DATA SMOG
Surviving the Info Glut

BY DAVID SHENK

During the infancy of my career as a freelance writer, a man came to my home in Washington, D.C., to install a prolific new appliance. The machine gave me access to the Federal News Service, which I felt sure would give me a leg up. Every day, morning, noon, and night, the printer spat out interviews from talk shows only moments after they had been broadcast, major speeches from senators, ambassadors, and other Washington heavies, and absolutely every utterance from the White House. Without ever leaving my home office, I felt plugged in.

The installation resulted from my decision to confront the rushing tide head on, to try to keep pace with the new and speedy, and to more or less disregard the old and slow.

As part of this approach I doggedly perused numerous newspapers, magazines, and wire services; I continually checked my e-mail; I watched Cable News Network; I stopped spending time with books and other cumbersome material that felt more like yesterday.
But I soon found that my reliable Federal News Service printer expected me to be its equal. It could print two pages a minute—why couldn’t I read two pages a minute? The printer had just spewed out a dozen transcripts. Was I still working on that same paragraph?

Somewhere along the line, the empowering eagle became an albatross. In a month or so, I pulled the plug. The nice man came back and carted the machine away. I locked the gate behind him.

Some years later, in a classroom at Columbia University, I attended a guest lecture given by Brian Lamb, sometime anchor of the two C-SPAN channels, which broadcast congressional debates and other government proceedings. For an hour or so, Lamb spoke confidently about the history of C-SPAN and why he believed it to be a vital public service. He boasted of his plans to introduce the new cable channels C-SPAN3, C-SPAN4, and C-SPAN5. But then his host, Columbia economics professor and communications specialist Eli Noam, asked Lamb two simple questions: “Is more information necessarily good? Does it really improve the political process?”

“I haven’t got a clue as to whether it’s good or bad,” Lamb replied. “But you can’t stop this process. It’s the American way. Which part of the library or the Internet do you want to shut down?”

At home, at work, and even at play, communication has engulfed our lives. To be human is to traffic in enormous chunks of data. “Tens of thousands of words daily pulse through our beleaguered brains,” says philosopher Philip Novak, “accompanied by a massive amount of other auditory and visual stimuli. No wonder we feel burnt.”

If the concept of too much information seems odd and vaguely inhuman, that’s because, in evolutionary-historical terms, it is. For 100,000 years people have been able to examine and consider information about as quickly as they have been able to create and circulate it. A range of communication technologies from the drum and smoke signal to the telegraph and telephone enabled us to develop and sustain culture and overcome our fear of others, diminishing the likelihood of conflict. But in the middle of this century the introduction of computers, microwave transmissions, television, and satellites abruptly knocked this graceful synchrony off track. These hyper-production and hyper-distribution mechanisms have surged ahead and left us with a permanent processing deficit—what Finnish sociologist Jaako Lehtonen calls an “information discrepancy.”

In 1850, 4 percent of American workers handled information for a living; now most do, and information processing, as opposed to manufacturing material goods, now accounts for more than half the U.S. gross national product. Information has become so ubiquitous partly because producing, manipulating, and disseminating information has become cheap and easy; with a thumb and index finger, we effortlessly copy and paste sentences, paragraphs, books, and “carbon copy” e-mail to one or one hundred others.

We crave and pay handsomely for some of the information we receive—the seductive, mesmerizing quick-cut television ads and the 24-hour up-to-the-minute news flashes. It arrives in the form of the faxes we request as well as the ones we don’t; we pursue it through the Web sites we eagerly visit before and after dinner, the pile of magazines we pour through every month, and the dozens of channels we flip through whenever we have a free moment.

What is the harm of this incessant barrage of stimuli captivating our senses at virtually every waking moment? “We’re exceptional at storing information,” explains UCLA memory expert Robert Bjork. “But there are retrieval limitations.” Memory is stored according to specific cues—contexts within which the information is experienced. When the contexts begin to vanish in a sea of data, it becomes more difficult to remember any single piece of it. The more we know, the less we know.

“We’re pushing ourselves to speeds beyond which it appears we were designed to live,” says Nelson Thall, research director at the University of Toronto’s Marshall McLuhan Center. “Electric technology speeds up the mind to an extraordinary degree, but the body stays in place. This gap causes a lot of stress.”

