

SOCIAL KNOWING

Every day, an iconic scene plays out in newsrooms around the country. Middle-aged white men sit around a table in a room with windows opening onto a vast, fluorescent-lit work space filled with desks and busy, busy people. It is the daily editorial meeting made famous in *All the President's Men* and dozens of other films and television shows. In this instance Hollywood gets it right. Editorial meetings are a pinnacle of power at newspapers. If you work hard as a journalist for many years, you just may be invited into the club.

The editors exert their power by deciding what to build on one of the most valuable pieces of real estate in the world: the two square feet or so that are the front page of the newspaper. Through their choices, the editors tell us what they think were the most significant events of the previous day. They rank each story through a code readers implicitly understand: Where on the page is it? Is it above the fold? How big is the headline? Did it merit a byline? Does it have a cute subhead to draw the reader in? Editors count on our being able to read the page's body language.

Digg.com, which describes itself as a "user driven social content website," also has a front page. It's not particularly pretty, featuring a playlist of headlines with two lines of summary. Next to each headline is a number representing the number of "diggs"—readers' thumbs-ups—each article has received. Any reader can suggest a story, and if enough people then vote the story out of the "Digg area queue," it gets

its time on the front page. The discussion about why a story is important takes place not around a table in an interior room but in public pages accessed through links on the front page that lead to comments left by dozens and sometimes hundreds of readers who talk with one another about the story's accuracy, importance, and meaning.

Digg is hardly unique. A similar site, *Reddit.com*, was created by a couple of college students over their summer vacation. *Common Times* is a Digg for left-of-center politicians. Similar sites are springing up every couple of weeks because they regularly turn up articles worth reading. In fact, the idea of using readers as an editorial board is already expanding in two useful directions: Sites that have nothing to do with news are using it, and sites are arising that determine the rankings based on social groups within the general readership. For example, if you tell *Rojo.com* who your friends are among other *Rojo* users, it will list stories that are popular among them. You can mark particular stories as of likely interest to your friends so that when they next visit *Rojo*, it will show them a list of stories you've recommended, including your comments. Another site, *TailRank*, lets you "narrow down your results to just news from your feeds, your tags, and your buddies," says Kevin Burton, its president. *Reddit* is adding a similar capability. *Rollyo.com* searches many different types of sources—not just news—working off lists supplied by friends and celebrities, so you can see, for instance, what's for sale in the set of online shopping sites compiled by your friends plus celebrities such as Debra Messing and Diane von Furstenberg.

Not all of these sites will survive. Indeed, some are likely to have vanished in the time it takes to bring this book to print. But some will survive and others will arise, because enabling groups of readers to influence one another's front pages not only brings us more relevant information, it also binds groups socially.

This binding is certainly different from the way broadcast media have formed one nation, under Walter Cronkite. With everyone seeing the same national news and reading the same handful of local newspapers, there was a shared experience that we could count on. Now, as our social networks create third-order front pages unique to

our group's interests, we at least get past the oft-heard objection that what Nicholas Negroponte called *The Daily Me* fragments our culture into isolated individuals. In fact, we are more likely to be reading *The Daily Me, My Friends, and Some Folks I Respect*. We're not being atomized. We're molecularizing, forming groups that create a local culture. What's happening falls between the expertise of the men in the editorial boardroom and the "wisdom of crowds." It is the wisdom of groups, employing *social expertise*, by which the connections among people help guide what the group learns and knows.

The *New York Times* was founded in 1851 and the Associated Press in 1848. Such organizations have a resilience that should not be underestimated. But they will need it if they are to survive the ecological change that is occurring. We simply don't know what will emerge to challenge newspapers, any more than Melvil Dewey could have predicted Google or the *Britannica* could have predicted Wikipedia.

Dollars to donuts, though, the change will be toward the miscellaneous, and it will draw on social expertise rather than rely on men in a well-lit room.

THE CONUNDRUM OF CONTROL

In February 2005, Michael Gorman, the president of the American Library Association, lambasted weblogs in the association's flagship magazine, *Library Journal*:

A blog is a species of interactive electronic diary by means of which the unpublishable, untrammelled by editors or the rules of grammar, can communicate their thoughts via the web. . . .

