In this pdf you find all the original documents that Kenneth Cmiel left behind for his project on promiscuous knowledge, completed posthumously by John Durham Peters and published by the University of Chicago Press (2020). The only missing piece is not included here for copyright reasons. It was published as Kenneth Cmiel, "Drowning in Pictures," in The Columbia History of Post-World War II America, ed. Mark C. Carnes (New York: Columbia University Press, 2007), 36-56. This essay was incorporated into chapters 4 and 5 of Promiscuous Knowledge.

Some of the material included in this pdf is very raw and unpolished, of course, and surely nothing Cmiel would have wanted to show anybody but himself, but we provide it here to show the unique work-process of a unique mind and to present the originals from which the book Promiscuous Knowledge was forged.

Contents:
- p. 2 – Brief Description of the Book, prepared 2002 for a publisher, and incorporated partially into the Introduction
- p. 12 – Rough draft of chapter 1. Last edited 29 June 2002
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- p. 23 – Talk that became the basis of chapter 2, including sidebar on Frederick Douglass. Last edited 8 Jan 2002.
Kenneth Cmiel’s Original Documents for *Promiscuous Knowledge*

In this pdf you find all the original documents that Kenneth Cmiel left behind for his project on promiscuous knowledge, completed posthumously by John Durham Peters and published by the University of Chicago Press. Readers should refer to the PDF bookmarks to see descriptions of the items and of their origins. Dates are included for the last update, where we could find them. A blank page has been inserted between each original document.

We have not reproduced his original file names. Like many of us, Ken Cmiel had a quirky system and habits of capitalization, but some of his names give a good representation of his interests: *FACT1, image culture, informationtalk, PICTURES, POPULAR, promiscuous, science*. Just as in a paleontological exhibit it is important to know what is the original bone and what has been added by the museum presenters, we felt it was important for Ken’s original words to be archived and available for those who would like to go directly to the source. Many thanks to Mark F. Anderson for assistance in preparing this resource.

- p. 2 – Brief Description of the Book, prepared 2002 for a publisher, and incorporated partially into the Introduction
- p. 12 – Rough draft of chapter 1. Last edited 29 June 2002
- p. 19 – Very rough draft of an incomplete review essay of three books; provides context for the argument of chapter 1.
- p. 23 – Talk that became the basis of chapter 2, including sidebar on Frederick Douglass. Last edited 8 Jan 2002.
- p. 56 – Published review, with language incorporated into the Introduction and chapter 2.
- p. 60 – Rough outline of chapter 3.
- p. 63 – Unpublished paper comparing knowledge and information management in the 1940s, 1970s, and 1990s. 1940s material incorporated into chapter 3. 1970s material incorporated into chapter 6, especially the sidebar on Bell and Lyotard.
- p. 95 – Draft of a sidebar found on diskette in the Special Collections of the University of Iowa Libraries. Used in chapter 3.
- p. 97 – Supplementary materials on image culture used in chapters 4 and 5. Last edited 5 May 2003.
Description and Chapter Outline

This book will be a genealogy of the “information age,” in particular, how we think about fact, image, and knowledge. What Promiscuous Knowledge centers on the different ways that truth claims get complicated when they pass to a larger public. It is about information politics as a communication problem. The book emphasizes that we should understand “the information age” not so much in terms of new technology but as a set of new sensibilities about the flow of information and managerial practices. It is about shifting attitudes toward truth and authority, different “truth games,” as Wittgenstein called them. One special concern in the book is the erosion of firm boundary lines between formally produced knowledge and that asserted by either popular or outsider forces. This creates what I call “promiscuous knowledge,” a mix of the popular and professional. It is, I will argue, a key part of our information politics, a concept that helps us make sense of things as disparate as the Enola Gay controversy at the Smithsonian, ACT-UP’s incursion into AIDS research, the day trading of stocks on the internet, recent fights about expert testimony in courtrooms, and a Google search on the World Wide Web.

In order to better understand our recent past, I look back at different periods to explore the characteristic ways that people talk about information, knowledge, and images. The book will be a series of contrasts between these different historic moments. To keep the narrative manageable, I focus on three discrete periods of time – the 1870s and 1880s; 1925-1945; and the period between 1975 and the present. I will also start with an introductory chapter, mostly using secondary materials, which looks at these issues broadly in the seventeenth century. While I focus on these specific moments, I also freely mention transitions that take place outside these particular periods of time. This strategy is entirely pragmatic: I have well-defined moments that are markedly different to highlight the comparisons. I can allude to all the transitions in between without spending excessive time describing them. I want to emphasize the different configurations and produce a readable text.

It is a study of mainstream middle class cultural attitudes and practices. While comfortable with this, I am very aware of the pitfalls of this sort of history. The book will contain a whole string of sidebars, from several paragraphs to several pages long, that directly address the problems of those outside the mainstream. Not all of these sidebars have been chosen yet. These additions might be integrated into a chapter,

1 The word is “erosion,” not “erasure.” I am not arguing that these lines collapsed. I am arguing that formal knowledge communities face newly insistent challenges, and that these challenges have a decent chance of success. The boundaries have definitely not disappeared; there are more boundary disputes.

2 Do not read this precis with the impression that everything mentioned in the following pages will have an extended discussion. Many of the contrasts and examples noted in the various chapters will be treated briefly, in a paragraph or two. The goal is to try to produce a reader-friendly text.
Chapter 1 -- This will set up the basic tensions of later chapters. I use the work of various historians of science to explore the “invention” of the independent “fact” in the seventeenth century (Lorraine Daston, for example). But right from the beginning, there was the fear that facts could run out of control. I will briefly look at attitudes toward the nature’s abundance (Francis Bacon, for example); the explosion of new information about the natural world in the seventeenth century and the confusion that sometimes caused; and the problems of communicating knowledge outside a scholarly audience. I contrast the impulse to contain the potential unruliness of information by efforts to create generalizations built on fact, or “knowledge.” In general, I will introduce the tensions between a new science that is empirically rich and sprawling and a neo-classic search for synthetic order.

I will discuss how the new knowledge environment mattered for visual culture. On the one hand, different attitudes toward early museums (cabinets of curiosity) directly expressed the tension between empirical richness and the search for order. So did the new visual technology of learning, the microscope and telescope. On the other hand, this was also a moment of severe iconoclasm. This chapter will discuss the Protestant generated fear of the image as well as the contribution of visual knowledge to the new science. Finally, the chapter will discuss the Catholic defense of the image as a way to teach the common people.

Chapter II -- “Victorian Culture and the Diffusion of Learning”

This chapter will start by looking at the meaning of the Victorian phrase “diffusion of learning,” contrasting its nuances with those of the contemporary mantra: “the information age.” How Victorians (even American Victorians) hoped that a rich, deep flow of fact would circulate, harkening back to the empirical tradition of the seventeenth century. I will discuss both Horace Greeley’s newspapers and Baedeker’s travel guidebooks as examples.

The diffusion raised specific fears of information running out of control, as it did in the 1600s. The difference was that a much larger and diffuse public was now involved in discussing knowledge creation and dissemination. A string of new cultural initiatives of the 1870s each represent the desire to manage the flow. The birth of the modern legal casebook (Langdell’s textbook on contracts as the first example), the expansion of popular science journalism (Popular Science Monthly), and the invention of Melvil Dewey’s decimal system for libraries were all explicit responses to the fear of information chaos. All expressed characteristic Victorian confidence about both
continuing the dense flow of information and in successfully ordering it. I will also
discuss the characteristic museum display technique of the time – cases and cases of
specimens (“facts”) organized in conceptual rows, again the thick flow of fact neatly
arranged in order. This museum display was an attempt as synthesizing of the
Renaissance cabinet of curiosities (empirical richness) and the Enlightenment’s neo-
classic emphasis on categorization and order.

The chapter will also look at the explosion of reproduced images in the nineteenth
century. I will discuss the ways that the same fears about unruly facts tipped over to the
explosion of image creation in the second half of the nineteenth century, contrasting
increasing concern at the close of the century with the dream of an “encyclopedia of
images” expressed by Oliver Wendell Holmes, Sr. around 1860.3

Chapter 2 – Sidebars – (a) Frederick Douglass and the fact. Douglass was
counseled by white abolitionists to only speak of facts, not “moral knowledge.”
How Douglass tried to resist. (b) Emily Dickinson and vision. How Dickinson
cared about vision but hated photography. (c) A discussion of an 1886 dime
novel about a strong, successful female detective. How gender and truth work in
this working class publication, contrasting it (briefly) to the first Sherlock Holmes
story, which was published in an American magazine.

Chapter 3 – “A Culture of Summation, 1925-1945”

How worries about information overload generated a new series of responses
during the early twentieth century. A series of new strategies were developed to manage
the flow of information to the public. Synecdoche – the part for the whole – became a
central device used to minimize the crush of information. I will discuss this in the realm
of museum display (the turn to dioramas and smaller exhibits), in law (via the
“restatement of law” projects), in statistics (with the emergence of selective sampling
techniques and key indices of the nation’s economic health like the Gross National
Product or the national unemployment figure). In all these cases (and others), there was a
turn away from a dense presentation of fact to an effort to quickly summarize the whole.
“Representative” social studies like Middletown have a similar purpose, as did the culture
concept itself, at least when it first emerged during the 1920s and 1930s.

This new sensibility does not do away with information. It is not hostile to
science. It simply suggests that public presentation can be whittled down to a summary,
that the thick flow of fact the Victorians dreamt of is not necessary for public
consumption. There is a front room-back room distinction, with the work of information
gathering going on in the backroom and presented in simplified form to the public
without significant loss.

The chapter will close with a discussion of John Dewey’s late philosophy as a
meditation on this culture of summary.

Chapter 3 – Sidebars – (a) Discussion of leading text on Vietnam published
between the wars, looking at why the author claims that “Facts make little

3 I am considering breaking this material into two chapters but will make the decision as I write.
impression” on the Vietnamese mind. (b) How the hard-boiled detectives of *Black Mask*, the mystery magazine, had a different relationship to clues and evidence than did the more middle class fictional detectives of the day. (c) Walter Lang’s 1957 film, *Desk Set*, seen as a bridge to the information age. Looking at its portrayal of women (Katherine Hepburn) as “information providers” and men (Spencer Tracey) as “knowledge bearers.”

Chapter 4 – “The Age of the World Picture, 1925-1945”

The new attitudes put a premium on image. Summation often happened via pictures. This depends upon a certain attitude toward image – that images “sum up” a larger whole. I will discuss the ways that photojournalists and classic Hollywood directors (at least post-1934) understood images as summarizing larger myths and values, of the ways that “a picture is worth a thousand words.” I will also discuss the emergence of “iconology” in art history during the 1940s and new attitudes toward museum display which reflect similar attitudes. The work of Norman Rockwell will also be briefly considered.

But these attitudes raised a key question: did these images accurately capture larger truths? Did they actually did summarize “fact.” Photojournalists, moviemakers, and the builders of museum dioramas all had to confront the question of whether the new attitude to image-presentation was too fantastic. How great could the gap between image and information actually be? The celebrity photography of George Hummell (perfected around 1930) raised these issues in acute form.

I will look at critics who thought the new image culture was too sensationalistic, or deadening to the spirit, or too given to “unreal” fantasy. I will contrast 1930s and 1940s suspicions to the iconoclasm of the seventeenth-century (see Chapter 1) and to Plato’s ambiguous critique of images in *The Republic*. The chapter will close by considering Martin Heidegger’s “The Age of the World Picture” essay (first given as a lecture in 1938) in relation to these themes.

Chapter 4 – Sidebars – (a) A discussion of an African American artist who wanted to dignify the production of images of African Americans in the 1930s, probably the sculptor Augusta Savage but perhaps the photographer James Van Der Zee. (b) Robert Motherwell and abstractionism in the 1940s. The avant-garde as an alternative. (c) The philosopher Susanne Langer and photographer Margaret Bourke-White. Teasing out what they thought about images and women, despite the absence of a stated feminist sensibility. (d) Weegee. Looking at the celebrated tabloid photographer to indicate how working class crime imagery stood outside the main drift of the culture of summation.

This chapter will explore the breakdown of the culture of summation in the late twentieth century. Successful summary fades because new technology that creates more fragmented or spectacular images; because image creation as a partner in knowledge dissemination spreads; and because synecdoche as a means of visual presentation is increasingly distrusted.

The decreasing cost and increasing mobility of videotape is extraordinarily important for the proliferation of new images. So too is the rise of computerized imagery. Along with the emergence of computerized editing devices and satellite technology, videotape made possible, beginning in the mid-1970s, the modern system of pornography production, the music video, and the political sound bite. The images these media create sharply differ from the seamless editing of the classic Hollywood cinema or the synthetic drive of classic photojournalism. This technology also made coverage of the O.J. chase possible; it brought Rodney King to the nation’s attention. In Hollywood, the special effects revolution allowed, in many cases, spectacle to take over. The story was the special effects, in contrast to the myth-making centrality of classic Hollywood cinema.

Elsewhere in the culture, however, there was in the 1980s and 1990s increased respect for the notion that visuality was related to learning. Not just simplification, but actual learning. There is a huge growth of interest in visual intelligence among cognitive psychologists. I can’t move on my campus without hearing some administrator saying we have to be more “visual” for our students. This echo of Marshall McLuhan will be contrasted with early twentieth-century behavioralists who dismissed the image.

There is, finally, the significant debate about race, gender, and image. While on the one hand these fights have been going on for a long time, they become more prominent by the 1980s. Recent debates, I will argue, reflect declining faith in the “Culture of Summary.” It will no longer due to have a few white kids fishing stand in for “American Youth,” as in a Norman Rockwell portrait. Synecdoche is increasingly suspect. It is increasingly difficult for an image to capture the whole.

Chapter 5 – Sidebars – Not yet chosen.

Chapter 6 – “Promiscuous Knowledge, 1975-2000”

This chapter will start with the new cult of information in the late twentieth century. It will briefly survey a range of signs: popular culture phenomena like the game Trivial Pursuits or the USA Today coining the term “factoid”; the turn of public libraries to the “information sciences,” the evolution of sociological commentary on “the information age”; and the emergence of new forms of data research, culminating in those databases that now capture the purchasing habits of each of us individually. I will argue that we are returning to a moment that emphasizes the thick flow of fact, similar to the late nineteenth century.

What is different, however, is the loosening concern for the connection of “fact” to “knowledge.” Whether it be the latest stock quotes, the most recent reports of human rights abuses around the world, or the info needed to plan your summer vacation – it is
bundles of practical information, used for personal life projects that comes to the fore. While “knowledge” obviously still matters, “information flows” are most prominent.

While the turn to summary and image in the early twentieth century shored up the authority of professionals, this return to a thicker culture of fact was part of an unsettling of professional authority.4 Whether (for example) new internet chat rooms allowing heart patients to discuss their treatments without doctors being present or the emergence of day traders in the stock market – the new bundles of information do not necessarily support the authority of professionals. As early as the 1970s, the futurologist Alvin Toffler was saying this would be the case and public librarians were acting on it.

Broadly speaking, the new information flows have two very different uses. They are used in countless individual projects, at which point the ends personally empowering. I can get any music I want through Amazon.com even though there is no local store in Iowa City with a good selection. I can plan my vacation or follow my retirement portfolio through the World Wide Web. The data collection, however, also serves a new managerialism. University deans now have, at their fingertips, printouts of how many students faculty have enrolled in their classes for the past 5 years or so. Educational decisions are made on this information. Doctors find their suggestions overturned by HMO reps using risk-analysis data. Instead of professional autonomy, the mid-twentieth century goal, there is the management of professionals by new accounting procedures.

The erosion of professional authority without the collapse of the professions has created “promiscuous knowledge,” the blurring of formal and informal knowledge, of authoritative and popular learning. New technology did not create this situation; it just feeds into it. The inability of professionals to maintain boundaries is not new but it is newly important in our time and harkens back to the empirical sprawl of the seventeenth century. By focusing on a blurring of the line between professional and popular knowledge, I can link a string of phenomena often treated separately. Much of the chapter will actually deal with examples: The success of ACT-UP in affecting the research agenda of scientists working on AIDS; new attitudes toward expert witnesses promulgated in federal law during the 1970s; the numerous museum display controversies of the past generation, such as the fight between veterans’ groups and museum professionals in the Enola Gay controversy at the Smithsonian; the problem of internet pornography in public libraries – each reflects the intrusion of outsider sensibilities into the province of formal learning. This promiscuous knowledge is perhaps best captured by ruminating on the new search engines developed in the early 1990s – Yahoo and Google. In sharp comparison to the Dewey Decimal System of the 1870s which was explicitly designed to neatly categorize different “knowledges,” a Google or Yahoo search proceeds by entering piece of information (a keyword) that results in an utterly promiscuous mix of authoritative and popular knowledge; of truth and fantasy; trivia and substance, sobriety and sensationalism.

Chapter 6 – Sidebars – Not yet chosen.

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4 This obviously needs more extended discussion, which will be part of the book. For some recent literature on this, see Eliot Freidson, Professionalism: The Third Logic (University of Chicago Press, 2000); and Nikolas Rose, Powers of Freedom: Reframing Political Thought (Cambridge Univ. Press, 1999)
This is the age of information. The internet, World Wide Web, databases circling the
globe. Information saturates us. Yet this is also the age of the image. MTV, the Nike
swoosh, iconic sports heroes, the collapse of literature. An editor at one of the nation’s more
important weekly’s can write a book called “The Age of Missing Information.” And a
President of the Modern Language Association, the largest organization of English professors
in the country, can write that we are now entering into the age of “the image in all its
complexity.” So which is it? The age of information or image?

It is, of course, both. Moreover, they do not merely eye each other warily. Doctors,
architects, engineers, and scientists have long resisted the cliché of “information versus
image.” The arrival of CAT-scans and magnetic resonance imaging are only the latest
confirmations of this. On a completely different plain, the graphics of USA Today as well as
the jazzing up of more staid publications – the New York Times went color in 1997 -- hint at
the same. Image and information relate to each other in varied ways. I can’t turn around on
my campus without hearing someone talk about we have to become more visual, more digital,
with students.

Nor are contemporary relations the only possible ones. We can better see what our
own presumptions are by contrasting them with earlier times. That’s what I try to do in this
book. I’m interested in what the information age means by looking at how information and
image were discussed in the past.

Just a few years ago, here’s what people said about the information age: It was
liberating. Instant communication. Informazione cornecopia. Crusty bureaucracies would
crumble. Distance no longer mattered; nation-states an anachronism; the industrial age over.
Such was never the only story, but it was potent enough to support a blockbuster on the New
York Times best-seller list, Nicholas Negroponte’s Living Digital. It was the mantra of Wired
magazine.

We’ve heard similar tales before. They were told with the first tap of the telegraph,
the first radio crackle. They are stories spun when some communication media is so new that
utopia is believable, the buzz so hot that anything seems possible.

But with all new technology, this first moment passes. Within a few years, novelty
wears off and the machine slides to the quotidian. Poverty and sin continue to haunt us. Our
bodies still slowly fall apart. Then we need other tales.

In 2002, we seemed to get the new story. We discovered that analysts in the past few
years had been plugging stocks in public that they ridiculed in private. On top of that, the
morality tales of Enron, Arthur Andersen, and XXXXX convinced many that the accounting
numbers were fraud. The Journal of the American Medical Association devoted an issue to
the troubling problems of peer review, pointing out that too many investigators were not
reporting their connections with private corporations. In my own, less significant field, a
string of popular historians were brought down by charges of plagiarism or data fudging. One
of the great mid-nineties fans of information flows discovered that the internet was
instrumental in spreading the lie that 4,000 Jews were told to stay away from work at the
World Trade Center on September 11, 2001. By 2002, it was starting to look like the
misinformation age.

The wildest dreams of the computer age ended for good, I would guess, in the second
half of 2000, when the market bubble burst on the dot com mania. Yahoo, Intel, Amazon, and
dozens of others tumbled spectacularly, losing billions of dollars of paper worth. Start-ups in
the hundreds crumbled. At this point, the techno-utopian tale started to sound silly. The
information age would not usher in unlimited plenitude and happiness. It had not repealed
the business cycle. It had not made distance irrelevant. Now a new story would have to be told.

What can we say about the information age now that we are past giddy optimism?
Does the fact that we continue to die mean that nothing has changed? The information
infrastructure does indicate a new set of attitudes toward knowledge, information, and image.
Something has changed in the past generation. We are, in fact, moving into a new way of conceiving information and image.

Here are five points that I argue:

First, information overload, or “data smog,” as one recent writer calls it, is not a new problem. It is a constant theme from the seventeenth century. The acceleration of formal knowledge production in the 1600s immediately raised fears of facts-out-of-control.

Second, one important strain of modernity’s history is building containers to house that information. These containers – disciplines, authorities, journals, law, customs – have their own history. The most important container is something called “knowledge.” Whereas the common trope of modernity has been information versus ignorance, the stability of knowledge is always threatened by both superstition and unruly fact. Information threatens to undermine the comforts of knowledge.

Third, this is, at bottom, a communication problem. It is precisely at the point where knowledge moves out of its esoteric origins and to some exoteric and less disciplined social space, that the stakes get real. Galileo and the church, nineteenth-century knowledge trounced by the popular press, the contemporary expert testifying to a jury – the point where knowledge touches the outside is the crux. Managing knowledge often means dealing with the outside.

Fourth, one of the containers used to house information is “image.” The early twentieth century saw the explosion of an image culture that was new and which was central to an effort to portray knowledge in an orderly way to the public. The new technologies of the image were a way that mid-twentieth-century mass culture was build. The smooth seductiveness of the image was not only meant to house knowledge, it was also one of the “technologies of mass society.” The story of the late twentieth century is the increasing distrust of those images.

Finally, what is most characteristic about the information age is our willingness to ignore, or treat lightly, the containers of fact. Image is increasingly suspect on a number of fronts. Formally produced knowledge is also treated skeptically. The hermeneutics of suspicion reach beyond the academy into popular culture, newspapers, and courts of law. But neither professionals nor formal knowledge have been summarily dismissed. Instead, the “information explosion” is a way for individuals to manage their own lives, without the tyranny of professionals. It is not at all that simple, of course, and in the closing chapters I will have more to say on this. But the basic point is this: What we call the “information age” is actually the mix of distrust and dependency – on images, on knowledge. Rather than see digital culture as the apotheosis of the Enlightenment, its grotesque or ultimate success, the information age is the triumph of fuzzy logic, of information loosened – but not freed – from one of modernity’s great stabilizers – knowledge.

This is a book of synthesis, based on teaching, research, and thinking about these issues for the past decade. Academic colleagues will see many of their works in footnotes. I thank them all. One thing I am trying to do is bring together various monographs and essays that have dealt with these issues in different ways.

My first book had a lot of facts, too many to make it readable. The second was pared down a bit. This, my third try, has fewer facts still. I’m trying, in my own pathetic way, to put my energy into the writing, having finally figured out that brevity makes a better read. Of course, this is part of the hype of the hypertext age: Keep it short! Add some pictures! But after having written a book on a very depressing subject last time, and working on another sober book right now, I appreciate the lightness and whimsy that this culture spins at its best. On some days, I’d like to keep going this way, each project having fewer and fewer facts, until, like the well-known cat, all that’s left is the grin.
Chapter 1 – Warning Horatio

Facts and Pictures

There are a few stories commonly told about facts. Facts, goes one, are building blocks. They are bricks, carefully set next to each other, used to make something grander – knowledge. We patiently collect our facts, cement them together and end with a sturdy, elegant edifice that shines with all the strength and power of truth. This is the story of positivism.

An alternate story is this: “Facts” are not things we find, discover, or collect. They are something we make. They do not create anything so real as “truth,” they are rather social conventions used to prop up pre-existing worldviews. The facts we highlight are defined by culture. “There are no ‘facts-in-themselves’,,” thought Nietzsche, “for a sense must always be projected into them before there can be ‘facts’.”1 This is the story of what today is most commonly known as “social constructionism.”

These stories, underneath it all, are not so very different. Think of them as the Cain and Abel stories about facts. For though they hate each other, they’re still siblings. Both reduce facts to a one-dimensional supporting role. Facts are only there to prop up a larger story about the world. It is just that in one story (Cain’s or Abel’s? You pick…) these facts are true and in the other they’re fiction. In one story they build “knowledge” while in the other they are “social constructs.” But “facts” play the same, simple-minded clod in each of these morality plays.

But facts (and information) are so much more than this. Even in the Western intellectual tradition their meaning is richly varied. Kant used two different terms for “facts” and their meanings shifted from critique to critique.2 Ludwig Wittgenstein, famously, started the Tractatus by contrasting “facts” and “the world.” Vico distinguished factum (the past participle of facere, to do, close in meaning to “deed”) and verum (the truth), a contrast he borrowed from the ancients.

The flatness of our two reflex stories about facts misses the multitude of ways they work in the world. Facts build knowledge, but they also keep us informed of events, entertain us as trivia, and pragmatically help us navigate our lifeworlds. Bus schedules are, or should be, bundles of fact. Facts can be stable or unstable. Some of those stable ones will certainly turn out to be untrue. Between the twelfth and seventeenth centuries, many Europeans were dead sure that beyond the world of Islam there was a thriving region of Christians ruled by Prester John. More recently, and more grimly, millions were convinced that the Protocols of Zion were “fact.”

Both the social constructionist and positivist stories also accept that facts try to be cold, calculating, and neutral. In fact, facts have a rainbow of emotional tints. To hear some

day that the Chicago Cubs have won a World Series (a claim with a Prester John-like ring to it) would be a fact not neutral and flat but one reigning joy down on the long suffering. Facts can be exciting, troubling, wondrous. They can stoke outrage. We can cling to a fact desperately. (“She loves me.”) Their emotion can work behind our backs. In my first book, I orgied on facts, piling example on top of example, arranging them with all the stupendous boredom of run-of-the-mill porn. (Making that book, I might add, even less inviting to read than porn is to watch!) Was this my own positivism peeking through? By all means, no. Even then I had no faith in the mantra. It was, rather, my own insecurity. If I piled on the examples, I reasoned, no one could complain that I didn’t know what I was talking about. The facts in that book were coupled in boring and unholy ways to protect me. This mind-numbing orgy of information was not rolled out in the service of positivism, but as the nervous defense mechanism of a first-time author. I was not doing science; I was building a fort.

I am not a positivist. I do not believe that “facts” are out there. I do not believe they are simply “found” or “discovered” by researchers. The old Latin factum, fact as something made, has a lot to be said for it. But I am not a social constructionist, either, at least not the way that term is often used. Facts are not basically fictional (although some things we accept as fact might very well be wrong). Instead, “fact” is a “pointer word.” We name something a “fact,” in science, law, or everyday life, when we want to point it out, take it out of the flow of experience to mark for perusal. Those things we deem “facts” sit between knowledge, or cultural pictures of the world, or our own metaphysical certainties on the one side, and the dirt, dust, wood, and pain all around us on the other. They are a bridge from the latter to the former. Facts are made, then, but not necessarily fiction. If I go to the New Pioneer Co-op at 2:00 am, it will be closed. That’s a fact.

