to counteract . . . fragmentation and overload with synthesis and sense-making. The interface is a way of seeing the whole."[56] Johnson does not offer a direct refutation of the term "information overload," but his point is clear: well-designed interfaces largely negate the problem of information overload. Johnson suggests that we need blinders to function efficiently, and he optimistically concludes that interfaces can restore to us a quasi-Hegelian organic wholeness. How information is filtered may be the key question surrounding information overload—I am unconvinced, however, that improved interfaces can address all, or even most, of the epistemological and aesthetic issues that surround information overload.[57]

In his *The Wealth of Networks*, Yochai Benkler terms information overload "the Babel objection." Benkler champions a collaborative reception version of the wiki model when he suggests that "the Babel objection is partly solved . . . by the fact that people tend to congregate around common choices."[58] A greater amount of information should bring with it a greater array of choices, but it should also provide metadata on the popularity and utility of those choices. Benkler places primary importance on editing and filtration, and notes, "The core response to the Babel objection . . . is to accept that filtration is crucial to an autonomous individual."[59] Benkler suggests a related paradox in that perhaps the most effective way to counteract information overload would be to increase Internet concentration—that is, reduce the number of filters or content providers. This would however generally be antithetical to the liberal democratic desire for a diversified media and telecommunications sector. For Benkler, this suggests that "to the extent that concerns about Internet concentration are correct, they suggest that information overload is not a deep problem."[60]

An exemplary display of pro and contra positions concerning information overload took place in 2005 when the playwright Richard Foreman wrote in a statement for his play *The Pancake People; or, The Gods Are Pounding My Head* that "we are becoming 'pancake people'—spread wide and thin as we connect with that vast network of information

accessed by the mere touch of a button."[61] A somewhat unlikely defender of the Western humanistic tradition, Foreman lamented the loss of "a tradition of Western culture in which the ideal (my ideal) was the complex, dense and 'cathedral-like' structure of the highly educated and articulate personality—a man or woman who carried inside themselves a personally constructed and unique version of the entire heritage of the West."[62] By contrast, Foreman wrote, "today, I see within us all (myself included) the replacement of complex inner density with a new kind of self-evolving under the pressure of information overload and the technology of the 'instantly available.'"[63] In response, the computer scientist and pioneering artificial intelligence researcher Marvin Minsky scoffed at such claims:

> Mr. Foreman complains that he is being replaced (by "the pressure of information overload") with "a new self" . . . I think that this is ridiculous because I don't see any basic change; there *always* was too much information. Fifty years ago, if you went into any big library, you would have been overwhelmed by the amounts contained in the books therein. . . .
>
> So, in my view, it is not the gods, but Foreman himself who has been pounding on his own head. Perhaps if he had stopped longer to think, he would have written something more sensible. Or on second thought, perhaps he would not—if, in fact, he actually *has* been replaced.[64]

Minsky is in some sense correct to point to the long history of information overload, as well as to point to the comical implications of Foreman having been replaced by something like an "inforg" avatar. Nonetheless, Minsky is surprisingly tone deaf to the increasing urgency of claims such as Foreman's. That information overload has always existed, or has been nearly coterminous with literacy, should not necessarily lead us to ignore the more recent history of the term over the past several decades. The digitally networked human may be far from a cyborg or an automaton—and yet surely the quantity of data available instantaneously has radically changed human behavior, particularly when it comes to accessing and producing cultural artifacts and literary texts.

The strongest objection to the term information overload, in my view, is that it implies an inherently antidemocratic attitude toward the production of information at the same time that it suggests a rejection of popular and mass culture. According to Mark Poster, "Complaints

that the net inundates everyone with information overload should be understood as the statement of those who are comfortable with earlier restrictions on who speaks, to whom, when, as well as with the content of what may be said. . . . It is pointless to bemoan or to celebrate the new conditions; one must instead work to comprehend critically their limits and affordances."[65] While I agree with Poster that information overload should not necessarily be seen in utopian or dystopian terms, I am less certain that the problem can so simply be attributed to anxieties about the masses gaining a voice. Complaints about the inundation of books have existed at least since the advent of print culture. It represents an epochal shift that most Internet users can at a moment's notice publish their opinions globally on a blog. But historically the term information overload would seem to be much more closely connected to another of Poster's objections to the term: "The discourse of the data flood, we might call it, presumes a psychophysiological model that is questionable: humans must have a limited ability to absorb external sensations, and the Internet is hogging too much brain space."[66] Here we encounter a considerable difficulty, since there is much disagreement among neuroscientists, management experts, and humanists as to the limits of our cognitive ability to process large quantities of information.