Given the quality of the writing in the blogs I have seen, I doubt that many of the Blog People are in the habit of sustained reading of complex texts. It is entirely possible that their intellectual needs are met by an accumulation of random facts and paragraphs.

Some librarians—especially those who were also Blog People—were outraged. "An example of irresponsible leadership at its worst,"

wrote Sarah Houghton on her blog, *Librarian in Black*. “Excoriating ad hominem attacks wrapped in academic overspeak,” blogged Free Range Librarian Karen Schneider, adding, “No citations, of course.” The best title of a blog post had to be “Turkey ALA King” by Michael D. Bates at BatesLine.

Gorman brushed off his critics, citing his “old fashioned belief that, if one wishes to air one’s views and be taken seriously, one should go through the publishing/editing process.” How fortunate for Gorman that he heads an organization with its own journal.

But then Gorman is hardly alone in his skepticism about online sources. In October of the same year, Philip Bradley, a librarian and Internet consultant, said in the *Guardian* that Wikipedia is theoretically “a lovely idea,” but “I wouldn’t use it, and I’m not aware of a single librarian who would.”

Robert McHenry, a former editor in chief of the *Encyclopaedia Britannica*, summed up his analysis of Wikipedia:

The user who visits Wikipedia to learn about some subject, to confirm some matter of fact, is rather in the position of a visitor to a public restroom. It may be obviously dirty, so that he knows to exercise great care, or it may seem fairly clean, so that he may be lulled into a false sense of security. What he certainly does not know is who has used the facilities before him.

If these experts of the second order sound a bit hysterical, it is understandable. The change they’re facing from the miscellaneous is deep and real. Authorities have long filtered and organized information for us, protecting us from what isn’t worth our time and helping us find what we need to give our beliefs a sturdy foundation. But with the miscellaneous, it’s all available to us, unfiltered.

More is at stake than how we’re going to organize our libraries. Businesses have traditionally owned not only their information assets but also the organization of that information. For some, their business *is* the organization of information. The Online Computer Library Center bought the Dewey Decimal Classification system in

1988 as part of its acquisition of Forest Press. To protect its trademark, in 2003 the OCLC sued a New York City hotel with a library theme for denoting its rooms with Dewey numbers. Westlaw makes a good profit providing the standard numbering of court cases, applying proprietary metadata to material in the public domain. But just about every industry that creates or distributes content—ideas, information, or creativity in any form—exerts control over how that content is organized. The front page of the newspaper, the selection of movies playing at your local theater, the order of publicly available facts in an almanac, the layout of a music store, and the order of marching bands in the Macy's Thanksgiving Day Parade all bring significant value to the companies that control them.

This creates a conundrum for businesses as they enter the digital order. If they don't allow their users to structure information for themselves, they'll lose their patrons. If they do allow patrons to structure information for themselves, the organizations will lose much of their authority, power, and control.

The paradox is already resolving itself. Customers, patrons, users, and citizens are not waiting for permission to take control of finding and organizing information. And we're doing it not just as individuals. Knowledge—its content and its organization—is becoming a social act.

ANONYMOUS AUTHORS

The real estate industry maintains its grip on its market through the National Association of Realtors' control of the nation's 880 local multiple listing services (MLS). NAR is North America's largest trade association, the third-largest lobby, and was the third-largest donor in the 2004 presidential election. It has almost 1.3 million members, which means that one out of every 230 Americans belongs to it. NAR protects its members' interests by locking low-cost brokers out of local listings, defending the standard 5 to 6 percent fee. So when real estate sites like PropSmart.com and Zillow.com came along, NAR wasn't happy. PropSmart automatically scours the Web, populating

Google maps with every real estate listing it can find. If a user finds a listing she's interested in at PropSmart, the site puts her in touch with the local real estate agent offering it. Although this would seem to be nothing but a benefit for the local agents, Ron Hornbaker, the founder of PropSmart, regularly receives angry letters from MLS lawyers because, with fees for residential property reaching \$61 billion in 2004, NAR is desperate to keep the listing centralized and under its control. As PropSmart and Zillow add features that allow users to sort through listings by distance from schools, environmental quality, and crime safety statistics—pulling together leaves from multiple sources—NAR is right to feel that its business model is being threatened. The threat comes not from particular sites such as PropSmart but from the difficulty of keeping information from becoming miscellaneous.