Facts whose sole mission is to prop up larger stories (either “knowledge” or “social construction”) also leave little room for ambiguity or confusion. Particulars get folded into their narratives as neatly as shirts at the laundry. Even as smart a philosopher as Paul Feyerabend thought, at one point in his career, that there was no such thing as “bare facts.” All, he thought, were saturated with theory, “essentially ideational.” This classic version of social constructionism led Feyerabend to picture Galileo as using his facts to tell a story about the cosmos that was well formed right from the start. Galileo, according to Feyerabend, was smart and canny, but he was not confused. The problem with this is that for several years around 1610, Galileo was confused. He stared into his telescope, looked toward Saturn, and did not always see the same thing. Sometimes he saw three objects in a row. Sometimes he complained about his instrument. Finally, he drew a planet circled by rings. For a while, Galileo wasn’t sure what it was adding up to.

Facts unable to fit easily into larger stories help create ambiguity. This is not incidental to my argument. It is its core, a central starting point, and one, I might add, that owes much to Feyerabund’s later ruminations. Ambiguity points to the impossibility of all facts being explained by either social constructionism or positive knowledge. Facts always have the possibility of being excessive. They can escape their containers. Scientism is most wrong whenever it takes this hypertrophic form: “Science can explain everything in the universe.” (Most scientists, I would venture, do not mouth this platitude.)

“There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy.” Hamlet’s famous advice, remember, came on the heels of seeing a ghost. All my heroes have thought something like this. Epicurus, Montaigne, Walt Whitman, William James, and of a more recent vintage – Feyerabend, Ian Hacking, Italo Calvino. The key is not

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5 For Feyerabend’s picture of Galileo, see Ibid., passim.; but for a more ambiguous picture of Galileo, see Umberto Eco, Kant and the Platypus (New York: Harcourt, Brace &Co., 1997) 359-60.
to hate science at all, but to preserve the outside. The universe is a wondrous place, so much of it happily eluding our understanding.

Images have just the opposite rap. Instead of being simple-minded clots, it’s easy to picture them as dark and complex. They are the noir of intellectual history, the femme fatale of thought. Their ability to manipulate us is taken for granted. (Usually this ludicrously is presented by intellectuals as their ability to manipulate others.) We are obsessive about them. They transfix, overpower, us.

The intellectuals and the preachers, on this at least, often agree. Images are treacherous and seductive, something to distrust. “The visible,” Frederic Jameson asserts in one of his more remarkable sentences, “is essentially pornographic…”6 This is its own form of simple-mindedness. Images don’t just trick us. They don’t just obsess us. They aren’t essentially pornographic. MRIs and CAT-scans provide crucial information. I am proud, not embarrassed, to carry pictures of my kids when I’m out of town. I enjoy moments of beauty in movies. To rub all this down to the obsessive is to make the common error -- mistaking the part for the whole. There are more things in heaven and earth, Frederic Jameson, than are dreamt of in your philosophy.7

Yet if images are seen as working darkly on us, they are also often presented as having simple messages. Pictures sum something up. They are iconic, capturing the essence of a moment in time [ADD: picture of Kent State massacre], a myth [ADD: Picture of Dimaggio swinging], a nation [ADD: a Norman Rockwell picture]. One symptom of the aesthetic, the philosopher Nelson Goodman once argued, was its “ability to exemplify.” This is the visual version of social constructionism.8

But, once again, this ignores Hamlet’s truth. “The whole world is too much for an image,” Jean-Luc Goddard noted late in his career, a recognition that no image could completely “capture” an essence.9 There is always the outside.

Viewers, moreover, understand the icons differently. Ahh, yes, a moment in time – but playful, oppressive, or pathetic? [ADD: Picture of Marilyn Monroe on the subway grate, Seven-Year Itch] The answer depends on where in the picture your eyes wander and what you make of it.

Within a picture, moreover, as Roland Barthes once so shrewdly noted, there was always excess. It was the detail, Barthes thought, that draws our eyes, that suggests something more than the caption, the received interpretation. Detail, in other words, intrudes on simply having pictures stand if for some social meaning – social constructionism again. They are more than their summations. Images exceed words.

Both information and image have multiple uses. They are evil and beautiful, sentimental and cynical. They can be as hard as a club or as tender as a caress. And both are excessive – tumbling out of the containers we try hold them in, escaping those the frames we use to manage our lives. Image and information can both either confirm or unsettle. Facts and pictures do make knowledge and serve as metaphors of our prejudices -- but they also reveal ambiguity and confusion, and persistently testify to the abundance of the world.

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6 Frederic Jameson, Signatures of the Visible (London, 1990) 1. The whole sentence reads: The visible is essentially pornographic, which is to say that it has its end in rapt, mindless fascination; thinking about its attributes becomes an adjunct to that, if it is unwilling to betray its object.” Jameson associates “pornography” with the obsessive and not necessarily with the sexual. Note, too, that he sees images as somehow pulling us away from critical thought.7 Alberto Manguel gets it much better than Jamieson in his beautiful Reading Pictures. Images, for Manguel, can be stories, absences, riddles, nightmare, violence, philosophy and more. See Manguel, Reading Pictures (New York: Knopf, 2000).
8 Nelson Goodman, Languages of Art (Indianapolis: Bobbs-Merrill Co., 1968) 253-54. For his lengthier discussion of exemplification as sampling and labeling, see pp. 52-67.
The Two Modernities

In the 1600s, the modern fact elbowed into European civilizations. The modern fact was a thing – a datum, piece of information, a specimen. It was, to use Loarraine Daston’s useful phrase, a “nugget of experience.” Most importantly, it was a nugget set free from theory. It stood on its own. Modern facts are “notoriously inert – ‘angular’, ‘stubborn,’ or even ‘nasty’ in their resistance to interpretation and inference.” [daston, marv.facts, 93] There had been particulars before, and a healthy debate about them was strung through 13th and 14th century philosophy – but for most informed commentators their value separate from some classification was minimal. Aristotle disdained facts free of larger explanations. So did Aquinas. For them particulars were meant to explain generalities. Seventeenth-century empiricists, men like Francis Bacon, Robert Boyle, or XXXXXX, wanted to advance science by making more disciplined forays into singular. This was one way to smash Aristotle.

There was an earlier distinction between “matters of fact” and “matters of law,” implying the split between fact and theory. Originating in Roman law and then lost in the ensuing age, this distinction reemerged in the thirteenth century. By the 1300s it was well known to lawyers. Yet this was not yet the modern fact. The Roman factum referred not to something found in the world but to something done by humans. When Hobbes referred to “the fact doing” in his Leviathan, he was using this older meaning. For the lawyers, “matters of fact” related to action, and often specifically to criminal action. These were the common 14th century meanings. The seventeenth-century fact stood on its own, defiant, resistant to theory. There was more than a bit of the macho in it. [on the distinction bt fcts and eidence, daston, marv f, 93] [on the general meaning as something done, shapiro, 10]

In every European language, the new meaning of “fact” emerges in the 16th and 17th century. The Italian XXXXX, German Tagsbuche, and French fait all gather new meaning. The first example of the modern meaning of fact in the Oxford English Dictionary is 1632. All these terms move to the core of the new fact – an independent bit of experience; something in the world as well as something humanly done.

The new fact was linked to new ideas of “experience.” The historian Peter Dear has charted the shift from experience understood as the usual pattern of nature to being a unique phenomenon, one often induced by human beings in a laboratory. This individualizing of experience is especially important for freeing up the idea of the modern fact.

The paradigmatic modern “fact” was that of naturalists, astronomers, men of science. Yet it also represented a new sensibility, one that found astonishing value in collecting information. Double-entry bookkeeping, actuarial tables, newspapers – a host of ways that compilations of fact emerged.

A current generation of historians has tried to unsettle older notions of the “scientific revolution,” which generally told the story of a colossal seventeenth-century sea change in which the modern replaced the medieval, science fought superstition. A few have suggested getting rid of the phrase “scientific revolution” altogether. After all, it wasn’t coined until the 1880s. While that hasn’t happened, the new science of the seventeenth century is now seen as more complicated, less fully formed than previously thought. The old and new mixed and the new wasn’t quite “our” new, its partisans not yet exactly “us.” Isaac Newton cared about alchemy. Francis Bacon devoted considerable attention to monsters. The great chemist Robert Boyle thought amulets containing pulverized toad and the first menstrual blood of virgins, worn with the moon at the right phase, would counteract a string of different diseases. [golub, 52-53]

If contemporary stories of both positivism and social constructionism indicate a neat fit of fact and theory, seventeenth-century empiricism complicates this. Like so much else in the scientific revolution, the seventeenth-century fact was modern, but not “our” modern. Facts roamed free of theory, aggressively so. At its birth, modern empiricism was sprawling, unsteady, careening. There was no good fit of fact and theory.

There was so much new information. Travels to distant parts of the world gradually exploded old ideas about the natural world. Who could catalogue all the flora and fauna of
Africa, Asia, and the New World? The telescope made the literate aware of an infinite universe. This information inevitably flopped outside the Aristotelian corset.

The microscope, another seventeenth-century invention, drew similar comment. We now “behold almost as great a variety of Creatures as we were able before to reckon up in the whole Universe itself,” thought Robert Hooke [hooke, “Preface,” np]. The great Dutch scientist-obsessive, Antoni van Leeuwenhoek stared into his microscope for a quarter century, seeing strange things, half animal, half plant. They were everywhere, in the rain, on our clothes, in our food... “more animals living in the scum on the teeth in a man’s mouth than there are men in the whole kingdom.” [Golub, 52] In 1678 he practically scared himself, seeing “living creatures” in the thousands all “moving about” a drop of semen no bigger than “a grain of sand.” [wilson, 132]. What could anyone make of this?

Not only were there so many new facts. Like Leewenhoek’s little animals, they were all too often strange. Fact and fantastic were not yet enemies. Lorraine Daston, the most important student of the 17th century empiricism, has uncovered the centrality of the “strange fact” to the new science. It was the emptying of the category of the preternatural, Daston argues, which was so important for the emergence of the culture of fact. With “experience” now understood, ...Freaks of nature, human and not, were of critical importance yet they defied easy explanation. The early modern fact of natural science locked on the weird.

Given that so many of the new facts were monstrosities, weird freaks of nature, they proved maddeningly difficult to replicate. But instruments were new; conventions for their use not established. Unlike our own sense of “the fact,” these were fleeting. Thomas Sprat, publicist for the XxxxxX, had to admit that experiments were “often various and inconsistent,” even “in the hands...of the same Triers.”[shapiro, 129] New facts were stubborn, the historian Daston notes, not because they were solid “but because they resisted explanation.” [dast,mor.econ, 16]

Natural science would never get to the precision of mathematics. Robert Boyle thought. Chemical materials could never be free of indosyncracy. Since there was no such thing as “pure” air, he reasoned, a scientist could never get to a lawlike understanding of XxxxxX. Atmosphere changed things. Boyle loved testing hypothesis but he dismissed the idea of a “law of nature.”

Despite the love of fact, because of the new abundance, partisans of modern natural philosophy could wind up repeating the Epicurean chant: the universe was more than we could know. “The subtlety of nature,” according to Francis Bacon, was “greater many times over than the subtlety of the senses and understanding.” [wilson, 41]

Nowhere is the sprawling empiricism of the era more evident than in the proto-museums of the time, the cabinets of curiosities.

Communication issue. Galileo and the church. Cabinets and the aristocrats.... How to trust the new research you only read about.

Loose fact, uncertain fact, detailed fact, abundant fact – the tie between fact and theory was by no means steady in the seventeenth century. The positivist saw fails here, because there was no firm link between fact and explanation, and because the fact itself was so insecure. Yet despite the insecurity, the number of facts was becoming wondrous in itself, helping to overwhelm Aristotelian categories. They were on the cusp of something new, they were learning new things, even if this was not yet disciplined.

Sense of facts out of control..... Aristotelians could not take these “monstrous facts,” as he they said. Certain partisans of the new, however, such as

Hans Blumenberg notes the ubiquitous metaphors of “sea voyage and the discovery of unkown lands,” to describe the new knowledge, showing how problematic it was to orient yourself “in
Yet if empiricism was sprawling, hard for humans to control, this was not a problem. Friends had several strategies.

First was faith in the future…. Hooke
Second was institutional practice…. The experiment; the book

Third was reason…. A whole body of learning that might not Descartes….. lone guy, by himself,… skeptical of experiments….But others, Leibnitz, XXX, and XXX, used brainpower to try to order it all. Just getting the basics down straight, according to Leibnitz, might help us separate the “XXXXXXXX.”

But still another response was some blend of reason and fact. While Robert Boyle ignored the “laws of nature,” and Robert Hooke was willing to put them off to some distant future, Francis Bacon, the first ideologue of the “strange fact,” believed the weird should be folded into new categories. He was not a simple empiric.

Other scientists had great respect for building order. Galileo wrote of the “laws” of motion, the “laws” of the planets. Newton did not choose between empiricism and algebra. Both contributed to his understanding of the basic laws of gravity.

But by the early 18th century, there was a new sense of order. Here … of balance….

The gap between knowledge and wonder…… Facts now became valued for their part in a grid. That grid was elegant, organized, free of the mess. The new museum, the new encyclopedia, Lamarck as well…… Get Daston,

Here then were the two modernities, one sprawling, empirical, more in love with the fact than its place. The other nervous about excess; comfortable with order. The first was interesting, unreliable, a bit voracious – there is the danger of gluttony there, getting fat on a diet of rich, new fact. Where would this lead – the empirical gout perhaps. No wonder Descartes rolled his eyes. More than the stereotyped Gallic shrug, it was disdain for the merely empiric.
We’re now drowning in pictures. The orgy of visual reproduction has steady built in intensity over the past one hundred and fifty years. Each generation has had its own ways to add to the visual cacophony -- the daguerrotype and negative XXXXX tone at one point, the half tone and kodak at the turn of the century, photojournalism at still another point. In our own time, the emergence of satellites, digital reproduction, and videotape has done more to add to the orgy. To take just one example, digital culture and videotape have really done much to make the pornography industry as we know it possible. Indeed, orgy may be exactly the right word, even if it is only an orgy of males simultaneously masterbating at computer screens scattered around the globe.

Still another change in the past generation. There has been an explosion of writing about visual culture in the academy. In discipline after discipline, reticence about studying pictures has disappeared. A study by the American Council of Learned Societies notes a XXXXXXXXXXXXXXXXXXXXX in the number of humanistic studies about visual culture. We are not only drowning in picutes. Today we are drowing in writing about pictures.

The books under review here are a sample of the range of writing now being done on visual culture. The authors are philosophers, art historians, artists, and XXXXXX. They write about art photography, advertising images, movies, medical imaging, and, of course, television. They write about how philosophers thought about perception, about how women were looked at in turn-of-the-century Chicago, about . Their politics span from the center to the left (no Republican allowed, or at least they have to be in the closet.) There are feminists, Lacanians, straightforward liberals, XXXXXXXX. It is no longer a question of finding stuff written on visual culture. It is a question of sorting through it all to see what might be useful.

Burgin’s book has the classic negatives of his type. This is a book written for the faithful. It makes no effort to convince, or help along, those not already in the club. If you don’t know Lacan this book will not help you. It will either confuse you and make you feel inadequate for not being au courant. Or it will infuriate you because of its categorical statements about all sorts of psychoanalytic theory not backed up with either argument or evidence. Freud, by the way, did not write this way. Nor does a contemporary Freudian like Jonathan Lear. This book is a mix of fine insights and dogmatically stated assertions. It will be a valuable addition to the literature of those who already believe. It will convert no one.

The manner of execution is especially disappointing because In/Different Spaces is the only book under review here which makes any effort to see the dark side of our
psyches. Other books suggest the “evils” that visual culture may work on us. But Burgin suggests something else -- the dark dimension inside of us all. He has taken this Augustinian theme and reworked it in a Lacanian idiom -- it is not that we are all sinners but that there is a basic “lack” in all of us that we work out in Freudian terms. Although suspicious of many of Burgin’s categorical assertions about the “mirror” stage, I still found myself drawn to the basic perspective. It becomes one of the striking things about late twentieth-century intellectual life that ADD MORE ON HOW THIS INFORMS HIS UNDERSTANDING OF VISUAL CULTURE...... EXAMPLES......

In the end, Stafford adds three important things to our understanding of pictures. First is simply her subject matter. Stafford wants us to understand that visual culture is more than tv, photography, and cinema. It is the X-ray as well, and the MRI and the XXXX. “Images” do not merely shape our subconscious, or form collective delusions. They also cure sicknesses, and are means through which we navigate our computers. It is not just “visualization” for her, but visualization of knowledge. Stafford’s is a useful call to expand our sense of what visual culture actually is.

Second is her stated problem -- the relationship between words and pictures is a strange one, and one that changes over time. If I don’t entirely agree with her view that the change that opened up in the eighteenth century is simply pushed along to the present, I appreciate her raising the tricky problem. It certainly is one that deserves a lot of attention. Why, for instance, is talking about pederasty on an IRC protected as free speech but passing a picture of sex with a child, in any forum, against the law. The sense that pictures are more powerful than words seems to be common sense, yet Stafford shows that this has a history and that the divorce between pictures and knowledge is an important part of this.

Finally, there is Stafford’s attitude. She is unabashed in her love of imagery, her sense that it does some good things. She argues against the deep negativity of much writing on the image. Indeed, as the other books under review suggest, the dominant perspective is to be critical of images, their use, and image making. Image-making for a number of authors in Sites of Vision is a way to establish power, building on Foucault’s view of the disciplinary gaze. Bordo sees images as overwhelmingly oppressing women.

Much of this is correct. Yet, as Stafford notes, it leaves aside certain dimensions of our visual culture. And it continues to perpetuate the sense that knowledge is somehow opposed to image. Martin Jay has recently noted that poststructuralism’s attitude toward visual culture is two-faced. On one side it staggars along with the “hypertropy” of visuality; on the other it remains suspicious of visuality. This is true for much recent writing on visual culture, although there are huge and notable exceptions -- Roland Barthes for instance. There is Stafford’s main objection to postmodern writing.

Perhaps I want it both ways. Stafford’s call to remember the diversity of images and the celebratory dimension of images is bracing given the ritualistic quality of so much critical academic writing. Yet by itself it is a bit Panglossian. Burgin’s recognition of the ways that pictures are filtered through deep fissures inside of all of us, fissures generally opaque to us, also. The trick, I suppose, is trying to keep these perspectives in creative tension.
Burgin, In/Different Spaces
Andrew book with John and Lauren
Stafford, Good Looking
Bordo, Twilight Zones
weirdo book by aperture gang
?
THE THICK FLOW OF FACT

We live in the age of information overload. Scientists can’t keep up, "The Chronicle of Higher Education" tells us in a cover story a few weeks ago. “There is too much information,” a radical-scholar activists notes elsewhere. We need better stories to sort this out. Ours is a time of “data smog,” reports still a third observer. We need to spend more time in civic discussion.

Scientists are “drowning in a sea of data,” the sociologist Bruno Latour notes. “I too,” he adds, “have this problem.” *(Pandora’s Box, 39)*

I am interested in the phenomenon of information overload. But I find nothing new in this. In fact, the fear of information running out of control is a steady theme leading back to the 17th century. The voyages of Europeans around the world led to an explosion of new information about the natural world, the telescope told all sorts of new things about the cosmos, the microscope expanded our knowledge of what was right around us. There were those concerned about the new rush of fact. Descartes, for example, refused to read reports of new research. He didn’t want it to clutter his evolving philosophical position. Ever since the seventeenth century, there have been those concerned, fretting, worried about the flood of new information.

The story is not the information explosion itself, but how we respond to it. The more interesting history lurks in how culture’s try to manage and organize the flow of fact. That is the book that I am writing. Seen in this light, the core of the contemporary information age is neither the new
cornicopia of information nor that it’s nothing new (we’ve had it since the seventeenth century). The contemporary is marked by its attitude toward information.

What I am going to concentrate on today is the mid and late nineteenth century portion of my story. I start by telling a simple, familiar tale – the classic story of positivism – that facts add up to make knowledge. But that is a boring, well-known story. I will go on to complicate it in four ways. First, by noting the anxieties about that story right in the heart of the culture and noting new practices in the 1870s, in law schools, libraries, journalism, and museums, that all reflected a new way to manage the flow of information. Scholars like Lorraine Daston, Peter Galison, and Theodore Porter have all argued that there is a history to the notion of objectivity. Rather than praising or burying objectivity, we should be unpacking its practices. I would like to join with them and suggest that one source for this history in the nineteenth century was the overproduction of fact and the lack of institutions to manage it.

Then I will quickly go on and make a few more points by contrasting this world with others. First, I want to suggest the racialized character of this regime by looking at the trials and tribulations of Frederick Douglass. Second, I will suggest how this late nineteenth-century “truth game” (to borrow Wittgenstein’s useful term) contrasts with concerns of the seventeenth century and our own time.
During the nineteenth century, the Western world was filling up. New wonders dazzled at every turn -- the railroad one day, anesthesia the next, the light bulb on still another. And on top of this, everything could now be made in numbers fantastic to the imagination. Clothes, furniture, bibelots, daguerreotypes, books -- the sheer quantity of things now cluttering a life was stunning. These marvels touched a surprising swath of the population, of course to different degrees. The working class was left out in shocking ways. Clearly, the bourgeoisie had the best of it. By the last decades of the century, their interiors reached saturation point, brimming with knick-knacks, photos, rugs, lamps, and more.

In this age of proliferating things some of the things proliferating most quickly were facts. The amount of information circulating in 1900 would astound the reflective observer. Whole new sciences surfaced with each new decade. Statistics were kept on a magnitude dwarfing previous efforts. Over the course of the century all sorts of things which used to be moralized over fell under the regime of knowledge -- cholera, homosexuality, and the human memory, to name just three.

There was an information revolution in the early years of the century. Scholars like Richard Brown, Richard John, and Daniel Hardrick have traced the explosion in the growth and diffusion of information in the eighteenth and
early nineteenth century. Increased public schooling, the penny press, the
rising number of books and pamphlets printed, the post office. All this made
for an extremely rich information setting by the middle of the nineteenth
century. Let me just mention two facts. In 1800, it was very tough to get print
material from one part of the United States to another. By 1830, there were
post offices everywhere, more than five times as many as in France. In 1800
there was, on average, 100 dictionaries published per decade. By 1840 it was
300 per decade.

To a hard-edged Yankee newspaperman like Horace Greeley, this
simultaneous filling up of the world with things and facts were part of a single
package. It was called “progress.” In the middle decades of the century,
Greeley was the editor of the best known newspaper in the United States, the
New York Tribune. Always ready to give an opinion, and be sure of it, rare in
history has the match between temperament and career fit so well as with
Greeley. By his own 1860 count, the Tribune sold more than 300,000 issues
daily (April 10, 1860), not counting a weekly midwest edition that brought his
wisdom to the farms of Ohio, Illinois, Wisconsin, Kansas, Iowa, and Illinois.

Greeley epitimized mid-century Yankee ideas about knowledge. He
loved facts, was ecstatic about useful learning. Greeley prepared for his tenure
as the nation’s most influential and notorious opinion-giver by working hard
and learning things, as much as he could. He had only intermittent formal
schooling but school was but a small part of his education. He poured over
elementary textbooks at home, studying Caleb Bingham’s Columbian Orator
till the pages frayed. He declared war on the mistaken platitudes in Lindley Murray’s grammar of the English language, perhaps the most famous schoolbook of the day. But he was also out of bed at dawn to “ride horse to plough” and apprenticed to a Vermont newspaper at age 15. Such experience taught him a lesson he tried to never forget -- that “this is a world of hard work.” As an adult, even while he derided the uselessness of so much contemporary schooling he never failed to sing of the beauties of practical knowledge. Not “from our panting ranks will ever arise the cry that solid and symmetric Learning is a boon to be rejected or lightly prized!”

There was, even after Darwin, a rock-hard faith that knowledge was order. We should not minimize the scale these Victorians thought on: “Order reigns in the universe,” lectured the future president James A. Garfield in 1869. Recent advances in the science of statistics only confirmed to him that “the world is a cosmos, and not a chaos.”

In this Yankee schema, “facts” or “specimens,” simple bits of information, had a specific role. They were the beginning of learning but not the end. Words like science, knowledge, and learning referred to the larger principles and relations stemming from fact and the reflection upon it. The steady and uncritical use of the phrase “laws of knowledge” in these years suggested the order inherent in knowledge and the importance of being more than a simple empiric, more than a gatherer of fact. Facts were not random, or at least they shouldn’t be random. Nor should they have a life of their own. They were drops in the river of knowledge, both nourishment for science and
parasitic on it at the same time. “Every science is made up of an immense number of facts,” wrote a typical commentator. But at the same time, commentators warned against unbridled empiricism: “We must never forget,” the British photographer William Talbot observed, “that it is principles, not phenomena – laws, not isolated independent facts – which are the objects of inquiry to the natural philosopher.”

Victorians filled their world with many things. Facts were one of them. Because they were the stuff of “knowledge” proper, the forces of sobriety pursued them with a zeal uncommon in history. Huge doses of information were commonly spread out in the most widely read journals. Information about relatively technical things was not for specialists only. It was what diffusion meant in practice. This operational aesthetic, as it has been called, turned on a spiget of fact to the general public.

Greeley’s Tribune gives one example. So impressed was the editor by the Crystal Palace exhibition that he devoted over a hundred pages of his paper to it. Greeley editorialized about the politics of the exhibition, of course; but he also sent reporters to describe the wonders in magnificent detail. Some twenty essays were published in the Tribune, each filled with extraordinary descriptions of some of the most significant inventions of the day. These essays relish the particular; lingering on technical descriptions. It is impossible to imagine any newspaper of our day doing this sort of reporting. I will spare you examples here, of numbingly detailed descriptions of the latest plows, photographic equipment, guns, sculpture, and other technology. All
graced Greeley’s *Tribune*. Suffice it to say here that they are long, extraordinarily detailed, and do not forget that they are for a newspaper sold to a middling audience.

One could similarly look at any of the Baedeker guides of the day and find the same detail, detail overwhelming compared to the best-selling bourgeois guidebooks of our time – the Eyewitness series. Karl Baedeker had started producing German-language travel guidebooks in the early 1830s. When he died in 1859, from overwork, his three sons took over the business. Looking to expand, they began publishing translations. The first English language *Baedeker* appeared in 1861. Dozens were published in the following decades. This was easily the most common and companionable guide available to an American travelling in Europe or the Near East, and, by the early twentieth century, Africa and Asia.²

To stare at a page of a Baedeker’s guidebook is to be drawn into a world lying outside the realm of visual comfort. The type pushes to the edges of the page. There is a minimum of white space. The print is horribly tiny. How many bourgeois went blind thanks to the Baedeker sons is a point worth pondering.