Attention: The Limits of the Human Processor

Jonathan Crary, following the lead of Beniger and others, has suggested that in the late nineteenth century new technologies of reproduction and communication—as well as the professionalization of fields such as psychology within research universities—created a cultural crisis surrounding questions of attention and distraction: "It is in the late nineteenth century, within the human sciences and particularly the nascent field of scientific psychology, that the problem of attention becomes a fundamental issue. It was a problem whose centrality was directly related to the emergence of a social, urban, psychic, and industrial field increasingly saturated with sensory input. Inattention, especially within the context of new forms of large-scale industrialized production, began to be treated as a danger and a serious problem, even though it was often the very modernized arrangements of labor that produced inattention."[67] Although he does not use the term "information overload," Crary suggests that a powerful conflux of social and technological factors coalesced

around the issue of attentiveness. In doing so, Crary largely negates or sidesteps neuroscientific arguments about the limitations of our brain's processing power. For Crary, it is social pressures, rather than the inherent limitations of the human processor, that define normative patterns of concentration and consciousness. He is particularly outspoken in his suspicion of the diagnostic category of ADHD (or ADD):

> Over the last few years we have been reminded of the durability of attention as a normative category of institutional power, in the form of the dubious classification of an "attention deficit disorder" (or ADD) as a label for unmanageable schoolchildren and others. Without entering into the larger issue of the social construction of the illness, what stands out is how attention continues to be posed as a normative and implicitly natural function whose impairment produces a range of symptoms and behaviors that variously disrupt social cohesion. . . . Of course, one distinction that separates contemporary discussions from those of a century ago is the insistence that ADD is not linked to any weakness of the will, and there is no personal responsibility involved.[68]

Crary is right to suggest that the ongoing attention crisis and the problem of information saturation have in a sense become self-fulfilling prophecies of the era of industrial (or postindustrial) production. Basex, for instance, demonstrates that those who attempt to remedy the problem are often major players in hyping the problem. But even if the same is true with regard to ADHD, there exists a considerably greater body of research on the side of psychiatrists and neuroscientists than on the side of those humanists and others (e.g., members of the Church of Scientology) who have cast aspersion on the diagnostic category. Crary describes ADHD as a "dramatic expansion of another layer of disciplinary technology—the sweeping use of potent neurochemicals as a strategy of behavior management."[69] As much as I admire the writing of Crary and Stiegler, I question their hasty dismissal of a condition that is generally said to affect at most between 3 percent and 5 percent of the population. According to the psychiatrist Thomas Brown, whose book on the topic is fairly representative of the mainstream medico-scientific perspective, "The medications used for ADD are among the best researched for any disorder."[70] In his *Overflowing Brain: Information Overload and the Limits of Working Memory*, the Swedish neuroscientist

Torkel Klingberg notes that "attention is the portal through which the information flood reaches the brain," and that "working memory is essential for controlling the attention. We have to remember what it is we are to concentrate on."[71] According to Klingberg and others, drugs such as Adderall and Ritalin have been shown to improve working memory by as much as 10 percent. Even if these drugs are overprescribed, particularly to children, it seems excessive to make ADHD a central front in the war against what Stiegler labels as "psychopower."

In his most extensive treatment of ADHD, Bernard Stiegler suggests that attention-destroying technologies and "media-rich environments" have produced "an organological revolution of the life of the mind," and suggests that "in the course of just three generations, this mutation has become literally colossal, an almost unimaginable worldwide change."[72] Recent psychological research has suggested that cognitive behavior has adapted since the widespread adoption of the Internet. Preliminary experiments conducted by a team led by the psychologist Betsy Sparrow suggest that "processes of human memory are adapting to the advent of new computing and communications technology. Just as we learn through transactive memory who knows what in our families and offices, we are learning what the computer 'knows' and when we should attend to where we have stored information in our computer-based memories."[73] Sparrow and colleagues acknowledge that there are innate limitations to human memory, but they also argue that the cognitive benefits of the Internet far outweigh the costs. They conclude that "we are becoming symbiotic with computer tools, growing into interconnected systems that remember less by knowing than by knowing where the information can be found. This gives us the advantage of access to a vast range of information, although the disadvantages are constantly being debated. It may be no more than nostalgia at this point, however, to wish we were less dependent on our gadgets."[74]

N. Katherine Hayles has written extensively on ADHD and reading practices, and suggests that educators should differentiate between "hyper" and "deep" attention. According to Hayles, "Deep attention, the cognitive style traditionally associated with the humanities, is characterized by concentrating on a single object for long periods (say, a novel by Dickens), ignoring outside stimuli while so engaged, preferring a single information stream, and having a high tolerance for long focus times. Hyper attention is characterized by switching focus rapidly

among different tasks, preferring multiple information streams, seeking a high level of stimulation, and having a low tolerance for boredom."[75] Hayles suggests that "hyper attention" poses a threat to traditional methods of education—but she does not claim that "hyper attention" is an unmitigated evil, or a conspiracy to destroy the attention of the world's youth. Like the mainstream tradition in management theory, what Hayles is primarily suspicious of is essentially multitasking.[76] She does not offer a blanket critique of the entire psychiatric establishment, and her views are backed by scientific sources. What seems to be most at stake in Hayles's assessment is the continuing value of the contemplative experience of reading. Hayles offers the example of a Dickens novel to illustrate her case for "deep attention," but she does not specify a particular Dickens novel. Here perhaps an analogy can be made to the avant-garde writing I discuss under the rubric of information overload. At least in their initial periodical forms, Dickens's writings must often have competed with other works in something like a "hyper attention" mode. Surely *A Christmas Carol* is a page-turner, but what of the notoriously unfinishable *Bleak House*? It seems to me that despite its length, *Bleak House* is not, at least in a formal sense, a text that Dickens meant to be "read at" rather than read.