The miscellanizing of information endangers some of our most well-established institutions, especially those that get their authority directly from their grip on knowledge. The *Encyclopaedia Britannica* is up-front about where its authority comes from, writing that its editorial board of advisors includes "Nobel laureates and Pulitzer Prize winners, the leading scholars, writers, artists, public servants, and activists who are at the top of their fields." The *Britannica* trumpets past contributors such as Albert Einstein, Sigmund Freud, and Marie Curie. The credibility of its authors and editors is the bedrock of the *Britannica's* authority.

No wonder Wikipedia took the *Britannica* by surprise. Wikipedia has no official editors, no well-regulated editorial process, no controls on when an article is judged to be ready for publication. Its authors need not have any credentials at all. In fact, the authors don't even have to have a name. Wikipedia's embrace of miscellaneous, anonymous authorship engenders resistance so strong that it sometimes gets in the way of understanding.

How else to explain the harsh reaction to the now famous "Seigenthaler Affair"? For four months in the spring of 2005, Wikipedia readers could find an article that matter-of-factly claimed that the respected print journalist and editor John Seigenthaler was implicated

in the assassinations of both John and Robert Kennedy. It was a particularly vicious lie given that Seigenthaler had worked for Robert Kennedy and was a pallbearer at his funeral.

As soon as Seigenthaler told a friend about it, the friend corrected the article. But Seigenthaler was shocked that for those four months, anyone who looked him up would have read the calumny. "At age 78, I thought I was beyond surprise or hurt at anything negative said about me. I was wrong," he wrote in an op-ed for *USA Today*. "Naturally, I want to unmask my 'biographer.' And, I am interested in letting many people know that Wikipedia is a flawed and irresponsible research tool."

As Jimmy Wales, the founder of Wikipedia, later said in response to the media hubbub: "Wikipedia contained an error. How shocking!" Wales was mocking the media, not downplaying Seigenthaler's distress. Indeed, Wales responded quickly with a change in Wikipedia's ground rules. No longer would anonymous users be allowed to initiate new articles, although they could continue to edit existing ones. The media headlines crowed that Wikipedia had finally admitted that real knowledge comes from credentialed experts who take responsibility for what they say. Wikipedia was growing up, the media implied.

Unfortunately, in their eagerness to chide Wikipedia, the media got the story backward and possibly inside out. In fact, Wales's change *increased* the anonymity of Wikipedia. Registering at Wikipedia requires making up a nickname—a pseudonym—and a password. That's all Wikipedia knows about its registered users, and it has no way to identify them further. If you don't register, however, Wikipedia notes your Internet protocol address, a unique identifier assigned by your Internet service provider. Requiring people to register before creating new articles actually makes contributors more anonymous, not less. Explains Wales, "We care about pseudoidentity, not identity. The fact that a certain user has a persistent pseudoidentity over time allows us to gauge the quality of that user without having any idea of who it really is." At Wikipedia, credibility isn't about an author's credentials; it's about an author's contributions.

The *Encyclopaedia Britannica* has Nobelists and scholars, but Wikipedia has Zocky. Zocky has contributed mightily in hundreds of articles. If Wales and the Wikipedia community see that an edit was made by Zocky, they know it has value because Zocky's many contributions have shaped a reputation. But no one—including Wales—knows anything else about her or him. Zocky could be a seventy-year-old Oxford don or a Dumpster-diving crack addict. The personal peccadilloes of the greatest contributors to Wikipedia might top those of the greatest citizen contributor to the *Oxford English Dictionary*, the famously criminally insane murderer who did his research from his prison hospital. Would it matter?