But if these books did not delight the eye, they were cramped with fact. Thousands of them jammed into each little X by X package, the size of a typical Victorian Baedeker. Imagine it cumulatively. On page after page for 350 to 450 pages there was a mix of flat information and dogmatic aesthetic judgment, in that positively minuscule type, with information clearly, very
clearly, dominating. Baedeker’s tried to inform you of nearly every nook and cranny you might wander in.

Yet if loaded with fact, there was nothing in the way of orientation. Each *Baedeker’s* was a massive pile of particulars. These books were without overview, summation, mood; there was no wit or whimsy. Of course, it was not that everyone was to commit all these facts to memory. Rather, they were necessary so travelers could make their *own* summaries. Baedeker senior declared that his guides were meant to save travelers from “the unpleasant tutelage of hired servants and guides.” *Baedeker’s* helped the traveler stand “on his *own* feet,” putting him where “he may receive his own impressions with clear eyes and lively heart.” (quoted in “Baedeker’s Universe,” 187-88)

Passing on that thick river of fact would free travelers to make their own judgments. This was theme voiced by Greeley as well as Baedecker. This combination of copious fact and individual assessment was a common theme in mid-century Yankee culture. Facts were prized possessions, the basis of those sciences that were becoming more powerful with each passing day, the basis of informed judgment about distant civilizations.

Yet a danger lurked in this arrangement. What if the rush of “fact” spilled out of the riverbed? If they flooded the civilization, destroying the order of systematic learning? After all, as one popular writers said in the 1850s, each science needed “an immense number of facts” (Dick, 34). And what if evil people stole those facts and drank them for their own designs?
And the rush, moreover, just seemed to get faster and faster, the flow ever more amazing. The “vast” number of “facts” forming “the body of the various sciences” were expanding with such “marvellous rapidity,” it was reported in 1867, that they were getting to be too many to handle. This friend of science admitted that the job of learning them now seemed “appalling.” Such comment ushers us into the preoccupations of the post-Greeley generation.³

New images now come into play: Fact as a rush and flood instead of a stately flow; knowledge threatening chaos instead of defeating it. It was a picture of a kind of sorcerer’s apprentice of rationalism, with all the facts dancing back and forth, slopping those buckets of water everywhere, wildly out of control. Knowledge had meant progress and progress meant order, the gradual unlocking of secrets, both of nature and the soul. Could learning now be morphing into a monster of disorder? Could it really be right that the number of facts was “appalling”?³

In consecutive years in the early 1870s, three projects appeared each attempting to manage runaway fact. These cultural forms, all of which had to be invented at this time, remain staples of the late twentieth-century United States. None of these projects wanted to thin out the parade of fact being communicated to the public. Their energy went into keeping the thick rush of fact going while putting it in some order.

In 1871, Little, Brown published a tome fat enough to be just more than 1,000 pages. If you would have told the publishers that this was a
landmark event, that this book would be a prototype for countless imitators around the world and that its descendants would still reign supreme at the close of the twentieth century, they might have looked at you as mad. There was nothing “pretty” or well-written in this book. It was more a compilation than original work. And the prose was as deadly dull as the title -- *Selections of Cases on the Law of Contracts*. This was the first legal casebook ever published. Its author was the new Dean of the Harvard Law School, Charles C. Langdell.

One impetus for the book was a new wave -- or tidal wave -- of legal information. Prior to the 1850s, reports of previous law were limited. Court reporters like the young Charles Dickens in England, wrote out reports that were published. The system did not place a premium on the flow of caselaw. Instead, the law and fact was summarized very briefly.

Yet this system fell apart by the 1850s and 1860s. The market revolution, first of all, pulled whole peoples into the capitalist vortex, dramatically increasing the amount of litigation. Second, the system of American federalism meant that dozens of different jurisdictions each had separate laws that might collide. Finally, in 1856, West Publishing Company opened for business, publishing the caselaw for the whole nation. Suddenly massive numbers of cases were available for perusal. How could anyone keep up? Who could make sense of all this?

Langdell. He admitted the most striking thing he encountered when trying to figure out how to teach law was “the great and rapidly increasing
number of reported cases in every department of law.” Yet while the specifics were multiplying, if law was considered as a “science” there still were “principles and doctrines” that ordered the multiplying cases. Langdell’s casebook simply put the cases in order to exemplify the basic principles of contract.

Langdell worked from standard assumptions. Knowledge was a set of principles formed from a massive number of facts (in this instance, caselaw). 

*Selections of Cases on the Law of Contracts* was simply page after dreary page of cases. Several hundred cases and more than a thousand pages. Like a *Baedeker’s*, and unlike twentieth-century legal casebooks, it avoided any prose that might help orient the reader. Instead there were bare section headings (“Mutual Consent,” “Consideration,” “Conditional Contracts”) followed by thirty to almost two hundred pages of caselaw. No explanation. No hints. Just the incessant drone of legal opinion.

Langdell, as was common to the age, thought students learned basic principles by raw immersion in the particulars. But there was a twist to the casebook not there in a *Baedeker’s*. Langdell did not want students to judge for themselves. The particulars were put in order, with Langdell providing the frame. To be sure, the principles were never explained by the author. It was the particular cruelty of Langdell to want students to figure out the principles for themselves. This was a new compromise -- the thick flow of fact remained important, the student was still supposed to wade through it, but an organizer built the order.
The next year a group of entrepreneurs put up money to introduce a magazine having the same properties as Langdell’s casebook. This was the *Popular Science Monthly*, the forerunner in spirit of today’s *Scientific American*. While the editor, the social Darwinist E.L. Youmans, was content with the exploding production of knowledge, he feared that diffusion was “very imperfectly organized.” The newspapers did a lot of good informing the public about science, he thought, but they were hit and miss. And while nearly every school now covered a “little science,” such teaching was in general quite superficial.4

While Landgell worried about how the explosion of case-law might bring on chaos, Youmans worried about how the spread of half-knowledge might open space for evil, telling the story of a flim-flam artist come to Peoria, Illinois. This “stranger and Yankee,” Youmans reported, turned up in town claiming he had discovered a mix of water and oil with seemingly magical properties. Nine gallons of the brew would “run a steam-engine for thirty days, heat twelve furnaces, or light a whole city with gas.” Needless to say, the promoter claimed, it could be done at a fraction of current costs. The town leaders bought it. After all, why shouldn’t they in this century where there was even a machine that could make pictures of people! A joint-stock company was duly set up, but lasted only long enough for the hoax to be discovered and “inventor” to disappear, to, as Youmans sarcastically put it, “enlighten and warm some other region.”
Half-knowledge had consequences. The *Popular Science Monthly* started publishing in May 1872 to fight this problem by presenting the latest research “to the generally-educated classes.” It promised not only a “mass of the simpler facts,” which, after all, were only the building blocks of science, but also help in cultivating “scientific judgment,” a talent that might save the public from the bigger frauds coming down the pike.

In the following year still another cultural landmark underscored the new tone. In the fall of 1873, young product of the densely evangelical “burned-out district” in New York was working in the college library in Amherst, Massachusetts. It was here that young Melvil Dewey invented his famous system for organizing books on library shelves. In the next century, while research libraries gravitated to the Library of Congress classification, developed a few decades later, Dewey’s system was the norm in public libraries. In the 1960s, I learned the Dewey system in Oak Lawn, Illinois, and Chicago. Today my children are learning it in their public library in Iowa City, Iowa.

There is nothing in Dewey’s biography suggesting that he worried unduly about either chaos or cheats. He was simply a problem-solver. Books were piling up and they needed to be organized. By 1870, Harvard College, still the country’s largest library, had over XXXXXXXX volumes. But it was a problem at even more modest institutions.
As an abolitionist speaker, Frederick Douglass too found that more was necessary than information. “Let us have the facts,” he was told by his white handlers, “we will take care of the philosophy.” As Douglass stepped to the stage, Henry Lloyd Garrison whispered that he should just tell his story, unvarnished. But Douglass quickly bored with that: “I could not always curb my moral indignation...long enough for a circumstantial statement of the facts.” Indeed, the moment came when it was not believed that Douglass was a slave. His moral ruminations being unbelievable to some of his white Northern audiences, who apparently literally could not believe that a former slave could be so subtle.\(^5\) while reasoning was more profound.

The white editor of Frederick Douglass’s *My Bondage and Freedom* (1855) told readers that this was not a work of art but “a work of FACTS -- Facts, terrible, and almost incredible, it may be -- yet FACTS, nevertheless.” As the world swelled with information, the serious of all kinds evinced a willingness to pursue detail in ways that we usually lack the patience for. The well-known and lengthy descriptions of whaling and sailing in Melville’s novels
provide one example. This was part of what has been called the “operational aesthetic,” the drive for. It required a thick river of fact to flow to the public, thus letting the public make up its own mind.6

III

Pictures fit into established boundaries. There are good and bad pictures, but they fit into knowledge/sensation divide. It is not a visual culture overwhelming a literate culture. It is a culture of sensation -- rooted in a style of prose and image -- set against a culture of knowledge and culture -- rooted just as much in prose and image. Visuality was not, in and of itself, the threat it would later become.

In fact, some of the greatest critiques of the day, show this very different divide.

Photographs were not understood with terms used for disorder -- chaos, randomness. Instead, they were about the absence of motion. Photographs were generally understood to be stopping time, capturing moments for science, culture or family pride.
The key divide, instead, was knowledge/sensation.

If diffusion was ambiguously spread to white women, it was extended hardly at all to African Americans. Indeed, even free African Americans in the North had reason to be skeptical of the bolder claims of “progress” by people like Greeley or Child. Some of the most furious northern racism erupted when whites faced free blacks trying to improve themselves through education. Outright legal ejection happened early in the century; blacks were in some places excluded from public schools. By the 1850s, this practice was replaced by separate schools with pathetic funding. Northern whites would calmly say that African Americans were “incapable of being cultured beyond a certain point,” that the republic’s morality depended upon providing education for caucasions, not granting charity to negroes. African Americans and white abolitionists fought such attitudes but with few successes. Prior to the Civil War it was against the law to teach slaves to read in many southern states. It was different, but not very much better, in the north.7

Yet the idea of diffusion was such that free African Americans could make use of it anyway. The title of one of the better known books on self-education was particularly apt: *The Pursuit of Knowledge Under Difficulties*. Learning informally and not being deterred by hardship were parts of the
Yankee credo especially appealing to blacks facing Yankee racism. Frederick Douglass fits the bill perfectly. For him, self-improvement, hard work, and freedom all bundled together. Like Greeley, his first book was Bingham’s *Columbian Orator*. As a young slave in Maryland, he snuck around to learn to read; later he convinced much younger white boys, boys too young to grasp the intricacies of caste, to teach him how to write. After escaping slavery and winding up in Newport, Rhode Island, his first work were some of those brutal, back-breaking lifting jobs so much unskilled labor still lived off of in the nineteenth century (work requiring “good wind and muscle” Douglass said). He eventually found employment at a brass foundry, working the bellows “over a furnace hot enough to keep the metal running like water.” This setting, Douglass felt compelled to tell nineteenth-century readers, was not conducive to education. Yet his will to knowledge would not be denied. Douglass managed to nail “a newspaper to the post near my bellows, and read while I was performing the up and down motion of the heavy beam.” On the top of this page in his autobiography is the rather understated caption, borrowed from the title of the popular book: “Knowledge Under Diffuculty.”

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From Facts to Aesthetic Exemplum: Changing Modes of Popularization in the 1920s and 1930s

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February 1998

DRAFT: DO NOT CITE
The world we maneuver through is on information overload. Facts are an avalanche, coming at us from all sides and all the time. The quantities of information running through the world are daunting. It is hard to think of a bit of human experience that has not been colonized by information.

This is not necessarily a comforting picture. Our age also see an increased skepticism about science, a steady level of distrust of expertise. For historians, the recent flap over the Enola Gay is a good indication that solid research -- information -- does not resolve issues but gives rise to complaints about the arrogance of experts. Ironically, historians themselves over the past three decades have, in other contexts, been prominent among those who have helped teach the public to distrust expertise. People leap to the conclusion that information is tainted by the source, not to be trusted. But this generates its own reaction. Public opinion, we worry, is ruled by sound bites, by gaps in knowledge, not by information but by those pictures most enchanting or gruesome to cross our television screens.

Today, more information is generated than ever before but questions raised about whether this mass of factual knowledge will be part of some cumulative wisdom -- or at least cumulative knowledge. Yet the lack of confidence does not mean that we want to get rid of our knowledge regimes. In fact, it is precisely because so many people intuitively accept what might be called a “vulgar Foucaultism” about the intimate relationship between power and knowledge that there is no substantial move away from the avalanche of information. It is too important a weapon to give up.

Yet this was not always the case. Through much of the nineteenth century it was commonly thought that the production of information was connected to the democratic project, the spread of knowledge a contribution to human liberation. Moreover, this is not the first point where the culture has had a sense of crisis generated by the flow of information. In the 1920s and 1930s, various cultural arbiters confronted the crisis of complexity, and worried about how to better manage and disseminate the avalanche of information. In order to understand our own time, it is useful to chart out the earlier faith in the facts, what sort of culture replaced it in the early twentieth century, and why this earlier solution is now no longer tenable.

THE NINETEENTH CENTURY

Historians can easily think themselves back to an “information-thin” time. Two hundred and fifty years ago there was not the mass of statistics that surrounds us today. There were not the research universities, think tanks, bureaucracies for health and science research. There were not the elaborate means for diffusion that we have in the mass media or the public school. The increased compilation of statistical knowledge in the nineteenth century is something that historians like Ian Hacking and Theodore Porter have recently spent time exploring. New knowledge was produced on countless subjects in the humanities, medicine, and engineering science. In the course of the nineteenth century all sorts of topics traditionally handled by moralizing fell under the regime of knowledge -- cholera, homosexuality, and human memory, to take three examples.

While there were skeptics, faith that the new knowledge would contribute to collective advance was the dominant strain, a belief shared by Herbert Spencer, Karl Marx, Frederick Douglass, Elizabeth Cady Stanton, and William Graham Sumner. Popularization of knowledge in the nineteenth century was often associated with passing on huge quantities of information. The spread of information to increasing numbers of people was critical to the advance of a civilization.

It was not that this was the only way to communicate with the public. There was the drama of wild oratory, the strange fantasy world of advertising, the carnivalesque of certain crowd actions, the dramatic narratives of the penny press. But certainly one important strain was the popularization of knowledge by passing on large quantities of information. This was what Neil Harris has called the “operational aesthetic,” the desire to load mountains of information into a popular package. Horace Greeley thought the beauty of the Crystal Palace exhibition in New York in the 1850s was that “every possible artistic, scientific, and industrial production can be sent there, and seen and adjudged by competent persons.” And it was the potential for diffusion that Greeley thought the core of the concept of progress. Lester Ward in the 1880s wanted every common school student to learn the scientific method. He thought that if this happened all
adults would be able to assess the scientific validity of claims made about science, politics, and society. Local naturalists in Dubuque, Iowa, took as their mission the diffusion of science to a wider public.¹

To get a feel for how information was valued it is worthwhile to look at the book Horace Greeley put together in 1853 to promote and explain the Crystal Palace exhibition. It has no pictures. It is stuffed with minute descriptions of dozens of products and technologies seen at the exhibition. Various guns, saddles, hats, wool production techniques, boots, porcelain, glass, preserved food, soaps, perfumes, silk, statuary, cotton production and products and more are detailed with what later generations would see as an oppressive amount of detail. The technical was not spared. Take Greeley’s account of the latest breakthrough in plow technology:

The beam is five feet long, and the whole length from end of handle to point of beam nine feet. These are made of the best of tough oak and ash timber, all the rest of the plow being made of refined cast-iron, the cutting-edges cold-chilled in the mould till they are harder than tempered cast-steel. This is called the deep-tiller sod-plow. It is intended to turn a furrow from nine to thirteen inches deep and fifteen to seventeen inches wide; and such is the perfection of its construction that it can be done easily by two yoke of oxen, such as are in common use all over the New England states. If the soil is very stiff and hard, an extra yoke is added. At the end of the beam there is a cast iron wheel, by which the required depth is gauged. The draft is from a rod attached to the beam at the standard and leading under the beam through a guide, by a screw upon which the rod can be raised or lowered four or five inches, the varying the line of draft.²

And so on. I’ve cited about one-half the description of the plow given by Greeley. And this plow was just one of the dozens of such descriptions given on dozens of diverse products in the 386 pages of text.

The popularization of knowledge could take other forms as well. The standard museum and department store culture of the late nineteenth century put a premium on the proliferation of objects. Pictures crowding each other on walls at the New York Metropolitan, artifacts on display at every turn in the Chicago’s Field Museum -- such were efforts to spread knowledge. The clutter of department store display of the time was educative in its own way. Customers would assess goods themselves, “adjudged by competent persons,” as Greeley had said.

One should be cautious here. There were other ways to spread knowledge that did not depend upon the thick flow of fact. Edward Bellamy’s Looking Backward signaled that fiction was one way to spread the message of social science.

Nor was everyone content with the open spigot of fact. Certainly as early as the 1830s, and especially by the 1870s, cultural elites feared the wild flow of information. The spread of books, newspapers, and education had invented whole groups of people who had bits and pieces of knowledge but not discrimination.

Mugwumps had more than one response to this. The fascination with culture among elites was designed to reduce the relevant flow of information. Reading classics was to prune out the cornucopia of information that bounced through the civilization. This spread gradually during the 1870s. Figures such as Charles Eliot Norton, James Russell Lowell, and Godkin all moved away from an earlier interest in the spread of knowledge. Disciplined taste was far more important than the spread of information.

Just as often, however, Mugwump intellectuals responded to the chaos of information by trying to discipline the flow of fact instead of shutting it off. One place to see this is in the nation’s law schools. West Publishing began printing case law in the 1850s. By the end of the next decade some lawyers were aghast at the proliferation of information. The sheer quantity of published case law was confusing lawyers and judges instead of helping them. In response, legal academics invented the casebook. The first such text was published in 1871, compiled by William Langdell of Harvard. In his introduction, Langdell noted that his casebook would make sense out of the flood of case law published in recent years.

² Greeley, Art and Industry, 80-81.
This effort to shape the flow of information took other forms as well. The year after Langdell published his famous casebook, another Mugwump effort at popularization surfaced -- The Popular Science Monthly. In 1873, another organizing scheme was completed. Melvil Dewey, of Amherst College, created the Dewey Decimal System to help readers make sense of the mass of published material now facing them in increasingly large libraries. In good Victorian style, Dewey did not think about reducing the material that flowed to the public but organizing it in some useful, practical way.  

This was a system that continued hoped to manage and mediate the flow of information. At the same time, however, such commentators remained committed to passing on copious flows of knowledge and were confident that their arrangements would be coherent. It was in 1896, after Arthur Oaks bought The New York Times, that the motto “All the News that’s Fit to Print” was put on the masthead. It almost perfectly reflected Mugwump ideas about the dissemination of knowledge. While most commentary over the years has focused on the first three words (“All the News”) just as important are the last four, which express elite efforts to mediate knowledge at the same time it was disseminated. Mugwump editors, museum curators, and educators continued to think of the thick and copious flow of information, guided and organized by their own capable hands.

THE CULTURE OF SUMMARY

Between 1910 and 1940, however, these attitudes to the dissemination of knowledge eroded significantly. Both the populist versions of people like Greeley or Ward and the Mugwump version of mediated knowledge fell on hard times. Increasingly, the facts came to be distrusted as too unruly -- even as more facts were called for. Increasingly, new ways to address the public were experimented with. The culture of fact and process gave way to something new.

As early as the 1890s there were a few intellectuals complaining about the unruly overflow of information and the inability of the culture to order or contain it. Karl Pearson and Henry Adams were two examples. Such complaints mushroomed over the next decades. By the 1920s they had become common. Indeed, the popularity of Adams’s Education in the twenties (it was only privately printed in a limited edition in 1905) itself was one sign of the sense that “the facts” were getting out of control.

None of this was done in the name of getting rid of an information culture. Indeed, the 1920s and 1930s were real growth years in the production of statistical knowledge. Economic information in particular exploded during those decades. Information on things like Gross National Product and national unemployment appeared. Intellectuals felt very comfortable with the growth of knowledge. Walter Lippmann was not alone when in 1922 he asked for information bureaus to help shape public discussion in the United States.

It was not opposition to the culture of information that was new but the growing sense of its complexity. The cliché of “complexity” was not new at the time, of course. It has been around perhaps forever, and certainly was common in the last half of the nineteenth century. The world is seemingly always getting more “complex.” But that assertion has different consequences at different times. In the nineteenth century, despite scattered worries about how knowledge and information might be out of control, the charge of “complexity” did not translate into a new approach to public communication, a new attitude toward popularization. But in early the twentieth century, it did. This was a change that took decades but which was centered in the 1920s and 1930s.

What was new was a belief that complexity had to be managed. Information was to be handled in a basically different way than before. A wide variety of cultural figures, many who would not agree on much of anything, began to argue that the mass of empirical data had to be boiled down for the public, simplified into a core. The world was so complicated that information had to be packaged without its confusing details but as a crystallized essence. Bits of information would represent the whole. A striking image might capture a social totality. Synecdoche would be a common organizing tactic.

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It is quite amazing to see the variety of different places in which these ideas surfaced in the 1920s and 1930s. One of the most striking was the appearance, during those decades, of what was called “interpretive reporting.” Interpretive reporters questioned the assumption that thick loads of information were vital, an assumption central to journalists as different as Horace Greeley and editors of The New York Times. Instead, interpretive reporting emphasized summary. The New York Sun changed its weekend format in 1931 by producing summaries of news instead of fact-reporting. It was the beginning of a trend. In the next years the New York Times, Washington Post, and Associated Press were among those who followed suit. Herbert Brucker, in his 1937 The Changing American Newspaper argued that “the increasing complexity of the world” made the new reporting imperative. Facts were just confusing. Interpretive context was necessary.4

One of the harbingers of the new style was Time, first published in 1923. Time’s publisher, Henry Luce, certainly believed that the “complexity” of modern life opened the niche for the new magazine. The jauntiness of Time’s prose, a trademark for decades, was in sharp contrast to information-dense papers. Luce hoped that his newsmagazine would be a concise and breezy summary of the news for busy people in a busy world. Not a compilation of objective facts, which Luce didn’t believe in anyway, but an interpretive picture of the world as a whole was what he aspired to.

Apart from journalism, there were a variety of new turns in academic culture that attempted to corral “the facts” into something much tighter and contained than the sloppy world of unrestricted empiricism. Logical positivism, which came to the United States in the 1930s, presented itself as the antithesis of “empirical positivism.” Hardheaded logic might cut through the unrelated sprawl of facts in order to uncover the core of ascertainable truth. Logic was combined with a limited empiricism to build solid but revisable generalizations, a theme expressed in A.J. Ayer’s English language manifesto for the movement, Language, Truth, and Logic, published in 1936.

Another dimension of this shift could be found in legal culture. While not an immediate concern to the general public, there was the growing fear that the legal system was being overwhelmed by case law. The explosion of published cases were making it hard for lawyers to keep up. Again, the particulars were becoming so numerous and complex that order was threatened. According to Elihu Root, “the confusion, the uncertainty was growing from year to year.” Out of this fear came the creation of the American Law Institute in 1923, dedicated to compiling “Restatements of the Law.” Committees of notable attorneys summed up (or “restarted) the basic principles of contract, torts, and so on, reducing the empirical complexity of case law by creating generalizations that lawyers might refer to. The restatements were enormously influential in following decades.5

A striking example of the new attitude toward information and public communication is found in the rise of statistical sampling in the 1920s and 1930s. Statistical collection through the nineteenth-century had been fact gathering. Indeed, this continued to flourish in the early twentieth century. But statistical research in the twenties and thirties helped propel the discipline in a new direction -- one that did not depend upon a mass of information, but on sampling selected portions of the population, portions that adequately represented the whole.

R.A. Fisher’s Statistical Methods for Research Workers (1926) was the breakthrough book, going through a string of editions in the next two decades. It introduced the idea of random representative sampling in statistical analysis. Careful procedures could boil down the need for massive empiricism. A random sample would give a central tendency bounded by a probability. (That probability is the ubiquitous “margin of error” that is always tacked on to poll results we hear today.)

The possibility of finding and transmitting the essence of a population’s opinion had enormous potential. It proved its efficacy in 1936 when George Gallup and Elmo Roper, using representative sampling techniques, did a much better job of predicting the presidential election than did the Literary Digest, which relied upon older empirical methods. The final turn of this change was the emergence by the 1930s of a very new meaning of the term “public opinion.” Instead of being the end result of civic deliberation, public opinion was now defined as the aggregate of individual opinion, discovered by random

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sampling. In 1937, the journal Public Opinion Quarterly was founded. It reveled in the new sampling

It was during this time that new ideas about the popularization of science and medicine surfaced. Whereas nineteenth-century popularization tried to “systematically” discuss a comprehensive health system or a science, a rising tide of complaints suggested that systematic knowledge was not what people were getting. The editor of Modern Medicine argued in 1920 that knowledge of science among the general populace was “fragmentary, unrelated, and, for the most part, acquired through spectacular accounts of the Sunday newspaper.” Such disconnected reporting of science information had contradictory results, leading the public to a sort of “mysticism” about science and “the absence of any definite knowledge.”

Instead of centering on process and system, the emphasis would be on results. Gone was Lester Ward’s dream of making every citizen a scientist. Instead, the public should be given the “results” of science. As science itself appeared to be more and more complex and confusing to the layperson, scientific popularizers increasingly reported on applied science. The same was true of medicine. As John Burnham notes, during the 1930s “popularizers tended to shift from diffusing systematic knowledge to teaching about the products and consequences of medical science.”

Museums were another place where the new attitude toward information appeared. And although it was not until after World War II that the changes were complete, there was a long germination period in which Victorian display techniques were attacked. At every point, this attack was in terms of the new culture of representative sampling.

Franz Boas, as early as 1887, worried about the clutter and organization of ethnographic museums. Such institutions generally organized their material typologically. Spindles from various different cultures were put together, as were eating utensils, shoes, musical instruments, stools, and every other sort of artifact. To one Victorian curator, Otis Mason, this was logical, since so many people with so many specialized interests came to view the artifacts -- soldiers, potters, musicians, artists. All these visitors “desire to see, in juxtaposition, the specimens which they would study.” Exhibits had to be grouped to appeal to the “greatest diversity of mind.” Such attitudes well reflected the nineteenth-century sense of popularization. As much information as possible had to be presented to the public so they could explore the matter for themselves.