The speed at which texts are read is an important corollary of the information overload debate—particularly in the context of literary writing. "Reading may be classified according to the time it takes up," Georges Perec writes in his supremely classificatory *Species of Spaces*.[77] Tan Lin (discussed in chapter 6) has recently written that "all reading is format-dependent scanning i.e. controlled forgetting."[78] Such claims made about poetry have been controversial. Dale Smith and others have recently advocated "Slow Poetry" in response to conceptual writing. Smith and Goldsmith's 2009 exchange "The Tortoise and the Hare: Dale Smith and Kenneth Goldsmith Parse Slow and Fast Poetries" offers an excellent overview of this debate.[79] Both Goldsmith and Smith see the Internet as profoundly altering reading practices; the premises on which they construct their polemics are particularly revealing. According to Goldsmith (who, to be fair, is operating in a provocateur mode), "Any notion of history has been leveled by the internet."[80] In response, Smith argues, "The only difference between a digital archive and a library is found in the different storage capacities and the greater accessibility offered by digital formats. A 'truly digital immersion' doesn't seem to answer anything

more or less than print immersions—or the speeded up way of life after airplanes and cars or whatever. The human psyche remains at best a kind of Paleolithic thing, and there's a lot of brain research and evolutionary biology etc that talks about this."[81] Goldsmith's notion of an end of history brought about by the Internet is clearly overstated, as is Smith's invocation of the prehistoric limitations of human cognition. At the same time, their starkly divergent positions reveal a shared emphasis on adapting poetry either to embrace, or to resist, the acceleration of reading.

The Claudius App: A Journal of Fast Poetry, edited by Jeff Nagy and Eric Linsker, provides a platform for contemporary poetry that engages new forms of reading and writing. The journal's fourth issue takes the form of an ingenious parody of *Poetry Magazine*'s iPhone app. In effect, *Poetry*'s app (see Figure 3) is a relational database that allows readers to choose poems based on moods (e.g., sadness) and topics (e.g., youth). *The Claudius App IV* (Figure 4) uses the same categories, but leads readers to its own content. *The Claudius App IV* is not in fact a mobile application written for the iPhone, but instead a webpage written in HTML that is designed to look like an app. Clicking on the *Poetry* app's "More Info" button leads to the banally humanistic statement that "This application was created to introduce new audiences to the world of poetry." Clicking on *The Claudius App*'s "More Info" button leads to an absurdist mash-up text that begins "The system was marking down," which any diligent reader of postwar American poetry will recognize as a parody of the opening line of John Ashbery's 1970 "The System": "The system was breaking down."[82] While *The Claudius App* may be something of an inside joke, it is also reflective of larger phenomena related to the ubiquitous availability of poetry online. *Poetry*'s app presumes that what draws new readers to poetry are primarily affective and personal considerations. *The Claudius App*'s parody would seem to suggest that it is unlikely that readers will read traditional poetry on their phones. *Poetry*'s app is, in a sense, built on a paradox: it aims to draw casual mobile readers to poetry that can be quickly consumed, and yet the poems it draws readers to, for the most part, are traditional contemplative lyrics that seem out of place on an iPhone screen.

Joshua Clover (whose poetry is included in the first issue of *The Claudius App*) claims that "modern poetry, and free verse in particular, is indeed faster" than its pre-twentieth-century antecedents.[83] For Clover, this acceleration suggests an ongoing engagement with technological

Figure 3. Poetry Foundation app (2013).

Figure 4. The Claudius App IV: A Journal of Fast Poetry (2013).

change, as well as with increasingly intensified forms of capitalism. The historian Sue Currell has shown that from the late nineteenth century onward it became apparent that new technologies would alter the nature and speed of reading. Slow reading came to be seen as a contemplative luxury (and/or a pedagogical necessity); speed reading came to be viewed as a modern necessity. Currell describes how speed reading was typically disparaged until the 1890s, when new psychological research argued that attention was "shown not to decrease with acceleration but to sharpen and improve."[84] From the turn of the century to the 1950s, speed reading manuals proliferated. While traditionalists might maintain that reading quickly was antithetical to literature, even conservative modernist critics such as I. A. Richards felt compelled to experiment with speed reading. With his reading machine, Bob Brown (as discussed in chapter 2) was arguably parodying the speed reading movement. The introduction of mechanized or accelerated forms of reading has, not surprisingly, alarmed many.[85] For others, such as Brown, new technologies of reading and writing have also held forth the promise of radically altering the nature of poetic language, which need not be created and received within the confines of a contemplative state free from the attractions and distractions of new communications technologies.[86]

Drawing primarily on the examples of Stein and Cage, the poet and critic Joan Retallack suggests that both were centrally concerned with reconfiguring the attention of their viewers. In *The Poethical Wager*, she argues that the "role of the arts seems positively urgent" because "in this age of Attention Deficit Disorder, how rare an informed, intense, not to say pleasurable connection with anything in our daily lives can be—the effects that this distractedness has on possibility and aspiration."[87] Thus, drawing attention to attention, in Retallack's terms, is akin to an ethical (or "poethical") act. Retallack's defense of avant-garde writing as an antidote to distraction ingeniously allows the writing to retain its capacity to shock at the same time that it acknowledges that poetry must compete with countless distractions.