To succeed as a Wikipedia author—for your contribution to persist and for it to burnish your reputation—it's not enough to know your stuff. You also have to know how to play well with others. If you walk off in a huff the first time someone edits your prose, you won't have any more effect on the article. You need to be able to stick around, argue for your position, and negotiate the wording. The aim is not to come up with an article that is as bland as the minutes of a meeting; the article about Robert Kennedy, for instance, is rather touching in its straightforward account of the reaction to his assassination. Wikipedia insists that authors talk and negotiate because it's deadly serious about achieving a neutral point of view.

Neutrality is a tough term. The existentialism of the 1950s, the New Journalism of the 1960s, and contemporary postmodernism have all told us not only that humans can't ever be neutral but also that the claim of neutrality is frequently a weapon institutions use to maintain their position of power and privilege. The first time I talked with Jimmy Wales, I started to ask him about the impossibility of neutrality. Wales politely and quickly cut me off. "I'm not all that interested in French philosophy," he said. "An article is neutral when people have stopped changing it."

This is a brilliant operational definition of neutrality, one that makes it a function of social interaction, not a quality of writing to be judged from on high. And Wikipedia's approach usually works

quite well. Take the entry on the Swift Boat Veterans for Truth, the group that during the 2004 presidential campaign attacked John Kerry's Vietnam war record. Let's say you're incensed that the Wikipedia article states that Kerry earned three combat medals. From your point of view, he may have earned one, but the other two were awarded inappropriately and, in any case, had nothing to do with combat. So you edit the reference to call them "service" medals. When you later return to the article, you notice that someone has reinstated the word "combat." You could reinstate your change, but it's likely that it will be changed back to "combat." You could go to the "discussion" page attached to each Wikipedia article and explain why you think calling them "combat medals" wrongly tilts the page in favor of Kerry. Or you could come up with alternative language for the article that you think would satisfy those who disagree with you; for example, you could add details describing the controversy over those medals in a manner all disputants would accept. Either way, Wikipedia edges closer to the neutral point of view so valued by Wikipedians that they've turned it into the acronym NPOV.

This very controversy arose at the Swift Boat article. On the article's "discussion" page you can read the back-and-forth, one contributor declaring that he must "absolutely oppose" the use of the word "combat," others arguing that "combat" is the right word. The conversation turns angry. One contributor throws up her or his virtual hands, addressing another's "poisoned" behavior. At other times the participants work together to come up with wording that will meet everyone's idea of what is fair and accurate. Trying out shades of meaning in a process that can look like hairsplitting—did Kerry toss "decoration items" or "decoration paraphernalia" over the White House fence?—the discussion is actually a negotiation zeroing in on neutrality.

Of course, not everyone who reads the Swift Boat article is going to agree that NPOV has been achieved. But if you question the neutrality of the Swift Boat article, you'd be well-advised to read the discussion page before making an edit. In a high-visibility article such as

this one, you are likely to find that the point that bothers you has been well discussed, evidence has been adduced, tempers have cooled, and language has been carefully worked out. On rare occasions when agreement can't be reached and the page is being edited back and forth at head-whipping velocity, Wikipedia temporarily locks the page—but only temporarily.

It may take years for a discussion to settle down. Samuel Klein, who describes himself as a “free knowledge activist” and is the director of content for the One Laptop Per Child project in Cambridge, Massachusetts, is a respected contributor to Wikipedia under the pseudonym SJ. He describes an argument that raged for three years about whether articles that mention the sixth-largest city in Poland should refer to it as Gdańsk, as it's called in Polish, or Danzig, as it's known in German. The “edit war” was so ferocious that it was finally put to a vote, which determined that when referring to the city between 1308 and 1945, articles should use its German name, but the Polish name for any other period. The vote also decided that at the first use of the name, the other name should be placed in parentheses. If you want to read the arguments and follow the evidence, it's all there in the discussion pages of Wikipedia, open to anyone. (Imagine if we could read the discussion pages about a 1950s Wikipedia entry on segregation.)