To Boas, however, this was a mess. He argued that exhibits should be organized by ethnicity. Each artifact had to be understood as part of a whole. Museum exhibits should not be bundles of artifacts but “a collection representing the life of one tribe.” Tribal distinctiveness, according to Boas, might be shown in “small special sets” of artifacts. The part, in other words, might represent the whole.

Boas thought most museumgoers wanted only entertainment. Exhibits, to appeal to this group, had to contain a few artifacts dramatically displayed, leaving such casual viewers with a single overriding message. Exhibits would have less in them but they would more carefully direct the visitor.

Boas’s thinking about museums was transitional. He might have thought that most viewers were casual and needed guidance, but he also saw the museum as a place where more serious scholars would do research. He himself had gotten insights from staring at clusters of artifacts at museums. This led to a tension between his desire to reduce the complexity of exhibits for the general public and a desire to have massive amounts of artifacts available for ethnologists to observe. The collecting wave of ethnographic museums at the turn of the century further complicated this picture. At the New York ethnographic museum that Boas worked at, any chance of streamlining display was defeated by the lack of storage space for new acquisitions. The new material continued to clutter the exhibit rooms. Boas was transitional in an even more important sense. His ideas about simplified organization was not accepted at the time, one of the

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7 “The Public Interest in Science,” Modern Medicine 2 (1920) 710.
reasons he left museum work in 1905. Later generations would implement his vision. Research would be split from public display. The culture of representation would triumph.  

Yet this would take some time. Art museums, even in the 1920s and 1930s, continued to be dominated by the older aesthetics. Rooms stuffed with paintings were increasingly decried as cluttered and shapeless. In 1926, for example, Forest Cooke attacked museum organization in The Century Magazine, complaining, among other things, that museums were devoted to the quantitative instead of the qualitative. Cooke was one of a string of writers who in the 1920s and 1930s attacked art museums for being stuffy, old-fashioned, and out of touch. More dramatic visual display was called for. And the presentation of information was minimized. All this was tied to the museum’s job of educating the public. Since an art museum should “endow the uneducated with an abiding sense of the good, the beautiful and the true,” one commentator noted in 1927, it should “not chronicle art as a fact but to enact it as an event and to dramatize its function.” Instead of five thousand examples of Japanese objects, for example, there might be a “Japanese room” dominated by one painting that set the theme and gave meaning to any other objects that might be included as detail.

In Technics and Civilization (1934), Lewis Mumford commented on shifting practices in museums of technology. The Conservatoire des Artes et Metiers in Paris he thought “a mere storehouse;” the Deutsches Museum in Munich “exhaustive” (this was not a compliment) for its collections had “a little overreached themselves in bigness.” Such a museum, Mumford thought, “one loses sight of the forest for the trees.” On the other hand, Chicago’s Rosenwald Museum attempted “dramatic reconstructions of mines.” and the industrial museums in London and Vienna both had “educational value without being overwhelming.” In the new museum there was no reverence for an abundance of objects. Rooms became less cluttered; the power of aesthetic exemplum was premier. It was another example of how isolated bits of information were thought to be shapeless by themselves and of how framing devices were becoming central to the representation of information to the public.

Various efforts to popularize literature and humanistic learning in the interwar years also reflect the larger trend. The Book-of-the-Month Club, founded in the mid-1920s, hoped to reduce the confusion caused by the high number of books published by separating the wheat from the chaff. As a 1927 advertisement in The New York Times Book Review put it: “You know that, out of the thousands of books published, there are only a few you are interested in. You want the outstanding ones. But what are they?” A popularizer like Will Durant also used the techniques in his widely read The Story of Philosophy. He rejected discussing complex epistemological issues in order to summarize the “wisdom” of influential thinkers. His was an “interpretive synthesis,” he claimed, for the “busy reader.” As Joan Shelley Rubin has remarked, this “outline” approach to culture “promised culture condensed, subdivided, and contained.” For busy readers, there was no reason to get into the subtleties of argument.

Even advertising fell under the sway of finding a core and the de-emphasis of information. It may seem peculiar to make the claim, as advertising had powerful traditions of the sleight of hand and fantasy quite inconsistent with the culture of fact. Yet there was always a competing “plain style” of advertisement, one that gave lip service to “just presenting the facts” so that consumers might make informed judgments. It was especially influential for a brief time early in the twentieth century. This was a textually dense style, full of prose explaining the superior virtues of a particular product. Not so much a part of earlier styles of popularizing knowledge as a simulation of them, these ads disappeared by the end of the 1920s. As Roland Marchand notes: “The cumulative experiences of a decade in radio had crushed the vision of advertising as

13 Lewis Mumford, Technics and Civilization (New York, 1934) 447.  
a broad educative force....” More seductive appeals to the flavor, or essence of a product increasingly replaced elaborate word-discussions.15

Still one final example of the triumph of crystallized essence during the 1930s was the power of the culture concept, perhaps the sine qua non of the new sensibility. The culture concept, as articulated in the work of Boas, Benedict, and Mead, and then passed to a host of popular commentators, took the broad empirical complexity of a civilization and summed it up in a limited set of traits that became “the culture.” The culture concept, as Warren Susman has argued, worked on a number of levels at once. It was a way to reduce anxiety in a newly “complex” machine civilization. It was a way to teach community and conformity. And it was a way to organize experience. That is, it was a way to make sense of the variegated mass of data that flew at us each day. As Ruth Benedict argued in her 1934 Patterns of Culture, the “quest for culture is the search for meaning and value.” “Culture” became the basic patterns of a civilization that made sense of what on the surface might look like the randomness of experience. It structured the buzzing confusion of the empirical flux.16

The culture concept was another important node where academic culture spilled into public culture. The 1930s was the point when the phrase “The American Way of Life” came into wide use. All sorts of things became the “essence” of “America” -- folk songs, Frank Capra heroes, Norman Rockwell images, the common man. The culture concept really was the best expression of a culture that responded to complexity by championing synecdoche. The avalanche of fact would be met by presenting the part for the whole.

In all its expressions, this culture of crystallized essence sidestepped information and process. It communicated to the public in a new way, replacing a dense flow of facts with an imaginative summation of the whole. Whether in a museum exhibit, newspaper article, or discussion of a culture, it tried to embody a core, not describe detail. What was to be communicated to the public was the sum, not what was added to get the sum.

Yet if this culture was a way to handle the complexity of information, it was not at all hostile to the collection of information. There was a profound growth in information gathering during the 1920s and 1930s. Nothing in this new attitude toward public communication was meant to arrest the growth of knowledge. The cornucopia of fact and scientific exploration were all good. Complexity might be successfully managed and interpreted to the public by winnowing. And this would be done without loss. Instead, there was a certain beauty in it. This search for an image that might contain an essence was a sort of aesthetic as well. The growing hostility to ornament and detail in the visual culture was not too different from the new interest in statistical sampling and the culture concept. All provided a way to shape and present an essence. Such ventures took the necessary and increasing waves of information and made them into a core. They made the unruly world of facts ruly again.

JOHN DEWEY

One problem with the emerging attitudes toward the communication and organization of information is that it seemed to take the power of judgment away from all citizens and put it into the hands of cultural arbiters. These arbiters did more than put something in order, they winnowed it down. Summary, synecdoche crystallized essence -- all these tactics reduced the amount of information that had to be assimilated. But what would that do to an informed citizenry?

16 The relevant essays are in Warren Susman, Culture as History: The Transformation of American Society in the Twentieth Century (New York, 1984).
One writer who directly confronted these issues was the philosopher John Dewey. By the middle of the 1920s, Dewey’s thinking contained two different but complimentary strains. On the one hand, he called for increased public discussion, openness, and communication, traits he associated with the best of scientific culture. On the other hand, Dewey also thought there had to be periodic moments of affirmation. Here he turned to art and culture.

Recent commentators have tended to see Dewey’s increased interest in aesthetics as part of a response to the critique of pragmatism voiced by writers such as Lewis Mumford and Randolph Bourne. While this is true, just as important was the emerging culture of summation. Dewey’s post-war thought was very much a part of such thinking. His aesthetic turn of the 1920s and 1930s reflects one attempt to incorporate this wider phenomenon into a more complicated political theory.

Dewey had his own version of the knowledge crisis. To “the average voter to-day,” he wrote in 1927, “the tariff question is a complicated medley of infinite detail, schedules of rates specific and ad valorem on countless things, many of which he does not recognize by name, and with respect to which he can form no judgment.” A decade later it was no different. The “increase in number and diversity of unrelated facts” now played “pretty continuously upon the average person,” he wrote in 1939, leading that person to choose slogans over analysis; “acquiescence rather than critical inquiry.”

At times it seemed that Dewey was sharply at odds with the culture of summation. He complained about the “readymade intellectual good” so prominent in contemporary life. Steady and ongoing communication in which all citizens found a way to participate was the way to address problems, the position he staked out in his 1927 The Public and Its Problems. This would be the only way to dethrone those experts with detailed knowledge about specific subjects. Dewey associated this approach with the scientific method. Science addressed problems by communication, discussion, and the willingness to revise tentative conclusions in the face of new experience. It was time, Dewey thought, to bring those attitudes to bear on the great social and political issues of the day.

Yet there was a very different side to Dewey during those years that brought him right to the center of the culture of crystallized essence. Important here was Dewey’s interest in art and what he called “consummatory experience.” Dewey divided experience in two sorts, instrumental and consummatory. Instrumental experience solved problems; it was practical, concerned with means. Consummatory experience, however, was enjoyed for its own sake. It was about ends. If instrumental experience was critical, consummatory experience was affirming.

Art was both instrumental and consummatory to Dewey, but the stress was on the latter. Art was “the culminating event of nature as well as the climax of experience.” Moreover, it was an aesthetic exemplum of a social totality, “a record and celebration of the life of a civilization,” he said in 1934. While there were “transient” and “enduring” dimensions to any social order, art was “the great force” in reconciling transient with the enduring. Art had the power of consummation. Aesthetic experience revealed the essence of a culture. It should not be surprising that Dewey, by the end of the 1930s, was favorably disposed toward the culture concept. For his sense of consummatory experience and art was close to the meaning of “culture.” All three summarized, made order out of a mass of more transient flux, and were imaginative embodiments of accumulated experience.

Dewey reconciled his discursive and consummatory thinking by arguing that both were needed in a well-rounded social order. Dewey described consummatory experience in different places as “integral,” tending to “a close, an ending,” a point of “equilibrium,” as “enjoyment for its own sake.” But this did not mean stasis. The moment of equilibrium also initiated a new period of flux where adjustments had to be
made. “The time of consummation is also one of beginning anew.”24 Here was a picture of Dewey’s
democratic theory. Discursive, critical thinking alternating with integral, enthusiastic confirmations of the
democratic achievement. Dewey’s aesthetic turn was not disconnected to the culture of summation
emerging during the 1920s. In fact, it played a number of its themes. Yet Dewey offset this affirmative
moment with a firm commitment to communication and discussion.

At points, however, Dewey gave the aesthetic even more to do. At these moments there was a
Dewey who sounded very much like the mainstream of the culture of summation. In The Public and Its
Problems, Dewey worried that straight information would not bring an active public into being. A
“technical high brow presentation would appeal only to the technically high-brow,” he wrote, a refutation of
Horace Greeley’s mid-nineteenth-century assumptions. Even a newspaper that tried to be a “daily edition of
a quarterly journal of sociology or political science would undoubtedly possess a limited circulation and a
narrow influence.” Spreading huge quantities of sophisticated information was not the answer for Dewey.
Instead, he turned to art. Artists, who were the “real” purveyors of the news anyway, could be the means by
which new messages were passed to a larger public. They would summarize complicated positions and

Here art was doing more than serving consummatory experience. It was decidedly instrumental as
well. And it certainly was a perfect example of the new culture of aesthetic exemplum. A crystallized and
striking image did not just set alongside hordes of information. It would take their place. But what did this
do to Dewey’s goal of reviving democracy? This aesthetic turn might not undermine Dewey’s democratic
project, at least if one was convinced that artistic renditions would accurately summarize the “news.” But if
this is accepted, then it strikes me that one must not level elitist charges against museum curators who
directed their audience to a selected point, shielding them from elaborate information. They too were doing
the same sort of summary. In short, one has to accept that the culture of summation was a legitimate
democratic project to accept Dewey’s version of it in The Public and Its Problems.

Despite his constant calls for a rejuvenated democratic public, Dewey slipped at various points,
suggesting that the public could not do everything once expected of it. Feeling that art had to take the place
of elaborate information was one example. In his last major work, Freedom and Culture, there was another.
Dewey, discussing the culture concept, wrote that we “are beginning to realize that emotions and
imagination are more potent in shaping public sentiment and opinion than information and reason.”26 Yet
how his squared with his hope for a democratic, rational culture, a hope expressed elsewhere in the book,
was not discussed.

At his best, Dewey thought that the culture of summation usefully balanced more instrumental
conversation. Both, in fact, were necessary to a healthy democracy. Dialogue and conversation were the
means by which a society could critique itself; periodic consummatory experience would keep the
discussion from lurching in ever-new directions. Moments of aesthetic experience were necessary to orient
the body politic, guide the ongoing discussion. But there were also moments -- and I stress that they were
only moments -- when it appeared that Dewey lost faith in the powers of average citizens to assimilate
knowledge or make rational decisions. At moments like this the use of art or culture was extended and
Dewey veered, however briefly, toward a more thoroughgoing embrace of the culture of summation.

OUR EXPLOSION OF IMAGES

The culture of a crystallized essence depended upon the belief that knowledge might be
successfully represented in an image. There was a nobility and beauty in an essence. Detail was clutter to
be avoided. Since there was so much detail in such a complicated world, a world full of information,
reducing fact to essence was how we kept things in order. This was a culture that hoped to fruitfully contain
information by image -- an image that was itself stabilized by the background of information.

This culture is now in disrepair. Especially since the 1970s, practically all its assumptions have
been seriously questioned. Or, it might be better to say that they have been overrun. Images, we fear,

24 Dewey, Art as Experience, 17; also see Experience and Nature.
26 Dewey, Freedom and Culture, 10.
cannot be stabilized in the way that was thought. When video replaced film in the early 1970s, the potential for quick juxtaposition of images jumped exponentially. Video editors in New York and Los Angeles began thinking of the virtuosity of quick cutting. Among other things, this quite dramatically changed the way that news was presented. It made possible the rise of the sound bite in the news. The ability to edit instantaneously shrank the amount of words each speaker uttered before a new image flashed on screen. The new ease with which words from one tape might now be correlated with the picture from another made news crews far more self-conscious about blending pithy sayings with dazzling images.

The new technology also made music videos possible in the 1980s. Other techniques developed in the latter half of the 1980s, like skip-framing and morphing, further contributed to the frantic mutation of images. Advertisers joined pop artists in becoming “image scavengers,” grabbing images that littered the cultural landscape to invent pastiche. With such visual thrills simultaneously tantalizing and taunting us, where is there room for that consummatory experience that supposedly summarizes our experience?

But even where images appear steady they are not necessarily a summation of firmer, empirical reality. Mythic images take on a life of their own. The fear is that texts are referenced to other texts rather to anything outside. They are becoming more “unreal.” The media politics of a Ronald Reagan, where movie images became “realities” is the most commented on example. But the culture is gripped by a much larger image politics, where spin doctors and media consultants are weighty players, all hoping to change political momentum by attaching favored policy to dramatic images. Phil Gramm could complain that Bill Clinton’s Bosnia policy was captive of “images seen on TV news.” The orphanage debate at the end of 1994 was framed by two fictive images of the institution -- Dickens’s Oliver Twist and Spencer Tracey in Boys’ Town. Members of the Clinton White House glibly dismissed orphanage talk with a reference to the former. Newt Gingrich rather tendentiously introduced a showing of the latter on Ted Turner’s cable network. Theorists like Jean Baudrillard, who argue that truth itself is a fiction and that we maneuver through a fun-house of simulacra where all seriousness is turned into spectacle might breathlessly overstate our condition but it doesn’t sound bad as an understanding of the O.J. Simpson extravaganza. There is much in our media environment that gives such ideas a surface plausibility.

Changes in image production have helped spawn an intellectual interest in images far bigger than just Baudrillard. “At the end of the twentieth century we live -- perhaps more than ever before -- in an age of the image in all its complexity,” Sander Gilman, president of the Modern Language Association, tells us. Images continue to sneak into places where print reigned alone, a trend that might be read as part of a gnawing sense among late twentieth-century bourgeoisie that they should not miss out in the age of images. The American Historical Review began using pictures in XXXX; the Journal of American History in XXXX. Both began to review films in the 1980s.

Especially in its postmodern version, this new turn in intellectual life has rejected the earlier idea of the image capturing a denser reality. Instead, images live a life of their own. We were witnessing “the transformation of reality into images,” according to the literary critic Frederic Jameson. The historian

30 Adatto, Picture Perfect, 123, 171-72; GET THE MICHAEL ROGIN BOOK
Martin Jay noted that postmodernism combined deep skepticism about the image with an awe for its power. Postmodernism, he claimed, was paradoxically both “the hypertrophy of the visual” and at the same time “its denigration.”

None of this means that information has vanished. Instead, we remain besieged by more information than we can process. World Wide Web is just the latest example. Again, the 1970s have to be seen as the hinge. Early commentary continued to think of the orderly, technocratic possibilities for the information society. But finding any overarching order in the mass of fact and number is certainly at issue. David Ricci has argued that Washington think tanks exploded in numbers and prominence in the early 1970s to help different ideological factions in Congress sort out the avalanche of information now coming at them. And Ricci shows how certain of the think tanks, notably the conservative Heritage Foundation, very quickly developed sophisticated public relations arms. It learned how to play the information game and image game at the same time.

Instead of finding some order for the information, there was the sense that information banks had become so outrageously huge that a macro-order is simply irrelevant. Instead of discovering some late twentieth-century equivalent of a Dewey classificatory system, energy is invested into finding ways allow individuals and organizations to access information as they need it. World Wide Web is just the latest example of this. The development of Nexis and Lexis in the 1970s and 1980s are another. The recent shift in how most American librarians view their job still one more. The massive computerization of the library in the past twenty-five years has centered around the idea of “information retrieval.” The defense department in the 1950s, for example, funded research for online bibliographical retrieval systems. They were installed experimentally in a few major libraries during the 1960s, although as late as 1968 most librarians remained skeptical of major changes in library management. The next decade, however, libraries began automating in significant numbers. A commercial market emerged in that decade to install online systems in libraries.

By the end of the 1970s, librarians were routinely discussing these changes in terms of a shift to an “information society.” In their descriptions of the new library the distance from earlier ideas was evident “Information replaces culture in our civilisation” was how two librarians put it in 1977. We were seeing the birth of what another library scholar termed “LOTFS,” Libraries of the Future: “Instead of storing books and providing manual mechanisms for their access, LOTFS will act as networks for accessing scholarly information and providing for its storage and access through electronic means in networks -- often not even storing the information but rather, providing electronic network access to its primary storage location, which may not even be associated with any library.”

If the culture I have described emerging in the early twentieth century hoped that images would be summaries of information and knowledge, there is a growing late twentieth-century sense that images and information swirl madly around us, each independent of the other, each successfully manipulated by those in touch with their particular powers. In a mass public, image overwhelms information. Infomercials, docudramas, the slippage of mainstream press into tabloid techniques and the discussion surrounding these phenomenon -- all suggest a new relationship between fact and image, one where image is primary, not

34 Daniel Bell, COMING OF POST-INDUSTRIAL SOCIETY
35 David Ricci, The Transformation of American Politics (New Haven, 1993); for the same trend in the management of child welfare statistics, see Cmiel, Home of Another Kind, 185.
summarizing information but making it irrelevant. But the insiders of academic, social service, corporate, and political worlds are confronted with an avalanche of information cascading over us in ways that none of us will ever control or conquer. It remains a teeming, wild resource with no firm boundaries at the edges, more a roiling and ever-expanding mass that those with the right skills can tap into for instrumental purposes. In both domains, the idea of an image as a crystallized essence of more copious empirical information has vanished.38

There is one final dimension of the early twentieth-century culture of summation that is in disrepair. The moral authority of synecdoche has completely broken down. The notion of a single image encapsulating a larger social totality is met with utter disbelief. Nothing is more anathema to a culture that celebrates diversity than the idea of a Norman Rockwell picture of four white boys playing by the creek being the “essence of American youth.” In our social representations, the part for the whole is no longer aesthetically pleasing.

In intellectual culture, the collapse of the notion of a “national character,” one dimension of the culture concept, reflects the shift. Such a concept would now be laughable in a forum such as this. But it is perhaps far more striking to see how this search for a one-to-one correspondence even ingrates itself into those conservative circles that preach hostility to the new idioms of diversity, who continue to pay lip service to a synecdochal approach to representation. A figure like Newt Gingrich searches out women and African Americans for staff, especially for staff that might find itself in front of a TV camera. Something now “looks” wrong in being on TV represented by a phalanx of white men in suits, even though it is still easy to find such images. Conservatives want such “symbols” as Clarence Thomas. Republican Representative Sue Kelly makes sure to note that ten Republican women are chairing or co-chairing congressional committees, more than when the Democrats controlled Congress. Pat Buchanan’s sister tells a reporter that her brother’s campaign is the only one headed by a woman.39 I have talked with a conservative Republican banker from suburban Chicago who told me how embarrassed he was by not having people of color on the bank’s cartoon invitation to its Christmas party. It was not that he was particularly sensitive. It was that he wanted to “look right” to his employees.

This uneasiness about synecdoche itself contributes to the instability of images. For a one-to-one representation is ultimately a utopian ideal. Representation will always be selective. Some of the fights over image representation today, should AIDS posters on San Francisco buses have white males or a different mix on them, how does one visualize the university community in promotional brochures, what mix of representations should we have of African Americans on television and in film -- reflect the tensions inherent in this approach to cultural image. There are no “solutions” to such issues. There is only the constant flux and debate over them.

Attitudes toward this new communication field vary, of course. Gingrich’s Toffleresque futurism is quite optimistic about the democratization of information that the new computer culture might bring. This is not the place to go into all of this. It is enough to say that the early twentieth-century dream of containing information by summarization, of creating images that crystallized the essence of more complex fact clusters, is now gone.

Communism failed, Milan Kundera wrote in 1990, because ideology was defeated by the facts. Eastern Europeans stopped believing that the proletariat would grow poorer and poorer in the capitalist West but better off under state socialism. Reality, Kundera claimed, proved stronger than ideology. But Kundera was not so glib as to claim that “reality” ruled in the West. Rather, we are at the sufferance of what he calls “imagology,” the play of images that courses through our mass media. And why? Because, surprisingly enough, while reality proved to be stronger than ideology, images turn out to be stronger than reality.40 Not a bad epitaph for the early twentieth-century culture of representation.

38 While postmodernism is most often associated with image politics, it is useful to remember that a seminal document of the movement, Jean-Francois Lyotard’s The Postmodern Condition was subtitled “A Report on Knowledge” and explored the flow of information in the world around us.
39 For Sue Kelley, see Chicago Tribune, February 1, 1996, sec. 1, p. 6; BUCHANAN’S SISTER, NEW REPUBLIC ARTICLE IN MY OFFICE
values of white middle-class Americans, not the heritage of newcomers who live among them. They elect representatives to city councils who fail to understand the needs of immigrants for bilingual public services. They create legislative districts that seek to perpetuate white power.

The only way to combat these trends, Saito argues, is to elect group representatives and form ethnic coalitions that will protect minority interests against hostile and privileged forces. Until Asian and Latino Americans attained office in the suburbs of Los Angeles, their interests were consistently ignored.

Still, the evidence that Saito presents hardly negates the conclusions of Glazer and Moynihan. Ethnic minorities have begun to realize electoral success not only because they have developed effective coalitions of “outsiders,” but also because voting power is accessible to any constituency that can mobilize the votes to win. In that sense, Asian and Latino American electoral gains validate the democratic character of American politics.

Saito’s conception of ethnic identity also requires scrutiny. To him, group identities are formed in reaction to discrimination. Asians come to feel that they are Asian, for example, because they have suffered bigotry in the form of hate crimes, segregation, or the loss of employment or educational opportunities. But, is that all there is to it? Don’t Americans of Japanese or Chinese or Vietnamese origin also have long and rich heritages that they value for their intrinsic worth? Don’t these various heritages survive the construction of “panethnic” identities? Will the contributions of these groups to the United States only be measured by their efforts to assure that particular communities receive equal public services, and not by their efforts to enrich American life with the wealth of their cultural and religious resources?

Ethnicity certainly includes, as Saito argues, a reaction against hatred, but it also encompasses positive ideals and practices without which the American mosaic would be considerably poorer.

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Seeing and Believing
Kenneth Cmiel

Museums and American Intellectual Life, 1876-1926,
Steven Conn, Chicago: University of Chicago Press, 1998,
313 pp., $32.50.

Is showing something a good way to teach about it? Or does vision seduce, draw us away from any “serious” reckoning with vital issues? What, in other words, is the relation between seeing and knowing? Today we are awash in calls to become “visually literate,” that is, to learn more about how we see. And this doesn’t seem to be bad advice, given the constant barrage of pictures that bounce all around us. But these aren’t new issues. Plato struggled over good and bad ways of seeing. Iconoclasm was a recurring motif in the Hebrew Bible. In the New Testament, the apostle Thomas not only had to see but also touch the resurrected Jesus. What would Thomas have done in our world of virtual reality, where pictures dance before us without any physical contact? How would he have dealt with a resurrected Jesus who put up a web site to spread the word? Or who turned up as a sound bite on the evening news?

If issues of seeing and knowing have vexed humans for a long time, they have also vexed us in different places. Since the late sixteenth century, one site for this debate has been the museum. Ever since some curious aristocrats started collecting odd, little-known objects, and then invited scholars and friends to view them, museums (at first called “cabinets of curiosities”) have been enmeshed in debates about vision and knowledge. Steven Conn’s excellent book tells the story of how important American museums tackled this issue between the 1870s and 1920s.

The 1870s and 1880s were the “takeoff” moment for American museums, thanks to: a widespread bourgeois urge to upgrade educational institutions; city boosters’ dreams of creating cities to rival those of Europe; and the practically obscene piles of newly accumulated capital in the bank accounts of the wealthiest urbanites. Some of our oldest and most famous museums date from this period, including New York’s Metropolitan Museum of Art and Boston’s Museum of Fine Arts. Others, such as the American Museum of Natural History, expanded exponentially in those years. This wave of

Late nineteenth-century museums were organized around the notion that knowledge was embodied in objects.

Urban museum-founding moved west to places like Chicago and San Francisco in the 1890s and continued throughout the early decades of this century.