The Economics of Attention

In his book (whose lengthy title itself seems designed to frustrate direct attention!) *plagiarism/outsource, Notes Towards the Definition of Culture, Untitled Heath Ledger Project, a history of the search engine, disco OS*, Tan

Lin writes, "An attention span produces things that interest us and not the other way around. Thus every attention span is a form of labor whose aim is to produce surplus value. We own our own capacities for producing attention, in the way that workers once owned arms and legs and with them produced iron hoops or steel forks."[88] In fact, Lin is quoting without attribution an article by Jonathan Beller titled "Paying Attention."[89] Have we as readers been paying attention? Did we just *pay* our attention to Lin? Or to someone else? Did we derive something in return from the transaction? A quick web search, as every professor knows, is the fastest way to catch a plagiarist. Perhaps Lin alludes to this phenomenon with his ambiguous titular phrase "a history of the search engine." One effect of Lin's appropriation tactic is to demonstrate that we have very limited ownership when it comes to owning our own attention. To "surf" the web is perhaps to use our attention in ways that are not necessarily productive. Even so, the waves on which we surf would seem to be overwhelmingly located on private beaches.

The management theorist Herbert Simon was perhaps the most influential thinker on the economics of attention of the postwar period. Simon's *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organizations* (first published in 1945 and subsequently expanded and updated) declares in its most recent, 1997 edition, "The central lesson that the computer should teach is that information is no longer scarce or in dire need of enhanced distribution. In contrast with past ages, we now live in an information-rich world. . . . The main requirement in the design of organizational communication systems is not to reduce scarcity of information but to combat the glut of information, so that we may find time to attend to that information which is most relevant to our tasks."[90] Even before the rise of the personal computer, it was clear to Simon that corporations were dedicating a significant proportion of their resources to information management. For the most widely praised management text of its kind to make information overload a central concern gives an idea of the threat perceived by the managers and corporations. In a much-quoted passage, Simon claimed in 1971 that "what information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention, and a need to allocate that attention efficiently among the overabundance of information sources that might consume it."[91] Simon coined the term "satisficing" to describe "a bounded rationality" in which

in the interest of maximizing utility and efficiency it makes sense not to investigate all possible outcomes of a decision. Daniel Kahneman and Amos Tversky (who, like Simon, also won the Nobel Prize in Economic Sciences) suggested further that a greater number of life choices would not necessarily make people happier.[92] Barry Schwartz terms this the "paradox of choice": when we are confronted by a hundred possible varieties and sizes of toothpaste in the supermarket, we are likely not to benefit from devoting extensive attention to our selection process.[93] Happiness, in Schwartz's view, largely results from the proper allocation of attention.

Attention economics, the rhetorician Richard Lanham has recently argued, is so fundamental to our contemporary world that rhetoric deserves to be utterly redefined as a field: "[Rhetoric] has traditionally been defined as the art of persuasion. It might as well, though, have been called the economics of attention. In a society where information and stuff have changed places, it proves useful to think of rhetoric precisely as such, as a new economics."[94] Lanham and others are grappling with a number of complex, interrelated issues. In a society of mass consumption, both of material products as well as of entertainment and information, it is often unclear who owns what when it comes to attention. How should we quantify attention? According to the psychologist Mihaly Csikszentmihalyi, attention can be quantified on the level of the life span:

> It seems that we can manage at most seven bits of information—such as differentiated sounds, or visual stimuli, or recognizable nuances of emotion or thought—at any one time, and that the shortest time it takes to discriminate between one set of bits and another is about 1/18 of a second. By using these figures one concludes that it is possible to process at most 126 bits of information per second, or 7,560 per minute, or almost half a million per hour. Over a lifetime of seventy years, and counting sixteen hours of waking time each day, this amounts to about 185 billions bits of information. It is out of this total that everything in our life must come—every thought, memory, feeling, or action.[95]

For Csikszentmihalyi, it is essential to human happiness that we find "flow," which he defines as sustained concentration. Excessive sensory input inhibits flow, and detracts from our quality of life. Csikszentmihalyi

generally assumes that individuals can create "flow" through effortful self-control—presuming that individuals are the owners of their own attention. Others, who link attention and distraction more closely to technology, are less sure that individuals are in control of their attention. At stake are not only issues of who owns information, but who controls the attention required to process information.