At a certain level of input the glut becomes a cloud of data smog that no longer adds to our quality of life but instead begins to cultivate stress, confusion, and even ignorance. Information overload crowds out quiet moments and obstructs much-needed contemplation. It spoils conversation, literature, and even entertainment. It leaves us more vulnerable as consumers and less cohesive as a society. “We tend to make very unsophisticated inferences when we’re under cognitive load,” says University of Texas psychologist Dan Gilbert. “Thinking deeply cannot be done.” Since today’s glutted environment renders consumers distracted and easily open to suggestion, data smog may just be the best thing to come along for hyperinformed marketers since planned obsolescence.

This isn’t the first time we have confronted the unpleasant side effects of abundance. We who live in the most sophisticated and successful nation on earth...
have routinely found ourselves burdened by problems of excess. Now, exploring the critical distinction between information and understanding—and finding some healthful remedies—is one of the most important things we can do.

**Peddling Information Anxiety**

When I visited an old friend from high school at his office at Microsoft one spring, he took me on a swing through the company store, where employees can buy software for 80 percent off. My eyes darted around manically and my pulse raced as I amassed stacks of CD-ROMs and added the latest upgrade of Microsoft Word to the pile. The latter seemed like a terrific bargain as it included dozens of sensational new formatting features like AutoCorrect, AutoText, 100-Level Undo, drag-and-drop editing, Table AutoFormat, and something called Wizards.

But the bargain on Word 6.0 turned out to be wasted cash. After I installed the program's 13 high-density disks onto my hard drive (the previous upgrade had required just 5), I found that all the new bells and whistles had transformed the program into a zoo of capabilities that were cumbersome to learn and had slowed even the most elemental functions to a painful crawl. The minor fiasco raised the obvious question: if it wasn't broke, why had they tried so hard to fix it?

Mostly because it's terrifically profitable. The goal of the information industry is to convince consumers that, whatever they have, it isn't enough. That strategy reaps billions of dollars every year for programmers, manufacturers, marketers, and public relations professionals. If Windows 95 felt like old news in 1996, that's because Microsoft planned it that way. Since Microsoft makes most of its profits on upgrades, the real product it is selling isn't hardware or software but information anxiety.

It works. At the beginning of this decade, IBM found that people were replacing their computers every five years. By 1995, users were considering their machines obsolete in just two years. What they only yesterday regarded as critical machinery they now saw as useless plastic. Overall, by the year 2005, the nation will have tossed some 150 million computers onto the scrap heap.

Upgrade mania does not come cheap. While personal computers are relatively inexpensive compared...
with their bulky predecessors, the pace of improvements is such that the personal computer habit ends up costing individuals and businesses a significant chunk of change. “Did you ever notice how, for anything else, three hundred dollars is a lot of money?” a friend remarks as we drool over CD-ROM drives in a computer store. “But in the computer universe, we don’t think twice about spending it.”

Upgrade mania also exacts a social cost that cannot be measured in dollars. “We see a training gap,” says Oracle’s Bill Seawick. “Technology is coming at such a fantastic pace that people have to learn new technologies every three or four months.” What’s more, points out economist Juliet Schor, new technology “leads to the expansion of tasks that people are expected to do. We are supposed to improve our performance and output year after year after year.”

When Americans tell pollsters and therapists that they feel they are losing control over the basic structures of their lives, it’s partly because they are. The ferocious upgrading of the machinery all around us undermines our sense of security and continuity.

The Normalization of Hype

On National Public Radio’s “All Things Considered” one evening, reporter Chitra Ragavan is trying to make sense of the latest cancer study, which doesn’t mesh with previous analysis. “If you don’t have some level of confusion about how to interpret this study,” the National Cancer Institute’s Philip Taylor tells Ragavan, “you should.”

In an era in which limitless data make possible a widening pool of elaborate studies and arguments on every side of every question, more expert knowledge has, paradoxically, led to less clarity. Is dioxin as dangerous as we once thought? Do vitamins prevent cancer? Would jobs have been gained or lost under Bill Clinton’s comprehensive health care plan?