Steven Conn’s smart, insightful study principally tells the story of Philadelphia museums. That city’s Academy of Natural Sciences, Museum of Archaeology and Anthropology (at the University of Pennsylvania), and Museum of Art are some of the main subjects of his tale. Yet his account involves more than Philadelphia history. Conn deftly steps out of the local setting to use Boston, New York, and even Henry Ford’s
Greenfield Village as counterexamples. He also does a wonderful job of discussing the ideas of important museum figures who lived outside Philadelphia, people like the Smithsonian’s George Brown Goode and Columbia University anthropologist Franz Boas. He is particularly informative when he contrasts the Metropolitan Museum of Art with Philadelphia’s Museum of Fine Art over a fifty-year stretch.

Conn argues that late nineteenth-century museums were organized around the notion that knowledge was embodied in objects. Curators understood the world as imbued with an order that might be uncovered through the classification of things. The characteristic Victorian museum display was part of what Conn calls an “object-based epistemology.” Museums were packed with rows and rows of display cases, each filled with dozens of variations on a particular object gathered from around the world, and each item marked with a distinguishing label. The particular objects could be almost anything — fly, fish, hammer, hat. What was important was the classification. Museums aspired to be nothing less than encyclopedias of the world’s evolution.

Museum-goers at the end of the twentieth century still occasionally run across leftover bits of this system. Conn’s point is that what we might view as dusty and boring cases of stuff were, at the time, premised on some of the most up-to-date ideas of what knowledge was.

One of the author’s more intriguing insights is to see that late-nineteenth-century museums were places for new knowledge to be made as well as displayed. Curators felt that museums were sites where research would take place and new classifications would take shape; their institutions actively competed with
universities as sites of knowledge creation. In other words, museums were far more important to the culture than they are at present. In the long run, however, the universities won. Knowledge came to be seen as something embodied in books, not things. And museums came to be seen, at best, as popularizers of knowledge created elsewhere, or at worst as hopelessly behind the times and oblivious to the latest research.

During the first decades of the twentieth century, museums lost faith in the Victorian mission. They turned away from organizing their collections around objects. Science museums instead began using dioramas, those three-dimensional replications of animals in their natural surroundings, or dramatic simulacra, such as the famous coal mine at Chicago's Museum of Science and Industry. Fine art museums became interested in "period rooms" that blended various artifacts from a particular period to give the "flavor" of the time — or in grand stylistic tours: paintings in the Rococo period, followed by a Neoclassical room, then a Romantic room, and so on.

This book tells us a lot about Victorian museums. The thesis is new, the arguments persuasive. Still, readers should be forewarned: Conn has fallen into the trap of turning his subjects into heroes. As a consequence, he doesn't seem to like twentieth-century museums very much. He implies that attempts to create more visually dramatic displays amount to cheap popularization. And he clearly does not appreciate what museums of fine art have to offer, hinting that there is something anti-democratic about them.

I don't share such opinions, and I suspect others don't either. Yet the very problem I have with Conn's take on the twentieth century has taught me something about seeing and knowing. Today we reflexively categorize visual culture as seductive. The nation obsesses over the impact of televised violence. Educators hoping to engage their students often use pictures to make things seem more "alive," to get a better "feel" for the event, person, object, or period. Attitudes toward visual culture in the late-nineteenth-century museum were strikingly different. Those Victorian display cases were sober, responsible, and, to our eyes, resolutely boring. Attention to visual demonstration had very different implications than it does a century later. Today, surrounded by ever more pictures, and increasingly dazzling ones at that, we are far more suspicious of the idea that seeing leads to knowing.

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*Our Gorgeous Mausoleum*

Thomas Bender


This collection of essays by distinguished members of the American Academy of Arts and Letters combines strong feelings of attachment with a rhetoric of diffidence and hesitation. For that reason, I think, a famous phrase of Daniel Webster's unexpectedly kept echoing in my mind as I read A Century of Arts & Letters. Addressing the U.S. Supreme Court in 1819, in the important Dartmouth College case, Webster closed his argument in defense of the school's original charter with a peroration that had the same affecting quality of emotion as this book: "It is, Sir, as I have said, a small College. And yet, there are those who love it." Such is the tone here, though the material stakes are not nearly so high. The contributors offer an affectionate portrait of an institution for which they can claim little in the way of achievement but about which they obviously care.

The National Institute of Arts and Letters was founded in 1898; its even more exclusive companion institution, the American Academy of Arts and Letters, was founded six years later. The two merged in 1993, creating a single entity called the Academy, with 250 members. More than 1,200 Americans have been elected to the Academy-Institute in the course of this century. It is a considerable number, but one is struck again and again by the gap between the membership at any given moment and the individuals who seem, in retrospect, to have marked the creative achievements of that moment.

The Academy-Institute has never been representative of American culture. The geography of its location may, in this instance, reveal something about its relation to contemporary culture. Its "clubhouse" at 155th Street and Broadway in Manhattan, made possible by the generosity of Archer M. Huntington, was built across the street from a cemetery and far from the multiple sites of creative energy in the city. In his essay, the artist Richard Lippold describes the Venetian Renaissance building as "our gorgeous mausoleum on West 155th Street" and refers to election as "fossilization."

The institution was established in part to honor achievement. But too often, especially in its early years, it revealed little pre-science in the identification of genius, and a tendency to confuse propriety with accomplishment. The pattern of "mistakes" is somewhat predictable, given the founding ambitions and the leadership of Robert Underwood Johnson, the organization's
A. In the early 20th century, continued flow of fact.....statistics, bureaus of information, etc....

B. Yet at the same time, age of image..... In fact, a key effort to restrict the flow of fact through the power of the image....image was scary, yet could also provide answers...

C. Efforts to restrict the flow of information...
   1. museums and fact
   2. progressive education
   3. statistical sampling
   4. restatements of the law....
   5. new newspaper style (also Time Magazine)
   6. library weeding
   7. logical positivism

D. Yet this was by no means an end to information.....Rather, a way to summarize things. It was the age of summarization..
   1. in academic thinking (culture concept)(iconography)
   2. in popular thinking (American Way of Life)
   3. in museum display

E. Here is where image comes in; as a mechanism of popular summation....It not a question of losing sight of information, rather as summarizing it.
   1. the sociologists on the movies
   2. iconology.....
   3. key numbers invented to summarize whole -- GNP/Unemployment stat
   4. culture concept/idea of the national character

F. This requires sense of front room and back room
   1. front room image; back room knowledge
   2. literally the case in museums, where front and back rooms become key
   3. two sorts of libraries, research and public; research requiring everything to produce knowledge; publics constant sorting and weeding to summarize

G. Also requires certain pass-through mechanisms, places where more facts can pass through;
   1. public library, reference desk
   2. guidebooks (yet more summary than in Baedecker’s)
   3. indexes (reader’s guide)(social science index) (Facts on File, begins 1940)

H. Creation of a Mass Society
   1. comprehensive images (part for the whole)
   2. managerial knowledge (front room and back)
3. even summation for busy professionals..... indexes; restatements

I. Dewey/Lippmann recast

J. Problem: Fantasy in image.... can get away.....
   1. george hummell
   2. worries about movies
   3. guidebooks moving to fluff?
“From Knowledge to Information”
--Kenneth Cmiel

The breakthroughs of scientists from Babbage to von Neuman are standard fare in accounts describing the origins of the information age. Scholars, fascinated by the binary logic that can amass millions of bits of information so quickly, have tended, even when highly critical, to focus on the science and technology of the revolution. Cybernetics, information theory, the silicon chip and pixels are routinely seen as the sort of matter at the core of the revolution.

On one level, of course, that is undeniably correct. None of the important pieces of contemporary technology would be there without the breakthroughs of the scientists and engineers. But that is not the only meaning. Information, in recent discussions, has two very different uses. The first is derived from information theory and is important to the technological breakthroughs of the information age. But the second usage is far more ordinary. The “information age” in this reckoning refers to the growing availability of all sorts of facts and clusters of fact in exponentially increasing databases around the world. Apart from cybernetics, there is a mountain of writing on what two recent scholars have called “the social life of information.”¹ This literature ranges on everything from collapse of privacy to the dangers of chat room predators, to the glorious personal fulfillment now possible by roaming the information superhighway. But it is more resolutely social, with almost no discussion of information theory or digital image culture.
N. Katherine Hayles has recently published a wonderful genealogy of digital thinking.\(^2\) I propose to produce a parallel to this on the evolution of the social understanding of information. This essay will naturally be selective, picking a few figures to in the 1940s and 1970s. It will, I hope, put some postholes in the ground for further inquiry. And it will, I hope, illuminate a few broad themes related to emergence of current understandings of the information revolution. In particular, this paper will explore the drift in these discussions from knowledge, understood as disciplined generalizations about the social and natural world accepted by authority, to information, the massing of fact on particular topics. The information age is sometimes seen as the apotheosis of the Enlightenment, but it also reflects a late-twentieth-century ambivalence about the Enlightenment, rejecting its dream of social harmony through knowledge, leaving intact the belief in personal autonomy and salvation through technology.

*The 1940s – Science, Planning, and the Maturity of Industrial Civilization*

In the late thirties and forties a host of writers began a new phase of discussion on the prospects and problems of knowledge and information. Scientists, librarians, and social scientists dominated. We can use this discussion as a base line from which to explore metaphors about information more commonly used today. For the 1940s discussion was not about a postmodern social order, or a post-industrial one, or the origins of an information age. Knowledge and information, in this discussion, were crucial to the “completion” the industrial world. They were the epitome of modernity.
In the late 1930s a number of writers started commenting on the phenomenal growth of formal knowledge in the modern world. Science, social science, engineering, humanities – in all fields there had been an explosion in the production of knowledge. The institutional changes beginning in the 1880s had been profound: the creation of the modern research university, the rise of corporate laboratories, the massive actuarial tables produced by insurance companies, the ever increasing amounts of research done by national governments, and the emergence, especially in Europe, of government-sponsored research centers. The writers of the late thirties and forties were trying to assimilate what this massive change in the level of knowledge production meant. For they were convinced that the trend would continue. As the sociologist William F. Ogburn stated in 1937, there was now “some evidence to indicate that knowledge grows according to the exponential law.” The increase “is not a straight line going up, but a curved line growing by increasingly large amounts.”

World War II only intensified that belief. The contribution of scientists of all sorts in the pursuit of the war against fascism left those who follow the matter convinced that research and knowledge production were crucial to the modern world. Not only the atomic bomb, but radar, penicillin, the use of mathematicians to crack codes and of historians to analyze Nazi propaganda were all part of the war effort. This belief that knowledge and information were crucial cut across the political spectrum. J.D. Bernal, the British Marxist physicist, observed in 1945 that the “experience of the war has taught a very large number of scientists the vital place of an efficient information service.” The patrician Yankee Republican Vannevar Bush wrote in the same year: “Progress in the war against disease depends upon a flow of new scientific knowledge….Similarly, our defense against aggression demands new knowledge so that we can develop new and
improved weapons.” And right in between these political poles, Franklin Delano Roosevelt established a commission (with Bush in charge) to explore how the science generated by the war effort could continue after.⁴

By the 1940s, then, those interested in issues of knowledge and research were contemplating what it meant for industrial societies to be awash in formally produced knowledge. This was new. In the past, the classic tropes had been enlightenment versus ignorance, knowledge versus superstition. Such a view, dating back to the seventeenth century, remained crucial to the commentary on science in the 1860s and 1870s. By the 1940s, however, the questions differed. Now the issue was how to manage the copious research being produced by a multitude of universities, corporations, and governments. The massive production of new research created new issues. Organizational ones: How could knowledge be organized most efficiently? And communication issues: What was the best way to circulate all the new information to scientists and the larger public?

By the 1940s, it was common to hear that the research had grown so extravagantly that it had outstripped any capacity to organize its results. We faced, as one commentator put it, “documentary chaos.” In 1945, the editor of the *Atlantic Monthly* defined the problem as “making more accessible our bewildering store of knowledge.” Vannevar Bush argued that “the difficulty seems to be, not so much that we publish unduly… but rather that publication has extended far beyond our present ability to make real use of the record.”⁵

This was the organizational problem. Libraries were overwhelmed. Indexing was an imperfect art, to say the least. The abstracting of research was even worse. Researchers were hampered by the fact that they simply didn’t know what the others did. Everyone had stories of research duplicated because a researcher just didn’t know what
was already done. The war, once again, exacerbated the problem. Thousands of pieces of government research were written up for the first time as “technical reports” to move them along more quickly (and, in a few key cases, more secretly) than published articles. But how could any one keep track of this research? According to Fremont Rider, in one of the more widely circulated of the “knowledge problem” texts during the war, the “veritable tidal wave of printed materials yearly, monthly, hourly, mount higher and higher.” Libraries could never keep up, Rider said, but it was far more than a library problem: “We seem to be fast coming to the day when, unless it is afforded the most expert sort of bibliographical service possible, civilization may die of suffocation, choked in its own plethora of print.”

Non-existent in the debates on this problem was any discussion of the computer. Completely absent was any mention of the breakthroughs in “information theory” going on in cybernetic circles. As Warren Weaver observed in his now famous 1949 essay in *Scientific American*, the term *information* was used in cybernetics “in a special sense that must not be confused with its ordinary usage.” Indeed, in 1945, when J.D. Bernal published “Information Service as an Essential in the Progress of Science,” he was using the term *information* is exactly that “ordinary” sense. It referred to relevant facts, nothing more.

Not only was the computer absent, but this literature focused on a very different “breakthrough” technology – microfilm. Microfilm had been developed in the early 1930s. Many of these writers saw microfilm as the most important single way that the scientific cornucopia could be managed. It would reduce costs, could be sent through the mail easily, and solve the space-crunch in libraries. There were numerous schemes to expand the microfilm usage in these years. The one most widely watched was the
Bibliofilm Service, a private, non-profit organization that served as a national clearing
house to microfilm research and make it available to whoever needed it. It began
microfilming in the library of the U.S. Department of Agriculture in 1934. By 1937 it
was also working in the collections of the Army Medical Library and the Library of
Congress. The service grew impressively in the next few years. In 1939, the *Saturday
Review of Literature* waxed enthusiastic: Researchers of “all subjects for which printed or
manuscript materials are needed” could now, thanks to microfilm, find them effortlessly
and use them “in the peace of his study with all his notes about him at a fraction of the
expense which the European tour would have cost.”8

Microfilm as panacea remained a steady theme in the early 1940s, fading as a
cure-all only in the early 1950s. The organizational solution was as important as the
technology. Most important, for the late thirties and forties writers was to integrate
research into some more comprehensive social planning. “Planning” was a constant
theme in 1940s politics. The term at that time might be attached to a variety of different
political viewpoints. There were conservative discussions of planning as well as liberal,
social democratic, and communist. Research and knowledge production was only one
part of a more comprehensive belief in a planned society. It was a critical component.
There had to be better coordination of research – scientists and governments had to think
seriously about social needs and move science to address them.

Vannevar Bush, the New England conservative, called for better coordination of
research in one of the most widely read reports of the day. Bush, a Republican, wanted a
conservative form of planning, one that spent a lot of money for military and medical
research, that had the federal government do the funding but left considerable leeway for
scientists themselves to make decisions about it. Bush’s experience with the Manhattan
Project during World War II convinced him of one thing: throw a lot of money at the experts and they will solve the problem. Bush’s 1945 argument for better coordination between science and government was one important catalyst for the creation of the National Science Foundation five years later.9

Further to the left, the sociologist Robert Lynd also called for more research and planning. Writing in 1939, Lynd can best be described in American terms as a left-liberal. He was sympathetic to European social democracy. For Lynd, research had to solve social problems but social scientists had turned into mindless fact gatherers. There was no coordination to this mindless empiricism. Lynd argued that social scientists needed to ask better questions, questions about the real problems people faced. That was the only way that social science would do anything useful. He too called for planning, but unlike Bush, he did not automatically think the experts would get it right. He put the solving of social problems at the center of his vision. “Our problem is to discover how control can be used to enhance vital freedom to live creatively at points important to the human personality, by eliminating current wasteful freedoms that operate in fact to limit these more vital freedoms.”10

Finally, J.D. Bernal, the British Marxist physicist who wrote pioneering work on the sociology of science in the 1930s and 1940s, also called for planned research. In 1939, Bernal was comfortable citing the power of the five-year plans of the Soviet Union and contrasting them with the disorganization of capitalist science. Bernal spoke of the need for science to be in service of human needs. While a progressive government might set the agenda, Bernal thought, it was also important for the whole system to be flexible.11
Bush, Lynd, and Bernal, despite political differences, were all enthusiastic about planning. None raised questions about the difficulties of coordination. Moreover, better coordination would lead to better science. Bernal and Bush both used the image of the encyclopedia. In perhaps the only essay of this literature to suggest an important role for the future of the computer, Vannevar Bush argued that they would help solve the problem of disorganized knowledge, that the new machines had the potential to create “wholly new forms of encyclopedias.” Bernal asserted that the encyclopedia should be “a coherent expression of the living and changing body of thought; it should sum up what is for the moment the spirit of the age.” While that was the case in for the eighteenth-century encyclopedia, he claimed, its contemporary descendent had “degenerated into…a mere mass of unrelated knowledge sold by high-pressure salesmanship.” But more organized research would correct the problem.  

Lynd thought similarly. Modern social science, with its superficial sense of “order,” missed the fluidity of our experience, the “vast sea of uncertainty” that most people lived in. But Lynd did not relish this chaos. To have order in society, Lynd argued, science must be used to make some order in the social world. Only if used for socially beneficent purposes could there be any order. And while Lynd did not use the term “encyclopedia, he did argue that social planning was tied to intellectual synthesis. The order of society and the order of knowledge were homologous.  

For these authors, better coordination of research would not only lead to a better world, it would lead to better science and synthetic science. The planning of science would better public welfare and end the “documentary chaos” of the age. It would make formal knowledge as coherent as it had been in the (no doubt mythical) past. We could
write a new encyclopedia of knowledge. Planning would complete the Enlightenment project.

*The 1970s – The Failures of Planning*

A new wave of discussion about the knowledge revolution began in the 1960s. Authors like Fritz Machlup, Karl Popper, and Derek Price all explored the ways that the crush of information was restructuring society, the degree to which the production of knowledge was now defining economic performance. It was in this literature that the computer starts to be mentioned as an important contributor to the information explosion. It was here that the information revolution was not simply envisioned as a necessary part of industrial civilization. Instead, it pictured as a driving force, creating what by the 1970s was known as “postindustrial society.”

At first this literature was very optimistic, replete with praise for the beauties of the social planning of research. By the 1970s, however, more skeptical arguments surfaced. This literature was vast, yet two names have stuck out. The Harvard sociologist Daniel Bell began thinking about what he called the “knowledge society” in the late 1950s. In 1973, he published his massive summation, *The Coming of Post-Industrial Society*. Six years later, the French philosopher Jean-François Lyotard published one of the most famous essays of the last twenty years, *The Postmodern Condition*. Both Bell and Lyotard, in the late seventies, started to highlight the role of the computer in altering the knowledge landscape. Yet both also began to understand knowledge and information as out of control, unable to bring Enlightenment or social
peace. Both moved toward a post-managerial sense of knowledge. Lyotard the anarchist celebrated this; Bell the conservative hated it. Yet both found themselves very distant from the 1940s ideas about the information age.

There was some overlap with the earlier writers. Repeating a theme around since the 1930s, Bell argued that research-produced knowledge was growing at an exponential pace. And like earlier writers, Bell saw this knowledge as contributing to social management. He believed that such a complex society as ours needed planning, increased coordination, more professional and administrative skills. This was one of the most insistent refrains of his book.

Yet there were also important differences. Unlike the writers of the 1940s, for Bell knowledge was not the dutiful servant of industrial civilization. It had become the driving force of the economy. Knowledge, Bell thought, was displacing capital and property as crucial status and power markers in the postindustrial society. “The rated power of a country no longer rests on its steel capacity but on the quality of its science and its application, through research and development, to new technology,” he claimed at one point. “What I am arguing in this book,” he said at another, “is that the major source of structural change in society…is the change in the character of knowledge: the exponential growth and branching of science, the rise of a new intellectual technology, the creation of systematic research through R & D budgets, and, as the calyx of all this, the codification of theoretical knowledge.”

There were other differences from the writers of the 1940s. If Bell believed in managerialism, he was certainly no technocrat. Indeed, Bell spent nearly one hundred pages arguing that technocracy was impossible. There was, he claimed, a fundamental divide between scientists and politicians. The former were driven by evidence and
technical rationality, the latter by values and interests. New advances like Robert
McNamara’s famous Program Planning Budget System for the Pentagon might
rationalize accounting and provide better information but it would not define the basic
goals and pressures by which political decisions were ultimately made. Despite all that
research had accomplished, it only set outside boundaries for choices, it did not define
them. Politics is “always prior to the rational,” Bell concluded, “and often upsetting the
rational.”16

If science for Bell was in constant conflict with politics, it also collided with basic
cultural values. Bell believed, in the aftermath of the 1960s, that egalitarianism and the
lust for self-fulfillment were endemic in American life. It was this strain of thought that
pushed Bell to neo-conservatism in the mid- and late seventies (he withdrew from those
circles in the early 1980s). Everyone now claimed all sorts of rights, Bell sniffed. There
was a new sense of entitlement in the air. Everyone felt entitled to “do their own thing.”
Philosophers like John Rawls fed such sentiments. Gurus like Herbert Marcuse and
Norbert O. Brown preached them directly. These antinomian and anti-institutional values
sharply conflicted with the patient, sober rationality needed to produce the knowledge
needed in a post-industrial society. Bell became increasingly convinced in the mid-1970s
that this tension was reaching crisis proportions.

Bell’s vision was of a knowledge society but one in constant conflict with politics
and broad-based self-centeredness. Moreover, Bell had a specific sense of knowledge.
In Bell’s view, it was theoretical knowledge that was crucial. Information was relatively
inconsequential. Bell had very little to say about data in The Coming of Post-Industrial
Society. By theoretical knowledge, Bell meant the generalizations produced by formal
research. They occurred in almost all fields, from genetics to microeconomics, from
accounting to information theory. Theoretical knowledge was made up of powerful formal models and mathematical equations that extended managerial capacity, scientific reach, technological prowess, and economic productivity. Its importance could not be underestimated: “In effect, theoretical knowledge increasingly becomes the strategic resource, the axial principle, of a society.”

For Bell, the computer was important but not central. He criticized other writers for overemphasizing the importance of computerization. He critiqued information theory. He felt that the computer was an enabler, contributing to the capacity to for better modeling. It was a “bridge,” he said, between “the body of formal theory and the large data bases of recent years.” There was very little on computers in his massive 500-page 1973 tome. Computerization did not figure in the conclusions of any chapter. For Bell, the models themselves – the theoretical knowledge – were what mattered. They were the backbone of post-industrial life.

In the few years after the publication of The Coming of Post-Industrial Society, Bell grew more disenchanted with the drift of American life. The tensions between the culture of self-fulfillment and the knowledge-based economy became the binding theme of his next book, The Cultural Contradictions of Capitalism (1976). The second half of the 1970s saw Bell at his most explicitly neo-conservative. It was at this point that Bell wrote another take on the knowledge society. “Teletext and Technology: New Networks of Knowledge and Information in Postindustrial Society”(1977) contained far more pointed comments on both the computer and information than in the 1973 book. Given what he thought of them, it is not surprising they were highlighted as he became more disillusioned with the American life.
Bell argued that miniaturization of electronics, and the computer in particular, was central to an ongoing media revolution. Among other things this was creating a tidal wave of information, information that could be sent immediately around the world. Bell examples included United Press International’s new online system, where stories could be filed from anyplace on the globe, edited in New York, and then downloaded anywhere; or the 800 banks and 250 corporations, “from Hong Kong to Europe and across the United States,” which were now “plugged into a computerized monitoring service on the floating exchange rate.” Whereas a few years earlier, Bell had focused on theoretical knowledge, now he was impressed by the phenomenal amounts of data that computers could generate. During “any manned space flight,” Bell noted, “there is data transmission of the rate of 52 kilobits per second, the equivalent of an Encyclopedia Britannica every minute.” Since this explosion of information was going to continue, Bell thought, we had to find ways “to organize this torrential flood of Babel.”

Yet Bell was not so sure this could be organized. He was convinced that older notions of the unity of science, of the coherent encyclopedia, or of the library that contained “all the world’s recorded knowledge” were now obsolete. It was time to give up the ghost: “The attempts to discipline human knowledge and create a vast and unified edifice…were bound to fail. The efforts to formalize knowledge or construct ‘artificial’ languages have proved inadequate.”

Science could not regulate the flow; the only hope was the human management of the process. But this was exactly where Bell was becoming more sour in the 1970s. Cultural values were running against successful management. The communication and information revolution opened the nation to the “volatility of emotions, accentuation of demagoguery, and the possibility of plebiscitary democracy.” He summed up: “The
reduction of distance, clearly, has introduced a great potential for instability into political systems.”

In 1973, Bell had generally dismissed information and the computer. The core of the post-industrial society was the new power of formal modeling. Six years later, however, he argued that computer-driven information floods set the stage “for a major set of social upheavals.” Not surprisingly, then, Bell opened this essay with the weary words of T.S. Eliot:

The endless cycle of idea and action, 
Endless invention, endless experiment, 
Brings knowledge of motion but not of stillness . . . 
Where is the life we have lost in living? 
Where is the wisdom we have lost in knowledge? 
Where is the knowledge we have lost in information?

Six years after Bell’s mammoth *Coming of Post-Industrial Society* was published, and two years after “Teletext and Technology,” Jean-François Lyotard published his path-breaking essay, *The Postmodern Condition*. Lyotard, like Bell in 1977, saw the “computerization of society” as the jumping off point for recent social change. The very character of knowledge was changing -- and not for the better. The biggest change was what Lyotard called “the mercantilization of knowledge.” Knowledge would be validated if it had monetary value. Corporations could hoard huge banks of data. It was already weakening governments’ capacity to rule. “Increasingly, “ Lyotard wrote, “the central question is who will have access to the information these machines must have in storage to guarantee that the right decisions are made.”
Yet something else was going on at the same time, according to Lyotard. Faith in metanarratives was breaking down. Postmodernity implied a loss of faith in a happy resolution to history and certainly the end of the sense that knowledge would set us free. The postmodern condition was paradoxical -- distrustful of science but utterly dependent upon it at the same time.

Lyotard did suggest ways to navigate this sea. Since the faith in a scientific metanarrative had collapsed, he thought, there was now “a multiplication in methods of argumentation and a rising complexity in the process of establishing truth.”25 The pragmatics of knowledge were infinitely more complicated than when we simply trusted science. Now we had multiple language games: We could tell stories, recite statistics, or polemicize. There was no single ground for establishing truth.

Moreover, to oppose the increasing mercantilization of knowledge, Lyotard suggested “postmodern science,” which tried to create disorder, raise problems, challenge truths. The best language games were agonistic, according to Lyotard. The best science was “the antinomian of a stable system.” “Consensus,” he argued, “has become an outmoded and suspect value.”26

Like Bell, Lyotard saw the world in conflict. Neither was a systems theorist, technocrat, or functionalist. Yet for Bell, the conflict was tragic, reflecting the sorry but inevitable tensions between culture and technology. Lyotard, on the other hand, loved conflict. It was a sign of a free society. The absence of conflict was the real danger. Lyotard saw this as nothing less than totalitarian.