If, in a crude version of the Marxist model of exploitation, capitalists continually appropriate the surplus value produced by the physical labor of workers, it remains unclear what rights knowledge workers have over the products of their intellectual labor. Knowing what rights consumers of information have, if any, is even less clear. Whether individuals have rights to be protected from advertising, data collection, and information saturation seems an open question in an era where intellectual property is in flux. Attention, rather than labor, may have become the general equivalent—but the two are of course closely related.[96] In *The Human Motor: Energy, Fatigue, and the Origins of Modernity*, Anson Rabinbach chronicles how in the postwar period, "with the declining significance of industrial work as a paradigm of human activity and modernity, the body no longer represents the triumph of an order of productivism."[97] Gradually replacing the industrial age metaphor of the human motor were any number of information age metaphors: the cyborg, the global brain, the human word processor.[98] Such analogies are so ubiquitous and generalized as to defy comprehensive description here; in the context of information overload what is perhaps most important to note is that these analogies almost always have political implications in terms of the potential for technology to supplement or to supplant human agency.

An Eco-nomics of Memory: Archive Pandemic/Archive Panacea

Despite the pervasive rhetoric of dematerialization that surrounds the information age, the topic of information overload seems repeatedly to return to questions related to the archive, typically imagined in physical terms. Who authorizes its contents? Who filters? Who and what is preserved within? Who has access? Who can forget? The purported anarchy of the Internet-as-mega-archive suggests to many that a crisis of epic proportions is underway in terms of literary valuation. In his *Gutenberg*

to Google: Electronic Representations of Literary Texts, Peter Shillingsburg writes of e-texts that "already information overload has set in. The comprehensiveness of the electronic archive threatens to create a salt, estranging sea of information, separating the archive user from insights into the critical significance of textual histories."[99] In a recent essay, Kenneth Goldsmith writes that "the blizzard of language is amnesia-inducing; these are not words to be remembered."[100] Goldsmith's concern is not new among poets. As early as 1962, John Ashbery would write cryptically in his influential *Tennis-Court Oath* that

> In America the office hid
> archives in his
> stall . . .[101]

Whatever this personified "America the office" is hiding is unclear, as if the poet were lost in an infinitely mysterious bureaucratic sublime. As is often the case in Ashbery's poetry, the referents are vague; the poet toggles back and forth between fragmentary memories and the immediate present, and seems forgetful or distracted.[102]

This book suggests that poets have not been passive victims of the proliferation of information, but rather have actively participated in—sometimes benefiting from, sometimes implicitly advocating, sometimes resisting—that proliferation. Poetry's engagement with information technologies constitutes its own emergent textual history. As Derrida reminds us, archives are not simply about preserving the past—they are about continuously reconfiguring the future. In Derrida's terms, the archive is really a giant filter, not unlike (in Freudian terms) a colossal superego, wherein a culture authorizes its past. Derrida frames the question of the archive in economic terms, with recourse to the etymological sense of the word: "Every archive . . . is at once institutive and conservative. Revolutionary and traditional. An *eco-nomic* archive in this double sense: it keeps, it saves, but in an unnatural fashion, that is to say by making the law (*nomos*) or in making people respect the law. . . . It has the force of law, of a law which is the law of the house (*oikos*), of the house as place, domicile, family, lineage, or institution."[103] The question of the archive, then, is fundamentally a question of the economics of memory. What constitutes "an unnatural fashion" of memorialization? Is the technicization of memory by itself unnatural? Alluding to

Aristotle's distinction between the natural production and accumulation of wealth within the household (economics) and the unnatural production and accumulation of wealth outside the household (chrematistics) through finance capital and other means, Derrida would seem to suggest that insofar as the archive redefines memory through technicizing it, then the process of archivization is unnatural. The salient point here would be that the archive is not a neutral space of accumulation: rather, the archive is to cultural capital what the investment bank is to finance capital. The archive is a space of endless revaluation, which both preserves and produces memories far in excess of the interpretive capacities of any one archivist or "market maker."

At the opposite extreme from "archive fever," there is what could be called an "archive panacea" countermovement. The Global Consciousness Project at Princeton could be understood as one such incarnation of the notion that the World Wide Web is an evolving "noosphere" (in Teilhard de Chardin's terms).[104] Proponents of "archive panacea" tend to see the web as a radical social leveler, distributing information to the many with few adverse consequences. This might be seen as an extreme version of the Whig theory of technological development, which infuses the progressive model of information technology with a healthy dose of evolutionary fervor. Those who stress the dangers of information overload often invoke the "Cro-Magnon brain" as an analogue to the modern human brain.[105] Those who champion the advantages of unlimited access to information often suggest that in the course of a few generations human consciousness has been utterly transformed. From the standpoint of evolutionary science, both of these positions seem premised on questionable sociobiological assumptions. By any respectable measure, it should take many generations for the effects of information technology to affect the genetic traits of human beings.[106]

The idea of a totalizing digital archive, however, rather than inspiring utopian optimism, generally seems to inspire suspicion, if not paranoia. A poem such as Mel Nichols's "I Google Myself" describes, as well as performs, the now-common narcissistic experience of locating oneself within the global archive of the web.[107] (The poem takes the form of a parody of the lyrics to the popular song "I Touch Myself" by Divinyls.) The global archive offers the possibility that every literate person can become an archivist whose archive is available to all with the requisite technological means. Craig Dworkin has recently applied the term

"hypermnesia" to the conditions facing the publication and valorization of contemporary poetry. Hypermnesia involves exceptionally vivid memories, and yet it also implies a pathological overvaluation of certain memories at the expense of others. The archetypal literary hypermnesic is Borges's Funes the Memorious.[108] Like "The Library of Babel," the story of Funes has become a central point of reference in discussions of information overload. "The certainty that everything has already been written annuls us, or renders us phantasmal," Borges writes in "The Library of Babel."[109] Funes's total memory annuls his ability to create anything new, so overwhelmed is he by the complexity of his total recall.