Because there is always an opportunity to crunch some more numbers, spin them a bit, and prove the opposite, the winner has become argumentation itself. Factionalism gets a big boost while dialogue and consensus—the marrow of democracy—run thinner and thinner every year. Nowhere are the stat wars more heated than in Washington, D.C., where supplying grist for endless policy debates has become a significant industry. With purposefully vague and formidable names like Institute for Responsive Government and the National Center for Policy Analysis, hundreds of so-called “think tanks” have popped up to become masters of contention. Shaping the mood of Washington begins with press play, and every think tank has a point person to coordinate the flow of information. “I probably have four to five thousand journalists on my system,” estimates Vincent Sollitto of the American Enterprise Institute. “That’s just about every journalist in the world. They are cross-referenced in a tier form—national media, regional media, trade press, foreign press, and then cross-referenced by interest code—people interested in the environment, in economics, in other topics.”

Public relations agencies profit handsomely from fanning debates, and television shows like “Crossfire” are specifically designed to exploit the entertainment value of the stat-war phenomenon. The charges fly back and forth across the table as furiously as a ping pong ball. But there is no referee and no official scoring; the show always ends before viewers have time to gauge the accuracy of the shots.

The statistical anarchy freezes us in our cerebral tracks: we react to an overabundance of competing expert opinions by simply avoiding coming to conclu-
visions. As the amount of information and number of claims stretches toward infinity, we are on the verge of succumbing to paralysis by analysis.

Inevitably, to attract people's attention, communicators of all types resort to barrier-piercing countermeasures, feeding a vicious spiral in which the data smog gets thicker and thicker and the efforts to cut through the smog ever more desperate. Advertising becomes noisier and more invasive and frequently skirts the bounds of taste. Films become ever more sexually explicit and violent. The basic character of our future information society has already formed: its colors are lighted in a blaze of neon; its audio track is full of expletives, insults, and explosions; and its cultural trademark is the ever-more-outrageous public relations stunt, such as the offer by a San Francisco radio station of a case of Snapple to the family of the one-thousandth person to commit suicide by jumping from the Golden Gate Bridge.

Our society is experiencing what communications scholar Kathleen Hall Jamieson calls "the normalization of hyperbole." The degree to which today's television programmers, movie producers, performers, spokespersons, and publishers apparently feel compelled to turn up the heat is a serious threat to moderation and intelligence. It reduces our attention span. It makes us numb to anything that doesn't lurch out and grab us by the throat.

This effect is one of the main reasons political campaigns have become so acrimonious. The growing mean-spiritedness merely reflects a society where hyperbole, vulgarity, and ostentation thrive. In a Maryland senate race, William Brock III falsely suggested that Ruthann Aron, his opponent in the primary, had been convicted of fraud. Aron sued. In his defense, Brock offered as justification: "Everybody knows there's hyperbole in election campaigns."

Unfortunately, this approach may discourage some of our best minds from entering the public debate. If one has to be sensational and dramatic to gain attention, what does that portend for the insightful minds whose ideas don't lend themselves to MTV or flashy Web pages? If our attention naturally gravitates toward the Madonnas and Howard Sterns of the world, who is left behind in the dust? The normalization of hyperbole suppresses the individuals we most desperately need in our complex times—those who are willing to confront life's ambiguities.

**Village of Babel**

When I visited James Quello, head of the Federal Communications Commission, in his office to discuss surveys that showed a surprising lack of knowledge about political affairs among the American public, he commented, "If people would just tune in, they'd be better informed." The problem, of course, is that people are tuning in but they're acquiring specialized knowledge.

"There is so much information," laments pollster Andrew Kohut, "that people throw their hands up and say, 'Well, I'm going to focus on this very narrow part of the world.'"

A pluralistic democracy requires a certain amount of tolerance and consensus rooted in an ability to agree on common questions. Yet in an electronic world of endless communication choices, we increasingly speak different languages and share fewer metaphors, icons, historical interests, and news events. Bill Gates celebrated "asynchrony" is but an eloquent way of saying that we are out of step with one another.

This response is one reason for the troubling level of social polarization plaguing the United States. We face a paradoxical spiral in which the more information we come upon, the more we narrow our focus and retreat into different spheres of knowledge. We are, as writer Earl Shorris says, "A nation of lonely molecules."