Bell, even in the mid-1970s, was trapped by the politics of the 1960s. For him, scientific rationality was arrayed against hippie antinomianism. Lyotard, on the other hand, seemed to intuit a new sort of activism emerging in the 1970s, when ecologists,
feminists, and human rights activists, to name just three, began producing alternative bodies of knowledge. Research was marshalled by all sides, not just the scientists trying to rationalize society. Information could puncture consensus as much as solve problems. Political actors used all sorts of language games as it pragmatically suited them. Postmodernism was not hostility to science, Lyotard argued, the nostalgia for the pre-modern was pretty much over. Postmodernism was multiple language games in agonistic combat.

In the end, Lyotard thought, computerization could become the “dream instrument for controlling and regulating the market system.” In that case, “it would inevitably involve terror.” But it could also aid activists by “supplying them with information they usually lack for making knowledgeable decisions.” In the final paragraph of the book he laid down his last prescription, one which was, in his own words, “quite simple: give the public free access to the memory and data banks.”

There were obvious and sharp differences between Lyotard the anarchist and Bell the conservative. Yet just as striking are their similarities, especially when compared to the perspectives of the 1940s. And comparing their similarities with the mid-century writers helps highlight new and more complicated attitudes toward the place of knowledge and information in the social order, indeed helps us see these writers distance from the Enlightenment dream of a world guided by knowledge for the betterment of humanity.

Both writers rejected the dreams of a healthy planned society. For Bell it was a failure to be bemoaned; for Lyotard a prospect to be avoided. Nevertheless, both came to believe in a fundamental agonism between knowledge and the social order, quite unlike the dreams of either Vannevar Bush or J.D. Bernal. The earlier faith that a properly
organized politics and science would produce a secure and healthy populace had vanished. The sense that the state could be trusted to represent the social was gone. Tension was in the air.

Both Bell and Lyotard, in second half of the 1970s, came to see the computer as key to changes in the social order. When looking at those who thought about the social uses of information, instead of information theory directly, it was the appearance of online data bases in the 1970s that made the big difference, not the interesting computer experiments of the 1940s. The focus on the computer by Bell and Lyotard in the second half of the 1970s was in sharp contrast to the forties writers, who saw the production of knowledge as the cumulative result of institutional changes reaching back into the late nineteenth century that had generated huge new quantities of formal research.

Moreover, this new computerization was actually undermining the dream of stable knowledge. Both Bell and Lyotard thought that the explosion of information stemming from the new online databases not only subverted the claim that knowledge would order society; it also undermined the sense that knowledge could be rationally ordered. For Bell, his vaunted “theoretic knowledge” was being choked by the waves of information now pouring into our computers. The transient facts of international currency markets were shooting around the globe, interpreted now a source of social instability rather than a prelude to good economic models. Bell explicitly rejected the Enlightenment dream of an encyclopedia of knowledge.

For Lyotard, the computerization of society contributed directly to the failure of the Enlightenment grand narrative – science marching along to bring prosperity or set us free. The new information age would lead to more disparity in wealth, not less. And the postmodern incredulity toward grand narratives was just the end of the
Enlightenment. Truth was now to be defined as pragmatics, useful according to context; science should be devoted to puncturing truths rather than finding them, creating dissensus rather than consensus.

Between the forties and the seventies there were significant shifts in the thinking of key writers contemplating the place of formal knowledge in modern society. They moved from faith in managerialism to skepticism. Well-organized knowledge would not steer the social order democratically. This was connected, at least in part, to a belief that the digitalization of knowledge, particularly the appearance of large online databases, helped undermine managerialism. And finally, it suggested the erosion of faith in knowledge itself, something not there at all in the 1940s writers. For Bell, the chaos of information undermined the dream of the encyclopedia. For Lyotard, the data banks helped kill the overweening faith in positive science. For both, the computerization of society meant not the completion of the Enlightenment in its modern form – the humane management of society – but its ultimate corruption. The dream of knowledge setting us free was buffeted about by the flood of information.

The 1990s – Information Wars

By the last years of the millennium the talk had all shifted to information. The computer was at the core of this discussion. Mass databases continued to be an issue, but so too was the world wide web. Communication technology of all sorts – the fax as well as the computer; the book as well as the screen – factored in, as did the increasing commercialization of the web. It was all summed up in the grand metaphor of “information.” It was the information age, the information society, the information superhighway, the information economy. “The idea of information has colonized new
areas of human activity,” wrote one law professor. Genetics, intellectual property, the international economy, marketing – everyone was pondering “information.” “One of the reasons we can describe our society as an information society is that we think of it as such.”

Much of the literature was celebratory. A spate of books appeared touting the glories of the new. Nicholas Negroponte’s *Being Digital* (1995) spent over a half year on the *New York Times* best-seller list. William Mitchell’s *City of Bits* (1995) was widely perused in academic circles. There were popularizers like Alvin Toffler and evangelists like Newt Gingrich. It was easy to find enthusiasts.

A number of themes repeated themselves in the celebratory literature. Most importantly, the new information age was good because it empowered people. It made distance unimportant. You could buy on the computer. You could do long-distance learning. In a variety of ways, it was claimed, the new digital culture gave people more control over their lives. You didn’t have to travel to the office but could work at home. News came from all over the world. You could respond to email when you wanted to. Soon you would be able to watch television shows when by your schedule instead of the networks. Entertainment, news, and the workplace all were being restructured to adjust to the schedules of individuals.

A second guiding theme was “demassification.” Industrial civilization was over. Institutions would probably get smaller. They would have to be more flexible. Businesses, universities, governments all would have to adjust to the needs of their employees. Work would get done via small networks that would come together, solve problems, then disperse. There was almost no consideration of how this might affect employees who might “flexibly” lose their jobs along the way. In general, the
enthusiasm for the new undercut any consideration of economics. In fact, the most explicitly pro-market writer was the only one to directly address the issue. Nicholas Negroponte argued (Newt Gingrich made similar claims) that the minimization of corporate bureaucracies would be offset by a new entrepreneurialism. Corporate post-Fordism was an opportunity, not a loss. Former white-collar employees will “increasingly work for themselves,” Negroponte argued. Corporations will outsource work to former employers. The implication was that this would give these workers more control over their day-to-day life. “By the year 2020, the largest employer in the developed world will be ‘self.’ Is this good? You bet.”

Not only would businesses need to be more flexible, so too would academia. The departmental system was clunky; the disciplines and their apparatus cumbersome. Interdisciplinary work would become common, according to Michael Hobart and Zachary Schiffman. Similarly, Negroponte approvingly told of an applied engineer who didn’t read scholarly journals anymore. They were just too slow. Instead, he got the information he needed from conversations with colleagues and the Wall Street Journal.

All the writers found in the new information age the prospect of more harmony. According to William Mitchell: “The uncertainties and dangers of the bitsphere frontier are great, but it is a place of new opportunity and hope…. This will be the place for a global village.” Michael Hobart and Zachary Schiffman, in their more academic Information Ages, argued that the new turn would bring the humanities and sciences back together early in the twenty-first century. According to Negroponte: “The harmonizing effect of being digital is already apparent….”

This said, most of the enthusiasts qualified their enthusiasm in some way. Most were not quite as simple-minded as their critics made them out to be. William Mitchell,
in *City of Bits*, knew that “telemolesters” would lurk the internet. He closed the book with a serious discussion of inequality. “If equality of opportunity and symmetry of participation are valued, then all classes of users (not just privileged groups and institutions) should be able to create as well as receive information.” He called for a national information infrastructure available to all, whatever the cost. “Surely the fundamental challenge in building the bitsphere will be to deploy access according to principles of social equity – not in the ways that heighten the privilege of the haves and further marginalize the have-nots.” Paul Levinson, in his enthusiastic account of the information revolution, reminded his readers that digital culture did not equal all of life. Fine food, a beautiful cup of coffee, making love with “a flesh-and-blood partner” were not to be had in cyberspace. These were not limitations to bemoan, but things to rejoice. For Levinson, as great as the information revolution was, it was not everything.\(^{36}\)

While the term “information” was almost a mantra in these books, there was, oddly enough, very little talk of information or what it was. These books looked almost exclusively at how the new technology would aid people’s lives. But when they used the word information, it had a more capacious meaning than in the previous authors I’ve looked at in this paper. “Information” now referred to video as well as news; movies as well as social statistics; popular music as well as the stock market. The talk of “information” in these books became far more “promiscuous.” “Entertainment is information,” asserted William Mitchell.\(^{37}\) Like the web and its search engines, these books broke down the lines between serious and sensational; the true and the false. All were now “information.” Lyotard had not used the word in this way. Neither had Bell.

“Knowledge” was a word hardly mentioned at all. It simply did not factor in most of the celebratory literature. In the last, Hobbart and Schiffman’s *Information Ages*,
knowledge was discussed. The authors (both historians) argued that we should see that contemporary information technology marked a historic turn away from knowledge. If the search for wisdom marked the pre-modern world, and the drive for systematic knowledge appeared with the moderns, the contemporary world was witnessing a historic transfer from firm knowledge to transitory information. The play of Boolean logic tied to power of the new machines created a new configuration. Analysis was “torn” from any philosophical foundations, and “reduced to pure technique.” Based on notions of flux, play, and emergence, this form of knowing was “expansive rather than reductive and open-ended rather than closed.” The computer “has elicited…information potential…apart from any foundation in knowledge.”

While there were many who tried to spell out the glories of the new technology, not all have been celebratory. In the past few years, there have been at least three strains of literature critical of the new information technology. One has expressed nostalgia for lost meaning, the second has suggested called for a more balanced appraisal of the new technology, the third is a legal discourse principally interested in the issue of privacy.

The first critique finds the contemporary preoccupation with information a deep and troubling loss. Information has eroded meaning; it has corroded our sense of reality. Knowledge of nature, or even culturally embedded knowledge, is being lost to the decontextualized pursuit of information. There is a loss of permanence. Whatever “overt misery” information technology might be alleviating, Albert Borgmann writes, it still is “aggravating a hidden sort of suffering that follows from the slow obliteration of human substance.” He continues:

It is the misery of persons who lose their well-being not to violence or oblivion, but to the dilation and attenuation they suffer when the moral
gravity and material density of things is overlaid by the lightness of
information. People are losing their character and definition in the levity
of cyberspace.”

Borgmann presented his argument in the guise of a history. His historical
trajectory bore a distinct similarity to Hobart and Schiffman’s celebratory Information
Ages. Both agreed that information is abstracted from experience. Both agreed that the
recent turn has been toward technique divorced from meaning or philosophical
justification. Both had some version of a grand historical march from wisdom, to
knowledge, to information. Yet they evaluated this in practically opposite ways. For
Borgmann, the abstraction was a problem, distancing us from any tangible connection
with reality. For Hobart and Schiffman, however, this was giving rise to a new
intellectual power – we could manipulate data as never before thanks to the computer.
We could indulge in “the creative magical play of human curiosity and exploration.”

At stake here was the question of how meaning happened. For critics like
Borgmann, contemporary information, decontextualized, tore us from cultural or natural
knowledge and left us bereft of meaning. But did we need to gather meaning through
information? Couldn’t it derive elsewhere? A celebrant like Negroponte did not directly
address the question of meaning, but he seemed to assume that people made their own
meaning up as they pursued their particular life course. Borgmann needed a coherent
cultural context, a community, to establish meaning. Negroponte didn’t. Moreover, for
Borgmann, meaning depended upon contact with a tangible reality. Negroponte wouldn’t
disagree, he just thought that such reality was not cancelled out by cyberspace. For
Negroponte, digital culture by no means erased tangible reality, it enhanced it and made
it less disagreeable to navigate.
A second group of books called for a more balanced assessment of information technology.\textsuperscript{42} It is neither a panacea nor our demise. It needs to be calmly assessed, the good sorted out from the bad. It is a mistake to leap too far in either direction. N. Katherine Hayles argued that human beings may enter into “symbiotic relationships with intelligent machines” but the fact of the human body, and all it experiences, limited how far they might merge. The connections between people and machines were thus a cause for concern, but she cautioned against “the apocalyptic and toward a more moderate view of seriated social, technological, political, and cultural changes.” James O’Donnell, addressing very different issues, argued that the challenge today was “to balance old models with new modes of behavior” to “exploit the possibilities of the new environment effectively without disorienting us so completely that we forget who we are.”\textsuperscript{43}

These moderates generally presented themselves against the celebrants. Information might do a lot of good things, but it had limits and was no utopia. But if this group wrote in mild opposition to the extravagances of the celebrants, they also can be read against the “loss-of-meaning” critics. For their point was that these changes were full of good and bad. As the new technology was only a part of life to the balancers, it did not, by its nature, corrode meaning.

Apart from loss and balance, a third contemporary way to be critical of the information revolution is to raise the issue of privacy. These critics range from the soberly mainstream (Rosen’s \textit{The Unwanted Gaze}), to the technolibertarian (Wallace and Mangan’s \textit{Sex, Laws, and Cyberspace}), to books critical of technology and capitalism at the same time (Garfinkel’s \textit{Database Nation}).\textsuperscript{44} Despite the political differences, all explore the ways that private databases are now gathering material on citizens. All are oriented to the law, asking for the state to step in and rectify the situation. This is the
body of current commentary that most explicitly pursues Lyotard’s theme of the “mercantilization of knowledge.” All these authors worry about private companies collecting and selling data on people. The information revolution is not life-enhancing, as the enthusiasts think, but threatening. All, even the more radical Garfinkel, expressly defend the notion of personal autonomy.45

It is the discomfort with the commercialization of information that most directly sets this cadre off from the enthusiasts. They, at least among those writing books on current information politics, are most critical of the specifically capitalist dimension of this. They do criticize the government for its efforts to monitor information, for example through the regulation of encryption. Their primary emphasis, however, is on what they consider the frightening misuse of information, the gathering of elaborate databases on individual consumption, video surveillance, the irresponsible handling of medical records, and so on.

Despite certain commonalities with Lyotard, there are just as many differences. Lyotard closed The Postmodern Condition by asking for the databases to be opened to all. “Language games would then be games of perfect information at any given moment,” he wrote.46 That is not the solution for the current writers on privacy. They argue for the protection of people from data. Garfinkel is closest to the anarchist side of Lyotard in calling for privacy activists to organize like ACT UP! or EarthFirst! “Privacy terrorists,” or a “privacy underground,” Garfinkel suggests, might “out” corporate privacy invaders, “publishing the names, addresses, home telephone numbers, Social Security numbers, incomes, and buying habits of individuals who head the organizations that are attacking our privacy now.”47 Still, Garfinkel calls for new law and protection of
privacy, not the opening up the information vaults. Other writers on privacy, closer to the mainstream, do so the same.

The most recent writing on the information age, whether celebratory, cautious or critical, still exhibits some distinct differences from both the 1970s and 1940s commentary. The discourse of central planning has almost completely vanished. The idea of coordinating knowledge production and social policy for the social good has largely collapsed. It is not only conservatives who rely on the market. They are just more explicit about it. Those critical of the “chaos” of the information age do not respond today with calls for disciplined central planning of research for the common good. Instead, they look for meaning, for balance, for laws that protect personal autonomy. This is a very different setting from the 1940s.

Nor is there much talk of “knowledge.” In the 1940s, most information talk was in the service of knowledge. Today, no matter what the evaluation of the present, all pass by “knowledge,” at least the term. The enthusiasts ignore it or accept its demise. The loss-of-meaning commentators look behind it for wisdom and meaning. It is not a word that matters for the privacy writers, who simply want the power of law to protect us from the profligate spread of information. The only people who mention it are the political centrists, who at times express a wistful hope for some recognition of “knowledge.” But even there it is not a central strain.

In the 1940s the call was for “order.” And there was the sense that it could be planned. Today the rhetoric is of fluidity, motion, speed. “As everyone knows,” Mark Slouka notes in *War of the Worlds: Cyberspace and the High Tech Assault on Reality*, “unreality increases with speed.” But it’s exactly this unreality that “we’ve grown used
Brown and Dugald, in *The Social Life of Information*, argue that “with the digital, while transportation and mobility are enhanced, immutability is diminished.” Web pages constantly change, they note, and “there are good cultural reasons to worry about the emphasis on fluidity at the price of fixity.” It is not only the critics, moreover, who describe the current information flow in fluid terms. The celebrants have reveled in the instability of the new information technology. Information “appears not as a fixed structure, timeless and true, but rather as ongoing, playful activity….”

Such an information regime has little in common with the Enlightenment encyclopedia, which tried to order knowledge. Now all is in flux. In the last half of the twentieth century, the discourse on the production and use of knowledge has gradually drifted from its high modern faith in rational planning. This is bound up with the move from knowledge to information. Without the faith in coherent knowledge, depending on our dispositions, we either pursue our own agendas, search for meaning, try to keep our balance, or look to the state for protection. In the rhetoric of the enthusiasts, faith in the technology has replaced the disciplined search for knowledge as the social glue. The information age travels in the wake of the Enlightenment, certainly, but in a nuanced way. The coherent encyclopedia is gone, as is its twentieth-century replacement -- the social organization of knowledge production. The political value, personal autonomy, remains but without the quest for understanding. This is Kant's Enlightenment split down the middle. After knowledge, all that is left is information.
NOTES


28 Lyotard, like a number of postmodern writers, wavered between seeing the postmodern as a result of a new historical situation or as the result of an epistemological breakthrough. In *The Postmodern Condition*, Lyotard emphasized the former.


33 Negroponte, 240.

34 Hobart and Schiffman, XX; Negroponte, 76.

35 Mitchell, 173; Hobart and Schiffman, 260-68; Negroponte, 230.

36 Mitchell, 19-20, 168, 171; Levinson, 228-29.

37 Mitchell, 60.

38 Hobart and Schiffman, 6, 202.


40 Borgmann, 232.

41 Hobart and Schiffman, 236.


43 Hayles, 284-85; O’Donnell, 13.


45 Garfinkel, 271.

46 Lyotard, 67.

47 Garfinkel, 270.
48 The one exception in the literature discussed here is Mitchell’s *City of Bits* in which he urges “policy makers” to create “national information structures” available to all. See, *City of Bits*, 167-71. The quote is from p. 169.

49 See Rosen, 200-02, 223-24; Brown and Duguid, 147-72.

50 Slouka, 3.

51 Brown and Duguid, 198, 201.

52 Hobart and Schiffman, 237.
**Impressions**

It was just one sentence in the middle of page 260. Actually, just a clause. But there it was: “Facts make little impression on the Annamite mind….,” What was this about?

*Annamite*, of course, means “Vietnamese.” It is a term still commonly used in French and, in 1937, when the sentence was written, common enough in English as well. The sentence is from *French Indo-China*, authored by one Virginia Thompson, Ph.D. Not everyone liked the book. Herbert Ingram Priestley, in the *American Historical Review*, called it “adequate.” Another reviewer complained of loose writing. Still, the *Times* of London called it “remarkable” and the book was one of the most widely consulted studies on the subject for the next decade. Thompson, not a specialist herself, nevertheless summarized all the specialist literature there was on Southeast Asia.

And she added her own point of view. The inability to grasp fact was but one tiny float in Thompson’s parade of prejudice. Vietnamese were trapped by ritual. Their thinking was “confused and imprecise,” unable to grasp scientific method. Annamites were cruel and fatalistic, with a “flair for imaginative lying.” Their nervous system was “certainly less sensitive than the Occidentals.” If Edward Said hadn’t invented the study of “orientalism” in the late 1970s, it would have to be created for Ms. Thompson. Her work, popular at the time, is almost a caricature of the genre.

Thompson wasn’t any right-wing crank. She hung out in popular front circles in the late thirties and forties, most notably with the Institute for Pacific Relations, which Joseph McCarthy attacked after World War II. Thompson was a bit player in the Cold War dramas but not entirely off stage. In 1952, the McCarran Committee, the Senate committee ferreting out communism in American life, identified her as a “writer for official publications of the Communist Party” and for “pro-Communist press services.” No demonstrable Marxist point of view turns up in Thompson’s 1937 book. She was a liberal. Her book does indicate, though, how widespread such prejudices about the Vietnamese were at the time.

Whatever the new interest in image in the United States, Thompson’s prejudices also highlight the still commonly held belief that information was a special province of the West. We assimilate facts; “they” can’t get it. Moreover, the new western distrust of the fact was not about information itself, just about communication. An image might simplify complicated research. It didn’t replace it. Southeast Asia, for Thompson, was an entirely different place: “It is impossible to get precise information from an Annamite.”

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In 1945, the American image was huge. Larger than life. Wondrous. The nation’s most important images glided across movie screens and paraded through the weekly newsmagazines. Hollywood, *Life* and *Look* and the *Saturday Evening Post*. Millions looked at them each week. These images caught the life of the country – sometimes with a maddening superficiality, sometimes with great profundity. Yet they caught it. The country was *in control* of its visual culture. The story of the next fifty years was of the gradual erosion of that assurance. By the new millenium, the image culture was far more chaotic. There was more play than before, more freedom. Video game violence, internet porn, HBO’s *Sex in the City* -- millions of Americans were comfortable with this. But there was also more nervousness and concern. To cultural conservatives by the 1970s, and even many moderates by the 1990s, the image culture seemed dangerous, even sinister. Internet pornography, movie violence, the erosion of TV censorship, the mind-numbing distraction of video games -- it all seemed so crass, so ugly. Technology, style, and the law had all somehow colluded to ruin the mid-century safety. Images had spun out of control.

*A Defined America*

At mid-century, the single most important purveyor of human-made images in the United States was Hollywood. The motion picture industry produced XXXXXX movies each year. Through World War II, weekly attendance was in the tens of millions. Even in the first few years after the war, although attendance was dipping, movies remained the most compelling images there were. Hits of the 1940s – *Casablanca*, XXXXX, XXXXX, all attest to the import of Hollywood in producing images of ourselves.

Hollywood also produced another sort of image – the newsreel. Newsreels were 3-6 minute shorts shown before movies in theatres. They usually combined short snippets of four or five stories, news stories or topical interest. Recent events in Europe or Asia might be one story; the latest jitterbug another. Made from the 1910s to the 1970s, newsreels were most important during the years of the famous “March of Time” reels – from 1935 to 1951.

The third defining image was the documentary photograph. The thirties and forties witnessed the emergence of new magazines devoted to giving the news through pictures. *Life* Magazine was the first. It began publishing in November 1936 and was an immediate success, selling XXXXXXXX copies each week by XXXX., the most popular magazine in the nation. Shortly after, *Look* was founded by the Iowa newspaper publisher, Gardner Cowles; then the *Saturday Evening Post* adapted itself to the genre. Led by *Life*, they adapted the “photo essay” from its European origins, stringing together one to two dozen pictures on a single theme, which told the story. For the first time in
modern print journalism, the picture was the centerpiece while the prose played a supporting role.

Apart from the centrality of photojournalism, there were other outlets for photojournalism.

Hollywood and photojournalistic images, despite their very obvious differences, did share certain features. There was an ease of expression in both, a gracefulness about them, even when they took on somber subjects. They drew the eye in, held its attention. They were fascinating things to look at.

During the twenties and thirties, Hollywood learned how to weave countless bits of film together into seemingly seamless stories. Compared to the early 1920s, the visual quality of 1940s Hollywood cinema was so much more sophisticated. The sound revolution of the early thirties was so dramatic that it generally obscures the visual changes between the early twenties and mid-forties. Cameras became mobile. Directors and editors mastered techniques like the “eyeline matches”, “180º rule”, and “shot/reverse shot” to move action along in scenes. The introduction of incandescent lighting in the late twenties helped directors use light to draw viewers’ eyes to particular points on the screen or to create mood. Light no longer just lit a set.1 An ethos grew in Hollywood, one not nearly as strong among European filmmakers, to create smoothly edited product. By the 1940s, it was the conventional wisdom: “The use of pictorial continuity is the secret of good movie making.”2

The results were dazzling. While all the techniques had been developed in the teens and early twenties, it still took some time for them to work into routine practice. In movies like Rudolph Valentino’s *Four Horsemen of the Apocalypse* (1921) or Douglas Fairbanks’ *The Mark of Zorro* (1925), the camera remains stationary almost throughout. It is not surprising to see a single camera shot stay put for an entire scene. These movies still often feel like they are stage plays being filmed. Within a couple of years, however, by the end of the twenties, that was very uncommon. A decade later, classic Hollywood cinema, films like *Casablanca* or *The Wizard of Oz*, fade in and out, their cameras roll along as actors move, their lighting pulls our eyes to particular figures or objects. Each scene is carefully sutured together, linking establishing shots, close-ups, character reactions, cuts back and forth between speakers. Within each shot, characters are posed with nearly the same care that Carravagio set subjects in his paintings. There was nothing casual about it.

The elaborate staging and editing was done in a way to make the final product seem utterly effortless, to pull attention away from the movie-making process and to the characters and story. Directors didn’t care that movie goers didn’t know what a “shot/reverse shot” was. They wanted to keep the public staring at the screen, watching their stories. The staging and editing were elaborate devises to keep people fascinated with the images but ignorant of the mechanics. Some of the technology was there before the thirties, and all of the particular editing techniques had been invented earlier. But by the middle of the thirties, it had been codified into a system. There was a way to do it now. These were movies, not plays.
The documentary photographers of the thirties and forties had their own craft and technology. The photojournalistic movement owes its origins in large part to a new sort of camera – the leica. The leica was the first small, hand-held camera that could produce really high quality pictures. Lewis Hine, the famous turn of the century photographer of American slums, still had to carry his big box camera out to a neighborhood and set it up on a tripod. It was big thing, clumsy to handle, and Hine had to pose his subjects. The leica, on the other hand, was light, easy to carry, easy to use. Its shutter speed was phenomenal for the time, allowing it to catch unposed action. Invented in 1911 by Oscar Barnack, a German microscope technician, the leica was mass produced for the first time in 1925. Germany’s first photomagazine appeared the next year. In the United States during the thirties and forties, every Life photographer save Margaret Bourke-White used a leica.

Technology might have made photjournalism possible, but its characteristic style was not dictated by any camera. Photojournalism, and documentary photography more widely, more than anything else was an attitude about the image. While the leica allowed swift unposed action to be captured cleanly on film, on other occasions documentary photos could still be as carefully crafted as Hollywood fantasy. According to Arthur Rothstein, one leading documentary photographer, the picture taker had to be “not only a cameraman but a scenarist, dramatist, and director as well.” Roy Stryker, who ran the FSA documentary photography project, argued that there were “times when you simply have to pose your model.” The key, for Stryker, was how you did it, “honestly” or “dishonestly.” Henry Luce, the owner-editor of Life, put in another way: picture-takers should use “fakery in allegiance to the truth.”