Freud, as in the famous analogy of the layers of the city of Rome in *Civilization and Its Discontents*, suggests that in effect we never really forget, but rather repress, past experiences. Information overload, we might say, results partly from the sense that the archive, like the globe itself, is hopelessly overpopulated with memories.[110] Around the same time that information overload was becoming a widely circulated term in the late 1960s and early 1970s, concern about overpopulation also began to take on new urgency.[111] Even earlier, Stein, Brown, and Olson all demonstrated concern with human overpopulation—or at least with overpopulation's sociological corollary, the problem of anomie. French curator and art critic Nicholas Bourriard has placed under the banner of "postproduction" art a body of work that specifically engages a world overpopulated with art objects:

> Since the early nineties, an ever increasing number of artworks have been created on the basis of preexisting works; more and more artists interpret, reproduce, re-exhibit, or use works made by others or available cultural products. This art of postproduction seems to respond to the proliferating chaos of global culture in the information age, which is characterized by an increase in the supply of works and the art world's annexation of forms ignored or disdained until now. These artists who insert their own work into that of others contribute to the eradication of the traditional distinction between production and consumption, creation and copy, readymade and original work. The material they manipulate is no longer *primary*. It is no longer a matter of elaborating a form on the basis of a raw material but working with objects that are already in circulation on the cultural market, which is to say, objects already *informed* by other objects.[112]

The archive, as we know, is continually expanding and can never be total. As defined by Foucault, the archive is more like a living language than it is like a dead one:

> The archive . . . defines a practice that causes a multiplicity of statements to emerge as so many regular events, as so many things to be dealt with and manipulated. It . . . does not constitute the library of all libraries, outside time and place; nor is it the welcoming oblivion that opens up to all new speech the operation field of its freedom: between tradition and oblivion, it reveals the rules of a practice that enables statements both to survive and to undergo regular modification. It is the general system of the formation and transformation of statements.[113]

What Hal Foster has called the "archival impulse" does not, then, imply an end of history, but rather a proliferation of histories. It is to Foucault that we largely owe the critical–theoretical notion of the singular "archive," and yet Foucault was careful to avoid the conventional polarity of the archive-as-total-oblivion versus the archive-as-total-memory. To define the archive as "a general system of the formation and transformation of statements" is admittedly vague, but as a definition it fits well with the notion of an electronic archive that is continually expanding. One of Bourriard's most crucial claims is that postproduction art goes beyond appropriation art in that the works are premised on an ideal of sharing rather than of individual ownership. Postproduction art is drawn from what is in effect a giant global archive of images, ideas, and sounds. Such an archive is open to all who know where to look, and how to borrow without stealing (or without getting caught).

Among the archive's paradoxes is that it preserves memories in bulk, but that very bulk threatens to alter, if not obviate, the significance of those memories. The hypermnesiac archive, in Dworkin's description, "remains a destructive accumulation, a bibliographic potlatch in which the survival of books—books and not merely their 'content'—can only be guaranteed by their destruction."[114] Archive fever, as a version of information overload, results from a hypertrophy of stored data, and forces us to continually bridge the distance between data and knowledge, perception and meaning, lived memory and artificial memory. Nietzsche is conspicuously absent from *Archive Fever*, although he is perhaps Derrida's central philosophical influence. In many respects, Nietzsche's

"Utility and Liability of History" is more prescient of current debates about information saturation than are the texts of Freud—given that the unconscious generally plays a small role in contemporary discussions of information overload, and given also Freud's tendency to assume that it is internally stored memory, as opposed to external written memory, that overwhelms our sensorium. In the immediate aftermath of the Franco-Prussian War, Nietzsche noted that the war had "already been transformed into a hundred thousand pages of printed paper."[115] For Nietzsche, the increasing availability of historical data was anathema to heroic individualism, indeed to individualism of any kind: "The modern human being drags around with him a huge number of indigestible stones of knowledge, which then on occasion, as in the fairy tale, make quite a racket inside his stomach. This racket betrays the fundamental characteristic of this modern human being: the remarkable antithesis between an interior that corresponds to no exterior and an exterior that corresponds to no interior—an antithesis unknown to peoples of the ancient world. Knowledge consumed in excess of hunger—indeed, even contrary to one's need—now no longer is effective as a shaping impulse."[116] Stuffed with knowledge, the human being is bloated to the point of shapelessness. Nietzsche's metaphors are of food, not of drowning, and the message is that the inwardness we take to be founded on historical knowledge is in fact no inwardness at all. Rather than the individual devouring knowledge in the archive, the individual is devoured by the archive.