Wikipedia works as well as it does—the journal *Nature's* discovery that science articles in Wikipedia and *Britannica* are roughly equivalent in their accuracy has been a Rorschach test of the project—because Wikipedia is to a large degree the product of a community, not just of disconnected individuals. Despite the mainstream media's insistence, it is not a purely bottom-up encyclopedia and was never intended to be. Wales is a pragmatic Libertarian. A former options trader, in 2000 he cofounded an online encyclopedia called Nupedia that relied on experts and peer review; it was funded mainly by the money Wales made as a founder of Bomis, a “guy-oriented” search engine that knew where to find soft-core porn. Over the course of three years, twenty-four articles had completed the review process at Nupedia. Expertise was slowing the project down. He and a colleague founded Wikipedia in 2001, and Wales left Nupedia in 2002.

Wales, who is both fierce about his beliefs and disarmingly non-defensive about them, emphasizes that from the beginning his aim has been to create a world-class encyclopedia, not to conduct an experiment in social equality. When the quality of the encyclopedia requires sacrificing the purity of its bottom-upness, Wales chooses quality. Yet the media is continually shocked to discover that Wikipedia is not purely egalitarian, trumpeting this as if it were Wikipedia's dirty secret. Wales is proud of the fact that a community of about eight hundred people has emerged to curate and administer Wikipedia as needed. These administrators are granted special privileges: undoing a vandal's work by reverting pages to previous versions, freezing pages that are rapidly flipping back and forth in an edit war, even banning a contributor because he repeatedly restored contested edits without explaining why. This type of hierarchy may be anathema to bottom-up purists, but without it, Wikipedia would not work. Indeed, in the "stump speech" he gives frequently, Wales cites research that shows that half of the edits are done by just less than 1 percent of all users (about six hundred people) and the most active 2 percent of users (about fifteen hundred people) have done nearly three-quarters of all the edits. Far from hiding this hierarchy, Wales is possibly overstating it. Aaron Swartz, a Wikipedia administrator, analyzed how many letters were typed by each person making edits and concluded that the bulk of *substantial* content is indeed created by occasional unregistered contributors, while the 2 percent generally tweak the format of entries and word usage. In either case, Wikipedia is not as purely bottom-up as the media keeps insisting it's supposed to be. It's a pragmatic utopian community that begins with a minimum of structure, out of which emerge social structures as needed. By watching it, we can see which of the accoutrements of traditional knowledge are mere trappings and which inhere in knowledge's nature.

And what is the most important lesson Wikipedia teaches us? That Wikipedia is possible. A miscellaneous collection of anonymous and pseudonymous authors can precipitate knowledge.

AUTHORITY AND TRUTH

It wasn't enough for the Wizard of Oz to tell the truth. He had to tell the truth in an amplified voice that emerged from an amplified image of his visage, in a chamber grand enough to intimidate even the bravest of lions. Given a choice between truth and authority, the Wizard would probably have chosen the latter.

Social knowledge takes a different tack. When its social processes don't result in a neutral article, Wikipedia resorts to a notice at the top of the page:

The neutrality of this article is disputed.
Please see discussion on the talk page.

Wikipedia has an arsenal of such notices, including:

- The neutrality and factual accuracy of this article are disputed.
- The truthfulness of this article has been questioned. It is believed that some or all of its contents *might* constitute a hoax.
- An editor has expressed a concern that the topic of this article may be unencyclopedic.
- Some of the information in this article or section has not been verified and might not be reliable. It should be checked for inaccuracies and modified as needed, citing sources.
- The current version of this article or section reads like an advertisement.
- The current version of this article or section reads like a sermon.
- The neutrality of this article or section may be compromised by “weasel words.”
- This article is a frequent source of heated debate. Please try to keep a cool head when responding to comments on this talk page.

These labels, oddly enough, add to Wikipedia's credibility. We can see for ourselves that Wikipedia isn't so interested in pretending it's perfect that it will cover up its weaknesses.