In documentary photography, the image had to be more than a picture, more than an illustration of an event. Form and content had to merge to say something important. Wilson Hicks, the Executive Editor of Life in the forties, recalled that the magazine’s photographers had to grasp “the camera’s extraordinary capacity for recording more than a mere image.” Good photojournalists used pictures to grasp an “essence interpreted.” The great and famous photos of the era – Dorthea Lange’s “Migrant Mother,” Robert Capa’s soldier falling in Spain, Margaret Bourke-White’s 1945 Buchenwald photos, Eisenstadt’s raising of the flag at Iwo Jima – all echo far beyond the event recorded. They were mythic.

In this they were just like classic Hollywood movies. Hollywood’s stories were fables – of everyman fighting corruption (Mr. Smith Goes to Washington), of overcoming class and gender conflicts (It Happened One Night), of confronting the terrors of the unknown (Wizard of Oz), or of learning to stand up for yourself (The Grapes of Wrath). The convention of happy, uplifting endings limited Hollywood’s range but also helped shape the films. Once the Production Code went into force in 1934, all the beautiful images and people on the screen told modern morality plays.

Documentary images had a greater range. Yet it too had a message. There was great faith that photography could matter, that PHOTOJOURNALISM WAS MORE DIVERSE.

Apart from guiding the eye and the thematic focus, the images of the 1940s were shaped by the law. It was not going to be the case,
COLLUSION OF THE LAW
OUTSIDERS (WEEGEE) (PORN)
CRITICS (WORLD WAR II)
NORMAN ROCKWELL!
LAW, TECHNOLOGY, AND STYLE.....

*Fade-Out*

This system slowly crumbled during the 1950s and 1960s. The first sign was shrinking movie attendance. In 1946, the industry pulled in $1.7 billion, the top box-office take in American film history. But by 1953, weekly movie attendance was only 25% of what it was in 1948. And the decline continued. By 1962, movie box office receipts were only $900 million. In those same years production costs were rising, really putting the pinch on the industry.5

Although the decline started before the explosion of television, the competition of the new medium after 1950 helped the hurt. TVs were in about 1 million homes in 1949 but in 10 million homes by 1952. Within a few years they were ubiquitous, contributing to the decline in movie attendance and the death of the movie newsreel. TV news provided the same images, more immediately.

TV, moreover, produced a new sort of image. TV pictures were, at first, grainy and without the clarity of movie images. Even when the quality improved later in the decade, TV remained different. The larger than life image of the movie was gone. TV images could not overwhelm you, draw you in to their magic the way movies did. TV did its work differently, by creating an utterly comfortable, private setting in which to view. You could stretch out on the couch, lounge on the floor, talk during the show, watch in your underwear. TVs attraction was not its pictures, it was its environment.

Other changes in the visual culture were underway at the same time. A stream of darker images about American life began to surface outside the grimy world of tabloid newspapers. The vogue for film noir was one sign. Films like *Mildred Pierce* or *Out of the Past* explored murder, female duplicity, and the general hardness of urban life. Such themes were portrayed as the norm rather that the exception, and unleavened by any happy ending. The visual style of noir, dark and shadowy, full of claustrophobic interiors and grim streetscapes, built the menacing mood.

The same darkness turned up in the increasing creepiness of Alfred Hitchcock’s films through the fifties and early sixties – *Rear Window, Vertigo, Psycho, The Birds*. Similarly, Robert Frank’s 1959 book of photos, *The Americans*, displays a very different
America from the great photojournalism of the 1930s. Frank harsh light and grainy texture created a grittier, bleaker mood than in the Depression-era pictures of a Dorthea Lange. While Lange portrayed poverty, there was also a dignity to her subjects. They were holding up under adversity. Frank’s camera, however, was less forgiving. There was nothing to mitigate the bleakness.

Censorship was also breaking down. The legal regime that had propped up the 1940s image culture was disappearing. Playboy first published in XXXX. Hugh Hefner kept expecting the police to take the first issue from newsstands, but they never turned up. In 1952, the US Supreme Court overturned the 1915 Mutual decision and gave movies First Amendment protection. Since the early 1930s, however, Hollywood censorship was done by the industry, not the courts. The Production Code Administration (PCA) of the industry’s trade organization, the Motion Picture Association of America, was where censorship happened. Consequently, the 1952 change in the law did not mean the end of censorship. Instead, it gave directors new courage to fight the censors. In the next few years, various directors locked horns with the PCA: Otto Preminger for his light sex-farce, The Moon is Blue (1953), and his grim portrayal of heroin addiction, The Man with the Golden Arm (1955); Laslo Benedek”s tale of roaming motorcycle hoodlums, The Wild One (1953); and Elia Kazan’s Baby Doll (1956), his nasty Southern gothic of adolescent female sexuality and the slobbering men in tow.

The censors might have been on the defensive but they weren’t dead. Kazin had to negotiate scene changes in Baby Doll just as he had five years earlier for A Streetcar Named Desire. Through the fifties and early sixties, such negotiations with censors continued. The movie industry was not willing to make a full-front challenge. In the 1950s and the early 1960s, new things were portrayed on film, but there were still limits to what was shown.

The same was true of other visual media. Few in the magazine business wanted to challenge conventions. Life, Look, and the Saturday Evening Post all kept limits on what they portrayed. Television was the most conservative. In the 1950s, shows like Superman, Father Knows Best, and Gunsmoke portrayed a strong, self-confident, and benign United States of America. Nuclear families were intact. Leaders cared about the public good. “For truth, justice, and the American way” was how Superman was introduced each week. Even into the next decade, family fare like The Lucy Show or The Dick Van Dyke Show was the norm. The Beverly Hillbillies and Bonanza remained among the most popular shows on. Despite the occasional “daring” show in the late sixties, television remained a very conservative medium.

Still, the fade-out of the old system continued. Despite a renewed idealism among early 1960s photojournalists, particularly around the civil rights movement, the long-term trend was against striking print pictures. Television news and shifting patterns of advertising revenue would soon kill the great photo-based magazines. The Saturday Evening Post died in February 1969; Look in October 1971. Life hung on until December 1972 when it too shut down. The old photojournalism, with the centrality of the photo-essay and iconic picture, was dead.
Big screen gimmicks and color as a counterweight to new image culture…..

In the end, however, it was a British movie directed by an Italian that signaled the final nail in the coffin for the older visual culture. Michael Antonioni’s 1967 film, Blow-Up, broke all the old rules. Blow-Up was the story of a hip London fashion photographer who accidentally took pictures of a murder in a park in London. Since there was nudity in the film, the producers worried about the censors. The producers decided simply to ignore the censors, to release the film without any rating. And there were no repercussions. The old censorship system was now dead.

There was another aspect of Blow-Up, though, that marked the end of an era. In the film, the photographer only suspects that he has seen a murder being committed. When he returns to Hyde Park, the body is gone. No trace of the crime is left. He returns to his darkroom, gradually blowing up the image to find proof of the crime. But as the picture gets larger, the resolution gets worse. Finally, the resolution is so bad that the picture turns into an incomprehensible set of dots. The pictures can’t provide evidence that there ever was a murder.

For over a century, since the invention of the daguerreotype, a steady belief had been that the camera helped us to see more clearly. It left us evidence of what wasn’t immediately available. The message of Blow-Up, however, was that the camera did not necessarily leave us with a better picture of the world. The same year that Blow-Up came out, the French critic Roland Barthes was writing about “the reality effect,” the ways that novelistic (and photographic) techniques create a sense of “the real.” In a few years, the notion that the camera captured reality would be suspect.

The New Regime

In the 1970s, a new image culture started to take shape. It was a far more varied than what came before. There were fewer images in charge, fewer gaps. And just as the mid-century image culture, this new regime came out of a blend of aesthetics, law, and technology.

Pictures multiplied. They were in more places, in new technologies. Video games, cable TV, the internet, and home video cameras all made images more available. The nation now seemed to be drowning in pictures. Televisions themselves spread in these decades – from the late fifties when the norm was a single TV in the house to the 1990s where the average family had 2.9 TVs and where 65% of teenagers had televisions in their bedrooms. In the 1950s, TVs outside the home were generally restricted to the local tavern. In the eighties and nineties, they spread to sports bars, hotel lobbies, casual restaurants, doctors’ waiting rooms, airports. New channels surfaced for televisions in special places – the Airport Network, the Food Court Entertainment Network. “Ambient television,” as this was known, actually repeated the spread of reproduced sound in the forties and fifties, the point when transistor radios, small table-top radios, the 45 record,
background musak in elevators, and radios in cars all made mechanically reproduced sound a part of the everyday environment instead of a special occurrence. By the 1990s, the same was happening with images. By 1993, over 28 million people watched television outside their homes each week.⁸

At the same time that the pictures multiplied, their iconic quality was blurred. There were more images, but any one of them weren’t as important. Niche marketing meant that apart from the rare blockbuster, people watched the same thing less and less. Magazines were geared for gradations of age groups. Cable meant that the television audience was fragmenting. Movie audiences continued to shrink. Unlike the 1940s, people looked less and less at the same thing.

There was less of a drive for iconic images. At the same time that Life shut down, the Time-Life Corporation unveiled its new start-up replacement – People magazine. It soon became one of the top selling magazines in the nation, just as Life had been in the 1940s and 1950s. If anything, there were more pictures in People than there had been in Life. Yet whereas Life struggled to make the image stand for something large and important, People had a different aesthetic. Two sorts of shots overwhelmingly dominated in People – the home family snapshot and the paparazzi shot. One tried to reproduce what families did with their home cameras; the other was the voyeuristic photo of celebrities in public. Both were casual and ephemeral. The search for capturing some larger social “essence” in the image, the heart of the mid-century Life aesthetic, was no longer there. The normal picture in People was significantly smaller than the average Life photo had been. The new cascade of pictures was passing eye-candy.

The increased importance of the small screen also contributed to the changing role of the image. With videotape (and later with DVD), watching movies more and more took place in homes on televisions. The pictures were seen smaller and could be watched with the same casualness that any TV could. Consuming movies was less of a special event – set off from other social spaces – than it was at mid-century. By the 1990s, teens were starting to download whole movies on the internet with even smaller images. 1940s Hollywood had been larger than life. Now moving images were increasingly seen smaller than life.

Even when the image was not smaller, the new image culture seemed different. In 1940s Hollywood, the “moving pictures” were not particularly disruptive. With the censorship code in force and continuity editing in place, moving pictures reinforced stable values. Films had a beginning, middle, and end, with a reassuring conclusion. In the last decades of the twentieth century, however, the new image culture seemed remarkably jumpy, in motion. Spectacle and action had always been a part of the movies, of course. Atlanta burning in Gone with the Wind or the Emerald City in The Wizard of Oz make the point. Yet beginning with the first James Bond movie (1962), the poetically slow motion deaths in Bonnie and Clyde (1967), and the cavernous portrayal of outer space in 2001: A Space Odyssey (1968), Hollywood began spending more time finding new ways to create stunning images of violence, mayhem, and the extraterrestrial.

The creeping trend turned to a gallop in the seventies. The mayhem of the popular disaster movies (the Airport series or The Towering Inferno) were done without any new special effects, yet they had great explosions. Two 1977 films, Star Wars and Close Encounters of the Third Kind, made new and elaborate use of older techniques like the “blue screen process” to make all sorts of action seem possible in outer space. And
while these were widely considered the turning point in the history of special effects, there were other, less well-known innovations. Viewers of the first Godfather (1972) watched Sonny Corleone’s (James Caan) murder in truly grisly detail, thanks to both the slow motion photography and the perfection of “the mole,” a small squib put under fake skin that simulated with great realism the effect of flesh and blood bursting after a bullet hit. By the end of the decade, special effects people were hot commodities in Hollywood.

During the 1980s, the digital revolution exploded, taking over in the 1990s. George Lucas’ company, Industrial Light and Magic, became a hub for the new technology. In movies like Terminator 2 (1991), Jurassic Park (1993), and Forrest Gump (1994), digital moviemaking matured. Whole characters were now created digitally. Digital backdrops were commonplace. Flashy new techniques like “morphing,” the ability to quickly move one shape to another in a seemingly seamless way, contributed. (Morphing was an important part of Terminator 2.) Perhaps most important was the new ability to edit film digitally. Once this could be done with no loss of quality, there was practically no end to what stunning things moviemakers could portray. The awesome tilting of the Titanic in James Cameron’s 1997 epic was one example. The dozens of bodies sliding down the deck into the ocean were digital inventions.

By the nineties, it was clear that the new technology was changing popular moviemaking. Comparing the top grossing movies of the seventies to those of the nineties made it clear that stunning explosions and digital aliens, freaks, or dinosaurs were now disproportionately part of the nation’s most popular films. 9

The very “wowness” of the pictures, moreover, often replaced character development. Spectacle overwhelmed story. Unlike the classic Hollywood cinema that meshed national myths with seamless editing, for these movies the effects were the attraction. Flicks like Dick Tracy (1990) or Jurassic Park (1993) were termed “theme park” films. As in amusement parks, the story mattered less than the thrill. Critics complained of “rootless, textureless images.” Most of the independent film movement, at least in the eighties and early nineties, was devoted to making movies with interesting stories and characters and without crazy stunts. Some academics, on the other hand, defended the new aesthetic. Most important, mainstream fans, especially young males, loved the new films. Big, flashy, jumping pictures – computerized dinosaurs galloping at us, chiseled-bodied tough guys impossibly leaping clear of fantastic explosions – these were now the most popular images on the screen. 10

The jump culture invaded television as well. Early television, like mid-century cinema, did not call attention to its “made” quality. It tried to edit seamlessly. In the 1970s and 1980s, however, a new string of technologies opened up all sorts of possibilities. Electronic nonlinear editing machines, new fast film stock, and the ability to warp, move, and bend images in editing rooms contributed. In the 1980s, television production started to shift to more overtly stylized formats. Shows like Miami Vice used this technology to create images that called attention to their very stylishness. Other shows, like the popular Hill Street Blues, adopted exaggerated cinema-verité. The jumpy images made with hand-held cameras had the paradoxical effect of appearing naturalistic and constructed at the same time. 11

But it was not only in prime-time series where the new jump culture surfaced. Ads and promos were a part of it. In the 1960s, the famous logo for NBC was the
peacock. It was a single picture, flashed on the screen for a few seconds, that identified the network. In the middle of the 1980s, however, the logo started to move. The new technology allowed such images to warp, bend, and move in all directions. Now in network promos, ads of all kinds, and news and sporting events, images, graphics, and logos floated, jumped, bent backwards, and sailed on and off screen. By the early 1980s, one veteran newsman unhappy with the shifts was complaining that “bells ring, pictures flip and tumble, and everybody seems to be shouting at me.... The news is bad enough without added jingle and flash.”

One of the most famous breaks with the older visual code was the music video, introduced in August 1981, when MTV first broadcast. By the middle of the decade it was a huge success, its growth mirroring the growth of cable in general. From the beginning, music videos disregarded the older canons of realism. Generally a mix of shots of musicians performing, various fantasy motifs, and, quite often, good looking women as eye candy for male viewers, music videos flouted the continuity editing that Hollywood still largely clung to. Music videos’ visuals leapt all over. Individual shots were incredibly short, a cut coming every 2 to 3 seconds. Scenes shifted abruptly. Jump-cuts were de rigeur. Perspective changed with similar abruptness. Videos were not sutured together to appear as if one shot “naturally” led from the last. Quite the contrary, visual discontinuity was the norm. It was the rare video that created defined narratives with beginnings, middles, and ends. Instead, videos tended to create moods. Surrealism was a forebear of the music video.

In general, the arrival of videotape was remarkably important for the new visual culture. Videotape had been large and unwieldy in the 1950s, principally used for television shows. In the late sixties and early seventies, the size, cost, and ease of videotape diminished significantly. In 1974, the first computerized videotape editing machine was put on the market. At the same time, lightweight video cameras came on the market. The new technology not only set the stage for music videos; it helped bring in newer forms of TV news reporting. “Live from the scene” reporting started in the mid-1970s.

The new video and computer editing technology also helped dramatically shorten the length of political speech. Once computerized video editing machines came on the market in the mid-1970s, editors could effortlessly and instantly move image and sound around. Editing film required cutting and splicing the tape. Cutting film is a time-consuming, clumsy process. You have to literally cut and splice the film together. The new equipment, however, allowed video to be edited with the press of a button. Moreover, unlike with film editing, you could reverse yourself without any difficulty, by just pressing another button. The ease of electronic editing left ample time for experimentation even in the daily news show. The result was a phenomenal shortening of how long politicians talked uninterrupted on the news. Instead, viewers increasingly saw the slick meshing of image and sound, with far more editing cuts than before. The average uninterrupted time a politician spoke on network news went from a little over 40 seconds in 1968 to just 9 seconds in 1988. Politicians themselves altered their speechmaking to develop the one, catchy “sound bite” that would make the news. The new style also changed the way reporters worked. An Executive Producer for CBS news observed that “the correspondent is not allowed to talk more than twelve or fifteen seconds before there is some intermediate sound. It’s called pacing.”
The technology made these new images possible, but they were not determined by the technology. This was an aesthetic, a style. “Special effects were no longer just a way of producing difficult or impossible shots – they were becoming the star of the show, and audiences wanted to see more.” Newsroom editors looked for flashier, quicker paced news stories. Similarly, people working on TV series developed an aesthetic that revolved around “showing off their proficiency at picture making.”

One final change above all served to increase the discontinuity and jumpiness of the new image culture. Between the mid-eighties and the mid-nineties, the number of households with television remote controls jumped from 29% to 90%. This device altered viewing habits dramatically. New slang like “grazing,” “zapping,” and “surfing” appeared to describe characteristic uses of the remote, such as quickly through all channels, following multiple shows simultaneously, and avoiding commercials. Research, in case you needed any convincing, showed that men wanted to control the remotes and flipped far more frequently than women. The result, for the men with the remotes and the women who loved them (or who just put up with them), was one more way that in now appeared normal that images would quickly leap about without a care for the continuity between them.

EROSION OF CENSORSHIP

Contributing to the sense of disorder was the erosion of censorship. Images that would have been illegal a generation before – most notably of people fucking – were now easily available. The inability to contain images contributed to the widespread sense of images out of control.

Movies and magazine culture were the first to shift. Facing pressure from the early 1950s, the old film censorship system fell apart completely by the mid-1960s. A string of Supreme Court decisions liberalized obscenity law. Shots of frontal female nudity started to appear in movies like The Pawnbroker (1965), Blow-Up (1967), or Five Easy Pieces (1970). In response, during the late sixties and early seventies the Motion Picture Association of America developed a new system that differentiated between G, PG, PG-13, R, and X movies. Unlike under the old Production Code, in the new regime movies weren’t censored, they were rated. One result was that simulated sex scenes started appearing in movies like Last Tango in Paris (1972) and Don’t Look Back (1973), the former portraying anal sex. Over the next few decades, slowly, more taboos peeled away. Hollywood portrayed its first genitalia in the early nineties of both men (The Sheltering Sky, 1990) and women (Basic Instinct, 1992).

Mainstream Hollywood, however, looked tame when compared to its nastier cousin, the porn industry. The popularity of soft core porn like Russ Meyer’s Vixen (1968) or Emmanuelle series (1974) was one thing. In 1971, though, hard core broke out. Between June 1972 and June 1973, the “big three,” Deep Throat, Behind the Green Door, and The Devil in Miss Jones, all produced in 1971 and 1972, earned more in theaters than almost every mainstream movie. The porn industry put itself on really firm footing a
few years later with its embrace of the videotape revolution. Along with television news, porn went from film to video in the late seventies. No one had a good handle on who exactly was watching this stuff, but that was the point. Now on videotape, you didn’t need to go to some seedy theater. You could porn out in the privacy of your home. The audience was in the millions.

Magazines addressed to male voyeurism underwent a parallel shift. Playboy found itself being challenged by a rawer Penthouse in XXXX. In August 1971, Penthouse first showed female genitalia. Playboy followed X months later. In XXXX, Penthouse was outflanked by Larry Flint’s Hustler, which had a rawness not portrayed in the other two major men’s magazines. Again in response, Playboy and Penthouse shifted their portrayals. Men’s penises, oral sex, and close-ups of penises entering vaginas became a part of the magazine’s in the late 1990s.

A variety of factors contributed to the new obscenity. Outside of the pornography industry, where the videotape revolution mattered enormously, technology played no significant role in these changes. Far more important were legal and market forces. A string of decisions by the Supreme Court in the 1950s and 1960s had changed the climate for visual portrayal’s of sex. Even the outer limits of what the court would tolerate, in XXXXXXXX (1973) did not. But combined with changes in the law were the pressures of the market. The increased explicitness in men’s magazines, the desire to find reasonable alternatives to pornographic movies in the 1970s – these pushed the industry toward the new explicitness.

Television held on longer and never went as far, but still, by the 1990s, the older codes were reeling. Television in the 1950s had adopted the same production code used by the film industry. While there were some tangles with censors in the 1960s, it was in the early 1970s that controversy started swirling. Beginning with All in the Family (first aired, January 1971) and it’s spin-off, Maude (Fall 1972), prime-time TV was willing to tackle new, controversial ground. “During the season that began last week,” Time magazine reported in 1972, “programmers will actually be competing with each other to trace the largest number of touchy – and heretofore forbidden – ethnic, sexual and psychological themes. Religious quirks, wife swapping, child abuse, venereal disease – all the old taboos will be toppling.”

A few years later, the new thematic explicitness was joined by new visuals. “Jiggle” or “T & A” shows, like Charlie’s Angels, added a dollop of adolescent titillation to the prime time line-up.

This expansion of the possible had limits. XXXXXXXX. It did, however, create controversy. Conservatives had mobilized by the middle of the decade in opposition the new trends….XXXXXXXXXX EXAMPLE OF BOOK/ then note how it was cable that made for the next change………

Stuff appeared that would have been unthinkable just a few years before. The rise of cable – particularly the channels outside the standard cable package, featured nudity, simulated sex, and foul language. With cable stations winning more viewers, the networks felt the need to respond in kind. Standards were relaxed. In 1992, the Seinfeld show ran an episode about a friendly contest among friends to see who could avoid masterbating for the longest time. The next year, the popular police drama NYPD Blue was called “soft core porn” by the Reverend Donald Wildmon of the American Family
Association for its signature shots of unclad rear ends and occasional short sex scenes (breasts and genitalia tastefully sheltered). In 1994, the Roseanne show aired a lesbian kiss. All this was happening on network television in prime time. (NBC happily sold t-shirts commemorating the Seinfeld episode.) The idea of an evening “family time” safe from such material folded under the networks’ struggle keep the audience from switching to cable.

Far outweighing the erosion of TV censorship in the 1990s was the emergence of pornography on the internet. Literally millions of images of every conceivable kind of porn were now entering homes, school computers, and public libraries. While Congress tried twice to regulate this pornography in the 1990s, and the Clinton and Bush Administration supported this, as late as 2003 it had not had its effect.

_Drowning in Pictures_

By the 1990s, the pictures produced in the United States differed dramatically from those done in 1950. The image culture seemed more chaotic, more out of control than ever before. Pictures came at us from every direction.

There was an increasing sense that reproduced images were not realistic.

“Rather than the ‘window on the world’ concept that was so important in the early years of television, contemporary televisuality flaunts ‘videographic art-objects’ of the world.” Televisuality, p. 152. It is not the “reality effect,” but the “picture effect.”

Since the mid-nineteenth century, the photograph had been widely associated with stopping motion, with interrupting the flow of time. It was a stabilizer. Even “moving pictures” in the first half of the century had not dramatically changed that. Especially once the censorship code went into effect in 1934, the narratives put made the motion orderly – defined plots with beginning, middle, and end with a generally uplifting message. Continuity editing reinforced the sense of order and naturalness. In the closing years of the century, however, visual culture appeared increasingly disruptive. Music videos flaunted continuity editing. The mindless violence of the contemporary action film portrayed worlds out of control. Viewing porn at the local public library appeared to be. The dancing graphics of TV and internet. Pictures were increasingly spoken of as something that upset the culture instead of stabilizing it.

The barrage of visuals meant that we didn’t pay deep attention to many. The new visual culture was a culture of distraction. In 1936, Walter Benjamin argued that

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SENSE OF IMAGE CULTURE BEING OUT OF CONTROL
end of realism
images used to stabilize culture/ now they signal its motion
distraction….. in place of attention, increased distraction…..
Fears cannot turn people against it ... the new regime is popular stuff.....


The claims for the digital age are many. It is the fulfillment of the Enlightenment. It is the hypertrophy of modernity. It will bring on a new world of individual fulfillment and bounty. It is creating a new divide between the information rich and poor. It is creativity. It is mind-numbing.

I add my own to the list: the digital is the age of promiscuous knowledge. One of the most important trends of recent decades has been the blending, blurring, and colliding of the line separating popular from expert knowledge. It is not that the line has been erased. It is, rather, that the line is constantly challenged. Professional knowledge is increasingly confronted by popular sensibilities but without the goal of eliminating knowledge elites. Nor is it simply marked by popular or common sense resistance to formal knowledge, something that has existed for hundreds of years. Promiscuous knowledge is the ongoing negotiation between elite knowledge producers and those outside the formal system or without any formal accreditation. The search engines we now use blur these lines further.

The information age is not adequately described as the latest manifestation of technological rationality, as the apotheosis of the Enlightenment, or the ringing triumph of modernity, for good or ill. Such evaluations look selectively at the age and miss the dialectic that is going on all around us. Digital culture has weakened our sorting mechanisms. The information age is really a strange mix of the hyper-rational and the
popular. The predominance of expertise has to be set next to the distrust of expertise. Knowledge is increasingly marked by strange blends with the popular, the irrational, the idiosyncratic. To be sure, this always existed in the past. What is different is the ease with which this is accepted. It is part of our condition. We increasingly sit in the heart of promiscuous knowledge.

Professionals – From Respect to Necessity

Some years ago, Clifford Geertz wrote an essay called “Blurred Genres.” Disciplines formerly separate were merging, borrowing, and trading with each other, Geertz argued. Social scientists were adopting literary analysis. Historians were turning into retrospective cultural anthropologists.1 Geertz’s elegant essay touched on shifts going on many of the humanities and social sciences at the time. But what the essay was just a bit too early to catch was the blur happening between the formal disciplines and popular knowledge. That was just moving into a new phase. It has since evolved into one important strain of the intellectual life of the last quarter of the twentieth century.

There are cultural reasons for this blur that reach beyond the technology of digital culture. Professionals lost respect in the early 1970s. Between 1967 and 1974, the repute of every sliver of the upper middle class, with the exception of the press, fell. Lawyers, politicians, professors, military leaders, doctors – all suffered declining popularity. (The press would sink similarly in the next few years.) The cynicism of the era touched the reputations of all the professionals running major institutions.