The Internet promotes this trend. Although 11 billion words on 22 million Web pages give us access to more information than ever before, Web surfers often explore their personal interests, and are often rewarded with highly specific information and communicate only with people who share those interests.

Software enabling us to create "smart agents" that automatically filter out information we don't think we need will further exacerbate this trend: stumbling onto new and interesting subject matter becomes much less likely in a customized information environment. Nicholas Negroponte of the MIT Media Lab insists that smart agents can and should include an adjustable "serendipity dial." But one can not automate spontaneity.

The Internet does allow previously disenfranchised groups to communicate cheaply without geographic limitation. Gays and lesbians, for example, inherently dispersed throughout society, have benefited tremendously from online forums that offer the opportunity to share their thoughts about what it means to be gay, practical considerations about living a healthy, happy life, and techniques for forcing politicians to take them seriously as a group with important interests. But there is a great danger of mistaking cultural tribalism among people with obviously common interests for real, shared understanding among more diverse groups.

Journalists can provide the vital social glue that makes us a common unit, and also help us analyze competing statistical claims. Unfortunately, many journalists reflexively balk at the prospect of stories that smell of "old news," reporting instead the latest opin-
ion poll, the shocking personal indiscretion, this morning's testimony.

The news-flash mindset arose among a group of producers at a weekly editorial meeting I attended years ago for National Public Radio's "Talk of the Nation." One of us had suggested an educational show on AIDS prevention, in light of polls that showed much ignorance on the subject. But both the senior producer and the host quashed the idea, insisting that the information had already been reported and that it was "not our job to educate people."

But by limiting their purview to news flashes, journalists are absolving themselves of having to consider a variant of the tree-falls-in-the-woods dilemma: what happens when information is reported but everyone is too distracted to notice? Many journalists haven't yet come to terms with the implications of our society's fundamental shift from scarcity to glut, which is why Yahoo, Alta Vista, and other World Wide Web search engines are on their way to becoming our primary information sources. Journalists need to approach information as a natural resource that has to be managed and analyzed more than simply acquired.

A Return to Meaning

In the late 1960s and early 1970s, Americans began to realize that they had to take action to limit the physical smog and other pollution accruing all around them. Meanwhile, people also became aware of the severe consequences of consuming too many calories and too much fat, and the need to limit their intake. Now a similar challenge befalls citizens of the information age. For our individual well-being as well as the health of our democratic society, we must act now to responsibly limit our exposure to information. The goal should be to maintain and even increase access to reliable and useful communication without compromising a certain social serenity. Fortunately, a number of promising remedies for data smog are available if we stop for a moment to look around us.

Be your own smart agent. You are responsible for managing your own signal-to-noise ratio, for choosing the information that is accurate, relevant, economical, articulate, and evocative while eliminating anything that blocks out meaning. As your own smart agent, you are also your own data dietitian. Take some time to examine your daily intake and consider whether your info diet needs some fine-tuning—perhaps some data naps in the afternoon, during which you receive no electronic information. Many victims of glut have also found periodic data fasts rejuvenating. One sure way to gauge the value of something, after all, is to go without it for a while.

For example, turn the television o ff. There is no quicker way to regain control of the pace of your life, the peace of your home, and the content of your thinking. Millions of Americans who have limited their TV viewing have discovered hours of free time with which they can begin to do some of the things they've never found time for. My own approach has been to move the offending item from the kitchen/living room into the closet. There it stays except for a few select hours per week, when I lug it out, plug it in and turn it on. After a brief viewing, it goes straight back to the closet. Since the television has been consigned to the closet, my wife and I play more music, we read more, we talk more.

A suggested trade-off: cancel your cable TV service and apply that same $20 per month to one or more good books. Books are the opposite of television: they
are slow, engaging, inspiring, intellect-arousing, and creativity-spurring.

Another strategy is to avoid news nuggets. All-news channels, wire services, and top-of-the-hour headlines may be the only common fabric we have left, but that isn’t reason enough to sacrifice your attention span. Spend those five minutes each hour doing something more productive, like conducting one meaningful conversation.