Why, then, is it so hard to imagine seeing the equivalent disclaimers in traditional newspapers or encyclopedias? Newspaper stories do sometimes qualify the reliability of their sources—"according to a source close to the official but who was not actually at the meeting and whose story is disputed by other unnamed sources who were present"—but the stories themselves are presented as nothing less than rock solid. And, of course, there are the small boxes on inner pages correcting errors on the front pages, ombudsmen who nip at the hands that feed them, and letters to the editor carefully selected by the editors. Yet the impression remains that the traditional sources are embarrassed by corrections. Wikipedia, on the other hand, only progresses by being up-front about errors and omissions. It Socratically revels in being corrected.

By announcing weaknesses without hesitation, Wikipedia simultaneously gives up on being an Oz-like authority and helps us better decide what to believe. A similar delaminating of authority and knowledge would have serious consequences for traditional sources of information because their economic value rests on us believing them. The more authoritative they are, the greater their perceived value. Besides, fixing an error in second-order publications is a much bigger deal because it requires starting up an editorial process, printing presses, and delivery vans. At Wikipedia, a libel in an article about a respected journalist can be corrected within seconds of someone noticing—and because so many leaves are connected, it can literally take seconds for someone to notice. When *Nature* magazine released its comparison of the error rates in Wikipedia and the *Encyclopaedia Britannica*, Wikipedians took pride in making most of the corrections to their entries within days and all of them within thirty-five days, though some of the changes, such as whether Mendeleev was the thirteenth or fourteenth child of seventeen, required extensive research. Wikipedia even has a page listing errors in the *Britannica* that

have been corrected in the equivalent Wikipedia articles. There is no explicit indication of gloating.

Anonymous authors. No editors. No special privileges for experts. Signs plastering articles detailing the ways they fall short. All the disagreements about each article posted in public. Easy access to all the previous drafts—including highlighting of the specific changes. No one who can certify that an article is done and ready. It would seem that Wikipedia does everything in its power to avoid being an authority, yet that seems only to increase its authority—a paradox that indicates an important change in the nature of authority itself.

Wikipedia and *Britannica* derive their authority from different sources. The mere fact that an article is in the *Britannica* means we should probably believe it because we know it's gone through extensive editorial review. But that an article appears in Wikipedia does not mean it's credible. After all, you might happen to hit the article right after some anonymous wacko wrote that John Seigenthaler was implicated in the assassination of Robert Kennedy. And yet we do—reasonably—rely on articles in Wikipedia. There are other indications available to us: Is it so minor an article that few have worked it over? Are there obvious signs of a lack of NPOV? Is it badly written and organized? Are there any notes on the discussion page? Does it cohere with what we know of the world? These marks aren't that far removed from the ones that lead us to trust another person in conversation: What's her tone of voice? Does it sound like her views have been tempered by conversation, or is she dogmatically shouting her unwavering opinions at us? We rely on this type of contextual metadata in conversation, and it only occasionally steers us wrong. An article in Wikipedia is more likely to be right than wrong, just as a sentence said to you by another person is more likely to be the truth than a lie.

The trust we place in the *Britannica* enables us to be passive knowers: You merely have to look a topic up to find out about it. But Wikipedia provides the metadata surrounding an article—edits, discussions, warnings, links to other edits by the contributors—because it expects the reader to be *actively* involved, alert to the signs. This burden comes straight from the nature of the miscellaneous itself.

Give us a *Britannica* article, written by experts who filter and weigh the evidence for us, and we can absorb it passively. But set us loose in a pile of leaves so large that we can't see its boundaries and we'll need more and more metadata to play in to find our way. Deciding what to believe is now our burden. It always was, but in the paper-order world where publishing was so expensive that we needed people to be filterers, it was easier to think our passivity was an inevitable part of learning; we thought knowledge just worked that way.