According to the ideals of classical humanism, one could never know too much. But perhaps at the very moment God died, He returned with infinite technologies to preserve all human knowledge, whatever its actual worth. For Nietzsche, information inundation is a matter of life and death: "Historical knowledge constantly flows into [modern man] from inexhaustible sources; alien and disconnected facts crowd in upon him; his memory opens all its gates and is still not open wide enough; nature struggles as best it can to receive, order, and honor these alien guests, but they themselves are involved in a struggle with one another, and it seems necessary to overpower and subdue them all if he himself is not to perish as a result of their struggle."[117] Whereas for Nietzsche, the flood threatens to overwhelm us with historical data, for most contemporary observers information overload threatens to overwhelm us with present data, with the latest news rather than with ancient history. Nietzsche personifies facts themselves; in the process of moving from

data to knowledge, facts effect the opposite movement in humans: abundant facts turn each person into a mere factoid among factoids. Nietzsche's remark that "our writing tools are also working on our thoughts" is frequently cited in support of arguments that imply technological determinism.[118] But it is also true that our thoughts are working on our writing tools; the tools have allowed us to produce works of art that would not have been possible (or perhaps even conceivable) otherwise.

With electronic memory now ubiquitous, it requires more conscious agency to organize and/or delete memories than it does to preserve them in bulk.[119] Total memory is rapidly becoming our default mode. Bernard Stiegler writes that "we are in constant relation with mnemotechnological apparatuses of all kinds, from televisions and telephones to computers and GPS navigation systems. These cognitive technologies, to which we consign a greater and greater part of our memory, cause us to lose ever-greater parts of our knowledge."[120] For Stiegler, this exteriorization of memory results in a situation analogous to the process of proletarianization described by Marx: the factory worker needs no skills or knowledge of his own to perform his tasks; likewise, the consumer or producer of knowledge need not retain a personal store of knowledge. The pocket-size archive fundamentally reconfigures the experience of acquiring publicly available information; what its overall effects on literature and general human knowledge will be, it seems too early to say. The very magnitude of the changes taking place in terms of communication and data storage make elaborate prognostications impossible. Physical letters, which often constituted the most important source of historical information about writers, effectively no longer exist as evidence of the beliefs and methods of younger writers. Derrida notes the transformation brought about by e-mail:

> Electronic mail today . . . is on the way to transforming the entire public and private space of humanity, and first of all the limit between the private, the secret (private or public), and the public or the phenomenal. It is not only a technique, in the ordinary and limited sense of the term: at an unprecedented rhythm, in quasi-instantaneous fashion, this instrumental possibility of production, of printing, of conservation, and of destruction of the archive must inevitably be accompanied by juridical and thus political transformations. These affect nothing less than property rights, publishing and reproduction rights.[121]

E-mail is both infinitely retrievable as well as radically intangible—in the sense that it carries with it little or no "aura" in Benjamin's terms. At least in part, Derrida was obsessed with the archive in his late writing because he was being meticulously archived while still alive—a situation common to many well-known late twentieth-century intellectuals and poets, but a situation that seems increasingly unlikely in an era where there are fewer and fewer physical traces of the writing process (in the form not just of letters, but also of drafts, notebooks, etc.). At the same time, nearly every action one undertakes with a word processor or a web browser leaves behind a considerable trail of metadata (time saved, time accessed, etc.). How much value are we to place on minutely recorded data that has hitherto not been considered worth preserving? As with so much else, questions of memory and interpretation ultimately come down to questions of control and meaning. The unit of the book remains the preeminent literary filter—whether that will remain the case in the future is a question beyond the scope of the printed document you hold before you.

The Copiousness of Metadata and the Convergence of Media

In *The Making of Americans*, Stein envisions a kind of modernist Total Information Awareness to be brought about by the sheer comprehensiveness of her epic novel: "Soon there will be a history of every kind of men and every kind of women and every way one can think about them. Soon there will be a history of every man and every woman and every kind of being they ever have or could have in them."[122] Her words bring to mind the conceptual artist Douglas Huebler's claim that "one of the great things that holds a culture together is redundancy of information."[123] Character, for Stein, is deeply based in habit, which is to say in repeated actions and behaviors. Typically we understand repeated, habitual activities in pejorative terms. But as Huebler suggests, in information theoretical terms redundancy is necessary to convey meaning. Other influential modernists, such as Flaubert, were more alarmed at the growing redundancy of stored information and its effects on human character.

If there were an ur-text of information overload, it would have to be *Bouvard and Pécuchet*. In Raymond Queneau's words, "Our helpless