And recall the playful warning of Michael Dertouzos, head of MIT’s Laboratory for Computer Science, in this magazine (see “Seven Thinkers in Search of an Information Highway,” August/September 1994): “E-mail is an open duct into your central nervous system. It occupies the brain and reduces productivity.” Ask people not to indiscriminately forward trivia. “Unsubscribe” to the Internet newsgroups that you’re no longer really interested in. Tell advertisers who “spam”—send you unsolicited e-mail messages—that you have no interest in their product and ask them to remove you from their customer list.

- Resist advertising and upgrade mania. Remember that upgrades are designed primarily as sales tools, not necessarily to give customers what they’ve been clamoring for.
- Say no to dataveillance. By writing just a few letters putting your name on do-not-disturb lists, you can greatly reduce the amount of junk mail and unsolicited phone calls that come your way.
- Leave the pager and cell phone behind. Are wireless communicators instruments of liberation, freeing people to be more mobile with their lives, or more like electronic leashes, keeping people more plugged-in to their work and info-glutted lives than is necessary and healthy? It is thrilling to be in touch with the world at all times, but it’s also draining and interfering. For sanity’s sake, people ought to be allowed to roam free from the information superhighway for at least some portion of each week.
- Give a hoot, don’t info-pollute. The info glut demands a new kind of social responsibility: an obligation to be more economical about what we say, write, publish, broadcast, and post. Everything from voice-mail messages to office memos to speeches to Web pages should be crisp, clear, and to the point. By reducing the amount of needless information, we will also reduce vulgarity, as people feel less need to be sensational to attract attention. Our tone will become more civil. Our social signal-to-noise ratio will begin to improve. We who have learned not to drink or eat or work to excess will now simply add another virtue to the list.

The payoff for such restraint is high. As we severely limit content, we learn to savor it more. I experienced this paradox firsthand when I asked my brother Jon to film my wedding. He owns a sophisticated Hi-8 camcorder, but he used an old Super 8 instead. In five hours he got through four rolls—12 minutes—of film. Weeks went by while we waited for them to come back from the developer. Finally, we sat down to watch our meager footage. The show was over in a flash, but we were thrilled. The three-minute films are cherished glimpses into our wedding and reception. In marked contrast to an uninterrupted three-hour video that dulls our senses and renders useless our memories, a medium that captures almost everything conveys almost nothing.

- De-nichify. How to change our electronic Tower of Babel into a modern Agora? The answer is easy, though the solution is not. We need to talk to one another.

By reaching out to different cultures and niches, Brian Lehrer, radio host of WNYC’s “On The Line” in New York City, underscores the simple notion that communities work better if people discuss their differences. One highlight is his annual multicultural out-reach on Martin Luther King Day, during which he invites listeners to call in and read one-minute excerpts from works about an ethnic group different from their own. On other days Lehrer might conduct informed
To prohibit firms from deluging us with solicitations based on unauthorized use of personal information, we need a long-sought upgrade of the Federal Privacy Act.

To prohibit government agencies and companies from using information for unauthorized purposes, we need a long-sought upgrade of the Federal Privacy Act of 1974, which set severe restrictions on the information government could collect on citizens but exempted businesses. Whether you are subscribing to a magazine, buying a modem, signing a petition, renewing your driver's license, taking a random drug test, enrolling your child in school, or paying your taxes, you should be assured that the personal data you turn over will go no further unless you specifically grant permission. This time, the law should exempt no one.

The Federal Trade Commission can also be an important player in limiting data smog. The FTC’s current policy is that consumers must match their wits against the claims and resources of advertisers. When it comes to “half truths and motivational manipulations,” writes Advertising Age columnist Stanley E. Cohen, “the remedy is caveat emptor.” This hardly seems a fair fight. We need a rejuvenated FTC that criticizes questionable marketing practices and imposes fines.

To ensure that citizens not only have online access to government documents and officials but understand the workings of government, a new Government Information Act must ensure that legislation, regulations, and court rulings as well as tax information is published in formats that any literate person can understand.

Finally, we need to reformulate the issue of information have-nots. The disenfranchised citizens of our country are not in need of faster access to bottomless wells of information but rather better education—high-quality teachers, classroom materials, and buildings. The best way to prevent data smog from settling in is to shift attention and resources toward basic educational infrastructure for all Americans.