The 1970s were the right time to start doubting the efficacy of professionals. The claims made for the ability of a managerial class to produce a rational, planned future frayed significantly. Economists were among the first to fall. The stagflation of the seventies dented the dreams of a nicely “fine-tuned” economy. The faltering of Keynesian economics helped support the return of market thinking during the 1970s. It also pressed many to question the presumption that professionals could effectively manage modernity. The popularity of the books of Ivan Illich signaled a new skepticism about the medical and educational professions. His writings were one more challenge to modernity’s claim to be able to rationally manage the future.

Much more important, however, than the ruminations of intellectuals was the work of activists. It was there that the challenges to formal knowledge bust open in the first years of the 1970s. Feminists, gay rights activists, African American activists, those who had been institutionalized in psychiatric hospitals – all emerged, with the support of investigative journalism, to challenge the authority of knowledge professionals.

In May, 1970, for the first time sessions at the American Psychiatric Association (APA) convention were disrupted by activists attacking those psychiatrists who defined homosexuality as a mental illness. Speakers were shouted down. Explanations were
laughed at. Epithets like “torturer,” “vicious,” and “motherfucker” were tossed at the psychiatrists. Activists demanded to respond to offending papers, turning at least one panel into chaos. Another psychiatrist was met with the shout: “Where did you take your residency, Auschwitz?”

At the heart of the anger was the fact that the APA’s *Diagnostic and Statistical Manual of Psychiatric Disorders*, the most important such manual in the nation, included homosexuality in its catalogue of mental disorders. In other words, the APA officially thought that homosexuals were crazy. In the next few years activists continue to intrude upon psychiatric gatherings, trying to force the profession to confront its prejudice. Never without a few supporters in the profession, the activists pulled others to their side in those years. In May 1973, the APA voted to take homosexuality off the list of mental disorders.2

African Americans had long had problems with officially sanctioned knowledge. Frederick Douglass lectured in the 1860s about the racist social science of the day. W.E.B. Du Bois’s opposition to white portrayals of Reconstruction are now well known—at least inside the tribe of professional historians. In the late sixties, distrust of white social science was not uncommon in African American communities. Of all the outsider suspicions of official knowledge, this has the deepest roots.

In the summer of 1972, however, something significant happened. Anger bubbled up over a long-term research project located at Tuskegee Institute in Alabama, a project supposed to search for treatments and cures for syphilis. The Rockefeller Foundation had been funding this research since 1929 the US Public Health Service since 1932.

On July 25, 1972, the Associated Press sent a story over the wires reporting the grim fact that for decades, African American men had been in the study but untreated, a control group for others who did receive treatment. About 600 men suffered in this way. Health professionals involved had known for decades that this condemned the untreated to a slow, painful death. In the name of “science,” however, the practice continued.

There had been scattered concerns raised about the Tuskegee syphilis study since the mid-1960s. They were not acted on, however, and were kept internal to the review process. In 1972, though, when the story hit the national press, the outrage was public and immense. The disgust over the easily disposed lives of African American males reached well beyond the African American community. Senator William Proxmire called it “a moral and ethical nightmare.” Teddy Kennedy termed it “outrageous and intolerable.” Government officials who managed the program first responded by trying to make excuses but pressure from the news media continued. In August, the Department of Health, Education, and Welfare (HEW) had appointed a group to review the study. By the Spring of 1973, the project was dead.

Good number of African Americans were not that surprised at the abuse of black bodies in the name of science. What was new in 1972 was white support of this outrage, and the decision of editors at the mainstream media to not ignore the subject. There was significant support for the proposition that the Tuskegee study could not be tolerated and that the scientific establishment had not monitored itself appropriately.3

Still a third version of the challenge to science was the deinstitutionalization movement. Scattered intellectuals had expressed hostility to prevailing psychiatric practice during the 1960s. Anti-psychiatrists like R.D. Laing and Thomas Szasz, novelists like Ken Kesey, and social theorists like Michel Foucault and Erving Goffman
all produced early 1960s work attacking the psychiatric practice. But it was not until the end of the decade and early seventies that this moved from intellectual inquiry to political activism. In 1967, California passed the Lanterman-Petris-Short Act which created the first state mental health system influenced by the anti-psychiatry movement. In 1968, the New York chapter of the American Civil Liberties Union began a campaign to protect the rights of mentally ill patients. In the early seventies, former patients began their own political organizing against forced treatment. In 1972, lawyers working to change the system filed a case that would lead to their first major success, overturning Wisconsin’s civil commitment law. This was just one of hundreds of suits brought in the early and mid-seventies against forced commitment or on the right to refuse treatment. By the end of the 1970s, the practice of psychiatry had changed significantly, not because of the internal evolution of the discipline, but due to political pressures brought by outside activists – both former patients and civil liberties lawyers.4

All this activism used anti-establishment outrage of the 1960s. Yet it was also a sign of something new. Knowledge professionals could be challenged from the outside. Their authority was not sacrosanct. Truth did not evolve from the evolution of professional discourse, the way that modernization theorists suggested. It was political and could be challenged politically. Just a decade earlier, Thomas Kuhn’s famous Structure of Scientific Revolutions presented an utterly serene and self-contained picture of how science worked. In Kuhn’s account, scientists directed their own disciplines. The only politics were internal. The events of the early 1970s suggested something else, a pattern of science where the popular, or the outsider, or the political – you pick your term -- intruded at key moments on professional autonomy. The political fights in various knowledge communities during the early 1970s were one sign of the declining respect for the judgment of professionals.

Moreover, these challenges were more than opposition to formal knowledge. Such opposition is easy to find among the disenfranchised throughout history. These protests were successful challenges to professional knowledge. What is crucial is not that gay activists protested against the diagnostics of the APA. What matters is that they entered the professional ranks and pressured change as to what knowledge was actually considered to be.

If truth did not unroll through the internal discussion of professionals, nor was it trapped in the claws of the ruling class. This was another practical legacy of the success of the outsider challenges to formal knowledge. While this has not always been recognized in social theory, these cases taught activists that specific interventions into knowledge communities can alter practice and conceptions of knowledge. Even if there is an establishment domination, there is space for successful strategic incursions.

While these attacks had their origins in 1960s sensibilities, they also lacked – in practice if not always in ideology -- the more utopian, romantic dimension of the 1960s. These were not projects devoted to toppling the psychiatric profession; or of ending scientific research. They were practical reforms that activists wanted to happen. While someone like Ivan Illiachi dreamed of “de-schooling society” or undermining the “medical nemesis,” these goals of the gay, African-American, and deinstitutionalizing activists were more pointed. This scaling down of romantic postures – at least in practice – gave promiscuous knowledge a link with the past, albeit a link with a difference. It was continuity that reflected the burnished reputation of the knowledge class.
The movement of these activists into certain pockets of the university is another part of the story of the 1970s. Here too theory did not necessarily match practice. Frankfurt school Marxists and, later, Foucaultian cultural analysts are examples. Certainly the arrival of feminist scholars was the most prominent and successful. Feminist radicalism might have fallen apart between 1971 and 1974, as Alice Echols has nicely shown. But on the heels of this was the emergence of women’s history, women’s studies programs, Title IX sports reform, and sexual harassment law – all products of the 1970s, all depending upon research and the production of knowledge. It is certainly not surprising that books were published in 1981 chronicling the Tuskegee project and the psychiatric profession’s attitudes to gays and lesbians. Both were written by academics. The attacks of the early 1970s were not about destroying the professional class, they rather instituted the coupling of perpetual research coupled with chronic distrust.

This distrust of the knowledge class has proved to be longstanding. It has sunk firmly into American life. The hermeneutics of suspicion have turned into a common tack of the humanities, although certainly not the only one. Instead of assaults on the streets, books started pouring out attacking the presumptions of professionals, reporting their failures. It is no surprise that key books on professionalism appeared in the late 1970s, many of them quite critical. This was part of the distrust of professional knowledge being produced by knowledge professionals themselves.

Promiscuous knowledge emerged with distrust of the professional project. It is, quite literally, the unholy blend of the profane and professional, the outsider and the expert. It is marked by the inability of the professional to maintain the “purity” of knowledge production but the continued necessity for professionals. From its first rumblings in the early 1970s, it has turned into one of the more important trends of the last twenty-five years.

Politics

The interruption of formal knowledge production by popular, or outsider forces, happens in a variety of forums. It is not always political but it is sometimes. The politics of promiscuous knowledge help us see some of its contours.

One site these battles emerged was in the regulatory arena. One of the most striking knowledge fights of the last two decades has been about AIDS research. Very shortly after the disease first surfaced in the early 1980s, bitter disputes broke out over how research should take place and what treatments should be authorized. Perhaps the best known activist group was ACT-UP, loosely organized sets of radical gay and lesbian activists devoted to pushing the research establishment and federal government. The first ACT-UP chapters formed in 1987. Two issues in particular were important, forcing the Food and Drug Administration to approve AZT “cocktail” to curb the erosion of red blood cells for HIV-positive women and men; and loosening strict adherence to blind clinical trials. These practices, firmly in place prior to the late eighties, were important pillars in standard medical practice. Aids activists wanted them dethroned.
What made ACT-UP so striking was its combination of effective street theater and solid insider knowledge of the issues involved. The group could embarrass the FDA one day and sit down with them to negotiate on the next. By 1988, the fact that ACT-UP activists were sitting down with government officials was itself part of the story. They effectively became one of the players deciding how AIDS research would be conducted. What had been a process ruled by the internal autonomy of scientists became a version of what one scholar has called “impure science.”

Other regulatory battles emerged in the 1990s. In 1992, David Kessler, the head of the Food and Drug Administration, decided to ban silicone breast implants. Marcia Angell, the physician-editor of the *New England Journal of Medicine*, was appalled. There was, she argued, not one solid piece of epidemiological evidence that implants caused tissue disease.

The courtroom was another place where the purity of scientific authority was pressured. Up until the early 1970s, the basic standard regarding expert testimony in US courts went back to a 1923 decision, *Frye v. United States*, which dictated that only that expertise generally accepted by the scientific community was acceptable in the courtroom. As faith in knowledge elites diminished, however, so did respect for that opinion. It was challenged several times in the late sixties and early seventies. Then, in 1975, the new Federal Rules of Evidence proclaimed a new standard. Now expert testimony only had to be "relevant” and “reliable.” Now testimony did not have to relate itself to an accepted canon. Instead, experts could introduce unorthodox opinion.

By the early 1990s, scientists and political conservatives were quite concerned about the erosion of authority. Debates about knowledge communities. NAGRA…. In 1992, thanks to the efforts of Senator Tom Harkin of Iowa, the National Institute of Health created the Office of Alternative Medicine. Right from the start there was controversy about how anti-establishment the office would actually become -- stories of support for the use of shark cartilage to treat cancer, mental healing at a distance, and “biofield therapeutics” all caused most scientists to cringe.

In the late nineteenth century, courts were plagued by the problem that NAGRA on Indian remains…..

As NAGRA indicates, museums were still another site where debates about knowledge took place. As with the question of expert testimony, changes in the law mattered. In 1990,

Up to this point, I have been stressing the push of various left-forces against established knowledge communities. And to some extent, this is correct, for those on the
left more comfortably distrusted established knowledge communities. Yet they had no monopoly on the attitude. When the pushing and shoving started, conservatives could be just as insistent that professional communities were not effective arbiters of truth. AIDS activists, for example, were not alone in rejecting the scientific mainstream in the late 1980s. They were joined by renegade scientists like Peter Duseberg who both provided some of the key research and arguments for the activists and who let slip comments about how gay lifestyles, “criminal just a few decades earlier,” had caused the disease. Duseberg was by no stretch a “man of the left.” Even more intriguingly, conservative policy activists interested in deregulation also joined to condemn mainstream science. Intellectuals at the Heritage Foundation and the *Wall Street Journal’s* editorial page regularly expressed opinions on specific policy issues very close to ACT-UP activists. A 1990 article in the Heritage Foundation’s journal, *Policy Review*, proved to be one of the best known attacks on the FDA and establishment research, expressing opinions that, until that moment, had been kept from such gate-keeper medical journals like the *Journal of the American Medical Association (JAMA)* or *Science*. The *Village Voice*, a New York left weekly very sympathetic to ACT-UP, summed it up this way in 1988: “Bad science makes for strange bedfellows.” (Epstein, 118)

Dreams of deregulation often translated into hostility to established arbiters of truth. This, as we will see, fed into the digital ethos of the decade.

Other conservatives led one of the more prominent museum fights of the early nineties – over an exhibit at the Smithsonian, provides a prominent example of how more conservative forces can attack liberal knowledge producers. The Smithsonian hoped to put on an exhibit of evinces another way that outsiders can pressure knowledge communities. Professional historians found themselves attacked by the American Legion.

In vein did they try to argue that they had the facts on their side. At the exact same time Marcia Angell was arguing about evidence and breast implants, historians were defending their own reading of the evidence relating to the dropping of the atomic bomb. Like Angell, the historians believed they should be deferred to. Both thought the outsiders were uninformed. Both lost. In the end, despite the concerted efforts of the community of professional historians, the Smithsonian regents canceled the exhibit. Just as in the is of AIDS research a couple years before, the consensus of the relevant professional community was set aside. The outsider activist intruded on the autonomy of the professions. It was another example of promiscuous knowledge.

Promiscuous knowledge is not “owned” or solely practiced by either end of the political spectrum. It is something available to all sides. When political forces are threatened by some knowledge claim, they now have the option of mobilizing in opposition, of injecting themselves into the process. That both left and right will use this is itself a good sign that this knowledge-regime now reigns. What we are facing is the lack of credibility of knowledge producers.

Yet these fights do not happen everywhere. All kinds of science and research continue on without public controversy. Two other conditions are necessary for these battles to erupt. They only happen when either activists, policy makers, or the larger public can be convinced that this issue truly matters. Whatever I say on nineteenth-century science in an academic journal will be ignored as it doesn’t seem to matter that much.
And it matters most often at the point where knowledge leaves the knowledge community – issues of medical research, of courts of law, of museums. These are the sites where controversy erupts with the public – not simply on the pages of professional journals, but where that professionally created knowledge leaves the tribe and heads into a larger world. At that point, skepticism about knowledge creators, be they conservative medical researchers or liberal or radical humanities professors, erupts.

These are often discussed as part of some “cultural wars.” Such an opinion assumes that this is a battle of the left and right. This mistakes the particular fights – which are some form of left versus right – for the larger cultural pattern. These fights are about a much more pervasive distrust of formal knowledge. Such distrust has a distinguished history in the United States. Since the 1970s, however, it has taken a new form. Experts remain in place. They continue to be supported to do research. But at key places, outsiders appear to assault the public representation of truth. To claim these are the culture wars misses this context. It assumes these are simply battles of the right against left. They are, however, skirmishes in a post-modern paranoia.

Digital Promiscuity and the Erosion of Ethos

Digital culture embodies these unholy concoctions, the disinclination to sort the “pure” from the impure, popular from professional, activist from objective. There is no better example than the emergence of the powerful search engines in the mid-1990s. There are no better examples of the lack of sorting than a Google or Yahoo! search.

Yet digital culture encourages another thing about promiscuous knowledge, the declining respect for the ethos of the professional knowledge creator. Aristotle, in his Rhetoric, famously argued that credibility depended upon a blend of ethos, pathos, and logos. Late twentieth-century distrust is marked by a deep devaluation of ethos. Less trust is given to someone simply because they “are” an expert. But we have not eliminated the knowledge creators, just devaluated them, the culture still pays homage to claims of rationality (logos). They blend freely with emotional appeals designed to move us to a point of view (pathos). These trends, part of how promiscuous knowledge has come to operate, are all refected and encouraged in digital culture.
digital culture. In fact, the cultural distrust of authority that tugged at so many of the
digital innovators might itself have been a reason for how parts of digital culture
emerged, particularly chat rooms and search engines. What the political distrust of
knowledge and key components of digital culture share is a distrust of authority. In
classical rhetoric, ethos, logos, and pathos all contributed to make a persuasive speaker.
The information age, I would argue, is marked by the strong distrust of ethos.

assertion that the lines between popular and formal are fluid are common in the
past two decades. Very quickly after the recognition of In the 1980s, the radicals of
ACT-UP, the gay rights organization, pressured AIDS researchers, into forcing them to
XXXXXX. In 1981, the Museums Repatriation Act took the exclusive authority over
Native American remains away from museum professionals, instead insisting that there
had to be negotiation between museum managers and the tribes about what was put in
musuems.

Musuems turned out to be a key site. From a 1991 battle in Toronto about the
portrayal of British Imperialism in Africa, through the controversy about Robert
Mapplethorpe’s photos in Cincinnati in 19XX, the 1993 battle over the Westward, Ho
exhibit at the Smithsonian, and the like – in each case there has been a battle between
outsiders and experts.

As the 1981 museum legislation indicates, the law has been implicated in this
shift. One of the most notorious sites of promiscuous knowledge has been the courtroom,
and law about evidence is certainly one way that the blend of popular and elite has
occurred. Up until the 1970s, the ruling case on evidentiary law was XXXXX, decided in
1923. This case itself overturned the confusion about expert witnesses that had been
common in the late nineteenth century. It marked a turning point establishing the
authority of expertise, the reliance upon expert knowledge to adequately manage the
modern world.

In the period of 1967-74, however, the moment when professional authority
decayed in general, there was a weakening of respect for that opinion. In 1975, a
committee revising the Federal Rules of Evidence quietly changed the old standard,
substituting this language: XXXXXXXX.”

The basis of the political challenge to professional knowledge is the distrust of
professionals. Aristotle, in his Rhetoric, famously argued that there were three sources of
persuasion – ethos, logos, and pathos. Distrust of professionals has meant not that logos
is abandoned so much as that ethos is suspect. Arguing ex cathedra, by authority, always
happens, but it has become more suspicious now.

The emergence of digital culture has cont

But locating promiscuous knowledge solely with the left would miss one of the
key points – this is a phenomenon of our time. Just as important an example is the fight
over various museum exhibits in the 1990s. The first major museum battle of our time
happened in 1991 in Toronto, a cosmopolitan city filled with immigrants from around the
globe. In an exhibit

In the next decade a string of exhibits were attacked by outsiders, almost all with
a populist rhetoric, all arrayed against the professionals trying to mount the exhibition.
The Robert Mapplethorpe exhibit in Cincinnati (XXX), the controversies over the Smithosonian’s “Westword Ho” and Enola Gay exhibits, the Library of Congress’s exhibit of African American photographs – all fell into contention.

The controversy over the Enola Gay,

But museum wars and AIDS research are only two of the ways that this mixing matters. By the 1990s, digital culture is just as important. Chat groups have emerged on nearly every topic, radically increasing the ability to pass around information but at the same time losing all control over participants—do the people making certain claims actually have foggiest of what they are talking about?

I had been on several chat rooms relating to professional interests for about a year but quit basically because there was not enough content control. Even people who knew what they were talking about often just blurted out the last thing to come into their head. This is a general problem with the World Wide Web. It is no surprise that a string of sites have turned up to help teach people how to assess web-site. I have found huge amounts of misinformation through web searches (which I generally enjoy!). But

The real menace of this came home to me my mother produced sheets of messages she had printed out from a chat room devoted to her heart condition. There were wildly different opinions, all stated as gospel truth. Serious decisions about how her congenital heart failure were at stake. This brought the issue far closer to me. This was -- and this is not too dramatic a way to put it -- my mother’s life.

As is common with all the WEB, it has decreased the ability to judge the reputation of the speaker. Depending on which translation of Aristotle you read, either ethos or logos is the most important dimension of successful rhetoric

POLITICAL PROBLEM – COLLAPSE OF TRUST, RIDICULED ETHOS....

DIGITAL CULTURE – FEEDS RIGHT IN, DIMINISHES THE ABILITY TO JUDGE SPEAKER, ETHOS IS EXACTLY WHAT IS HARDEST TO JUDGE....

_The Old and the New_

We have always had promiscuous knowledge. Courts, newspapers, and laboratories have never segregated the true from the popular as successfully as their ideology suggested.

In this respect, Bruno Latour’s contention that “we have never been modern” is certainly correct. At the dawn of the modern era, new ideologies of experimentation mingled with ancient belief in monsters. Newton’s new physics merged with alchemy. The drift of an entire generation of history of science has been to claim that the seventeenth-century scientific “revolution” had actually not split the traditional and the scientific, that there was not the clarity about what science was that existed later. In high Enlightenment salons, strange Mesmerist frauds mingled with the era’s leading scientists. In Victorian America, cultural critics routinely bemoaned the inability of science to
segregate itself from entrepreneurial culture, a culture at best with insufficient rigor about the truth, at worst populated by characters like P.T. Barnum, who made a living displaying fake mermaids in his New York “museum.” Boundaries have never been secure.

What, then, is new for us? Attitude. What has developed in the last generation is a relatively relaxed acceptance of the phenomenon. Academics develop theories of popular participation in the construction of museum display. The courts toy with granting popular knowledge evidentiary weight with formal science. Conservatives applaud outsider challenges to left-oriented museum exhibits. Progressives approve of ACT-UP’s entry into the halls of science. With each, the autonomy of professional judgment disappears while professional practice persists. The results produced by the great search engines of the 1990s – Google and Yahoo – only codify larger cultural presumptions.

Not only have we never been modern. We will never be modern. Promiscuous knowledge seems to be here for good, or at least for the foreseeable future. This might very well be the nub what is new about all this. There is no “beyond” imagined. There is no dream of a “purer” future. Right and left chafe when outsiders come after one dear to them. But no one challenges the new practices across the board. Activist pressure is now a form of democracy. Unlike the past, there is nothing envisioned beyond the mix of the popular and professional, political actor and credentialed expert. This is the contemporary organization of knowledge. It is our condition.

In the past, it was very different. There was confidence in the future. Post-Aristotelian epistemologies in the seventeenth-century differed dramatically from each other. Descartes, Bacon, Locke, and others, might have had, in the end, little in common. They all, however, had faith that their new ways of knowing could successfully separate the true from the non-true. Spinoza certainly thought that the fictitious idea was “necessarily confused” as it “directs its attention promiscuously to all parts of an object at once without making distinctions.” But ideas “which are clear and distinct,” on the other hand, “can never be false.” In his optimism, he was typical.

Early modern institutional initiatives reflect similar confidence about the possibility of creating trustworthy sorting mechanisms. Publishers, scientists, writers, and royalty all took part in an effort to fight fraud or piracy of printed ideas. The seventeenth-century saw a concerted effort to develop a new level of credibility for the printed word. The emergence of experimental practice was another new institution trying to sort truth from fable. Connecting truth-claims to the direct witnessing of experience and replicated laboratory results were core values of the British Royal Society. Such procedures would securely ground our knowledge. During the 1600s the impure had not been weeded out, but confidence was strong that good progress was being made.

Similarly, from the 1860s to the 1960s, there was great faith inside knowledge communities that modern professionalism would secure better and accurate knowledge. Dissenters existed, of course. But they were small in numbers. Just as in the seventeenth century, new institutions were supposed to create truths that could be secure.

Debates about professionalism, as they emerged in the 1970s, focused on whether modern professionalism was good or bad, whether it should be saved or savaged. Such
discussion, still commonly heard today, misses how knowledge-creation has evolved. It is not “yes” or “no” to professionally constructed knowledge. What has evolved is continued knowledge production combined with deep suspicions of it. That setting leads to promiscuous knowledge.

Digital culture both reflects and builds its own version of this. Google searches, Cardiac patient chat rooms, the material conditions of Silicon Valley in the early 1990s, internet porn in the public library, the ideology of Wired— all are examples of a form of professional distrust. All find new ways to blend together the professional and the outsider. Digital culture has encodes the distrust of the modern professional project. It makes light of the claim that knowledge professionals have some special access to a truth claim. It functions no differently than the American Legion attacking the Smithsonian for the Enola Gay exhibit. It is XXXXXXXXXXXX Something about truth in our time…

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6 Benedict de Spinoza, *On the Improvement of the Understanding; The Ethics; Correspondence* (New York: Dover, 1955) 23, 25.
“Memory” has become a growth industry in recent years. It is now enmeshed in our knowledge politics. Memory of the holocaust takes new strength in the 1970s. The fights over the Vietnam Memorial in Washington D.C. occur at the same time. Memory has become a powerful academic study. And therapists (at least some therapists) and the general public have become fascinated with “repressed memory syndrome” in the 1980s and early 1990s.

Why has this happened? Memory is a way to counter the swirl of electronic images and liquid flows of information. Memory politics attempt to secure us, find some provisional order in a chaotic world. It is the breakdown of the regime of mass culture that has made memory politics so potent and powerful. Memory hopes to secure an image in our head, to create a single, dominant sense of order in the world around us. The politics of memory, in other words, is a late twentieth-century effort to revive the earlier mass culture regime.

It is precisely the breakdown of older attitudes about image and information that made memory such an important topic by the middle of the 1970s. Yet it is that same breakdown that ensures that it will not provide the order. Instead, memories will continue to be fought over (“contested” as the academics now say). And they will continue to be the subject of fighting because memory is basically about synecdoche, finding a key image that will encompass a more complex reality. But synecdoche, as I’ve argued, is now suspect. Unlike the middle of the century, with its Norman Rockwell paintings capturing “America,” at the close of the century. So we will have continued fights over our memories, with thrusts and parries turning against each other; each hoping to find the memory/image that will succeed, yet each subject to the next conflict.

Memory politics are of limited value for another reason. They want mid-range order, more than an instant but less than “nature.” They hope to counter our swirl of electronic images and liquid flows of information. They want to secure us. The turn to memory, in other words, is an effort to build a dike; a try to slow down the craziness of our new world.

Consider the following. When we walk down the street and want to remember something, Milan Kundera points out, what do we do? We slow down. But what if we are trying to forget a distasteful incident? We speed up, as if a quickened gate will help us leave behind that memory still too close for comfort.

The culture is now a culture of forgetting. The pace is quick enough. Moreover, the swirl of information, the turn of information to

The silly argument is that the world is in decline and fall. The world has always been going to hell; it just finds different ways to do it.

One of the most creative historians of our time is an idiosyncratic philosopher named Ian Hacking. Hacking has written two books in recent years on the history of knowledge. One is on the history of statistics in the nineteenth century. Hacking argues that the expansion of statistics was connected to the end of discussion of human nature. Statisticians in the 1830s created a new analytic category -- normality. Turn of the century sociologists spread the message. Instead of pondering human nature, talk shifted to exploring, with the aid of statistics, social norms.

In the other book, Hacking looked into the history of the science of memory, part of his interest in the popularity, in the late 1980s and early 1990s, of repressed memory syndrome, the supposed belief that deeply repressed memories could be called back to consciousness with the help of therapists. Hacking notes that the science of memory grew up to replace talk of the soul. Instead of pondering the soul,