autodidacts are flummoxed by tides of contradictory information, competing theories, and unverifiable assertions."[124] Flaubert, as is well-known, read fifteen hundred volumes as background research. Bouvard and Pécuchet are invoked so frequently in discussions of appropriated writing that referencing them in that context is a cliché in itself. If there were an entry for "information overload" in the *Dictionary of Received Ideas* (inventing new definitions for it is almost another cliché!), it might read, "An affliction from which this author suffers greatly." Bouvard and Pécuchet bear witness to a vicious circle of exponentially expanding textuality from which they and their creator cannot escape ("Printing press" is defined as "A marvelous discovery. Has done more harm than good").[125] In their failure to complete their classification scheme, our heroes are, in the words of Craig Dworkin, like "interfaces to the proliferating database of printed matter in the Troisième République."[126] In the fragmentary Chapter 11 (the last Flaubert wrote) of *Bouvard and Pécuchet*, our heroes undertake to "copy haphazardly, whatever falls in their hands, all the papers and manuscripts they come across, tobacco packets, old newspapers, lost letters, believing it all to be important and worth preserving."[127] The copyists return to their original vocation with even greater gusto now that it is an avocation. "But soon they feel the need to make some sort of classification."[128] Presumably the two believe they will someday be able to retrieve their data—and thus they begin to construct a classification system, to undertake a "Dictionary of acquired ideas. Catalogue of fashionable ideas." Even poetry (which is defined as "Utterly useless. Out of fashion") is to be reduced to the level of mere bureaucratic data: "The manuscripts of Marescot's clerk = poetic passages."[129]

The ease with which text and music can now be produced, copied, and exchanged has spawned an important body of recent critical writing which places in question the nature of intellectual property. Kenneth Goldsmith's preface to *Against Expression: An Anthology of Conceptual Writing* claims, convincingly to my mind, that the recent surge in appropriation writing is a response to unprecedented textual abundance. "Why are so many writers now exploring strategies of copying and appropriation?" he asks. "It's simple: the computer encourages us to mimic its workings. If cutting and pasting were integral to the writing process, we would be mad to imagine that writers wouldn't explore and exploit those functions."[130] For Goldsmith, "With the rise of the Internet, writing is

arguably facing its greatest challenge since Gutenberg. What has happened in the past fifteen years has forced writers to conceive of language in ways unthinkable just a short time ago."[131]

Marcus Boon's *In Praise of Copying* (which was originally envisioned as a collaboration with Goldsmith, and is incidentally being given away for free online by Harvard University Press) links copying to *copia*, the abundant style. Boon suggests that copies are "markers of the dangers of an excess that needs to be controlled."[132] For Boon, "Copia involves a movement of forms and energies that is antithetical to that of private property—from the point of view of form—inherently multiple, excessive, and abundant."[133] Boon argues for a complete overhaul of the existing global understanding of copyright and intellectual property, and he suggests that copia has a role to play in that process. For Erasmus, copia is synonymous with variety and plenitude. According to Ann Blair, "References to the abundance of books appeared well before the early modern period, whether cast favorably (as cornucopian abundance) or unfavorably (as overabundance)."[134] Copia recasts information abundance in favorable terms; famously, Erasmus offers two hundred variations on a single sentence. However much irony may have gone into his project, Erasmus was confident that language could be artfully constructed and systematically taught, in part by means of exercises. Erasmus values both *inventio* and *imitatio*, encouraging the artful use of commonplaces. Copia, in the sense of constrained variation, could also be considered an important technique of twentieth-century avant-garde writing, with Raymond Queneau's *Exercises in Style* serving as perhaps its best-known example.

As Bouvard and Pécuchet discover, archiving the results of their copying requires that they create a classification scheme: effective data storage necessitates the creation of effective metadata protocols. Drawing on Derrida, Dworkin writes that "by archiving books, the archive itself adds to their bibliographic information."[135] As Dan Graham's "Schema" (discussed in chapter 6) shows, every iteration of a text alters (if ever so slightly) its form—as well as creating (perhaps largely insignificant) new metadata about the conditions of its reception. In Derrida's description, the archive is ever expanding: "By incorporating the knowledge deployed in reference to it, the archive augments itself, engrosses itself, it gains in *auctoritatis*. But in the same stroke it loses the absolute and meta-textual authority it might claim to have. One will never be able to

objectivize it with no remainder. The archivist produces more archive, and that is why the archive is never closed."[136] This ever-expanding archive, I would suggest, has elicited an appropriately copious variety of responses. Contra Stein, there never will be "a history of every man and every woman," although it is conceivable that there is now recorded data about every American presently living—indeed, one might suggest that being an American citizen is legally the antithesis of being *sans papiers* (or the digital equivalent).[137] Stored data by itself does not constitute history, however. Stein's total history can only exist in a projected future, and Stein's notion of such a copious history requires a genius figure (herself) to process and filter historical information.

The technicization of memory—as in Kittler's description of an undifferentiated optical/digital media that will absorb all others—is sometimes taken to signal the death of the author as well as the death of literature.[138] Kittler writes that "under conditions of high technology, literature has nothing more to say. It ends in cryptograms that defy interpretation and permit only interception."[139] Against Kittler's pronouncement, poetries of information overload—by which I mean poetries (and poetics texts) that relate either formally or historically to information saturation—demonstrate an extraordinary range of innovative responses to changing technological conditions. Rather than accept posthistorical pessimism, the poetics of information overload show that there are many possible forms, as well as frames of reference, available to contemporary poetry. The kinds of poetry discussed in this book ask us to rethink our commonly held notions of literary meaning (what was there to say that can no longer be said?), our notions of communicative transparency (what is the difference between a difficult literary work and a cryptogram?), as well as our notions of personhood (how are we defined by our access to, and ownership of, information?). Much depends on our answers to these questions.

Poetry, that is, continues to have much to say—too much perhaps . . .