Increasingly we're rejecting the traditional assumption of passivity. For ten years now, customers have been demanding that sites get past the controlled presentation of "brochureware." They want to get the complete specifications, read unfiltered customer reviews, and write their own reviews—good or bad. The Web site for the movie *The Da Vinci Code* made a point of inviting *anyone* to discuss the religious controversy of the film; by doing so, the studio reaped media attention, market buzz, and audience engagement. Citizens are starting not to excuse political candidates who have Web sites that do nothing but throw virtual confetti. They want to be able to explore politicians' platforms, and they reward candidates with unbounded enthusiasm when the candidates trust their supporters to talk openly about them on their sites.

In a miscellaneous world, an Oz-like authority that speaks in a single voice with unshakable confidence is a blowhard. Authority now comes from enabling us inescapably fallible creatures to explore the differences among us, together.

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Imagine two people editing and reediting a Wikipedia article, articulating their differences on the article's discussion page. They edge toward an article acceptable to both of them through a public negotiation of knowledge and come to a resolution. Yet the page they've negotiated may not represent either person's point of view precisely. The knowing happened not in either one's brain but in their conversation. The knowledge exists between the contributors. It is knowl-

edge that has no knower. Social knowing changes *who* does the knowing and *how*, more than it changes the *what* of knowledge.

Now poke your head into a classroom toward the end of the school year. In Massachusetts, where I live, you're statistically likely to see students with their heads bowed, using No. 2 pencils to fill in examinations mandated by the Massachusetts Comprehensive Assessment System. Fulfilling the mandate of the federal No Child Left Behind Act, the MCAS measures how well schools are teaching the standardized curricula the state has formulated and whether students are qualified for high school degrees. Starting with the third grade, students' education is now geared toward those moments every year when the law requires that they sit by themselves and answer questions on a piece of paper. The implicit lesson is unmistakable: Knowing is something done by individuals. It is something that happens inside your brain. The mark of knowing is being able to fill in a paper with the right answers. Knowledge could not get any less social. In fact, in those circumstances when knowledge is social we call it cheating.

Nor could the disconnect get much wider between the official state view of education and how our children are learning. In most American households, the computer on which students do their homework is likely to be connected to the Net. Even if their teachers let them use only approved sources on the Web, chances are good that any particular student, including your son or daughter, has four or five instant-messaging sessions open as he or she does homework. They have their friends with them as they learn. In between chitchat about the latest alliances and factions among their social set, they are comparing answers, asking for help on tough questions, and complaining. Our children are doing their homework socially, even though they're being graded and tested as if they're doing their work in isolation booths. But in the digital order, their approach is appropriate: Memorizing facts is often now a skill more relevant to quiz shows than to life.

One thing is for sure: When our kids become teachers, they're not

going to be administering tests to students sitting in a neat grid of separated desks with the shades drawn.

Businesses have long suffered from a similar disconnect. Businesses want their employees to be as smart and well informed as possible, but most are structured to reward individuals for being smarter and better informed than others. For example, at the Central Intelligence Agency, intelligence analysts are promoted based on the reports they write about their area of expertise. While there is some informal collaboration, the report comes out under the name of a single expert. There is no record of the conversations that shaped it. Not only does this diminish the incentive for collaboration, it misses the opportunity to provide the expanded context that Wikipedia's discussion pages make available. The CIA is hardly unusual in its approach. It's the natural process if the output consists of printed reports. Printing requires documents to be declared to be finished at some point, which tends to squeeze the ambiguity out of them. And, of course, printed documents can't be easily linked, so they have to stand alone, stripped of the full breadth and depth of their sources. But some in the CIA have become aware that these limitations can now be overcome: Blogs are providing useful places for floating ideas before they're ready to be committed to paper, and Intellipedia, an internal site using the same software as Wikipedia, has five thousand articles of interest to the intelligence community.

One of the lessons of Wikipedia is that conversation improves expertise by exposing weaknesses, introducing new viewpoints, and pushing ideas into accessible form. These advantages are driving the increasing use of wikis—online pages anyone can edit—within business. The CIO of the investment bank Dresdner Kleinwort Wasserstein, J. P. Rangaswami, found that wikis reduced emails about projects by 75 percent and halved meeting times. Suzanne Stein of Nokia's Insight & Foresight says "group knowledge evolves" on wikis. Michelin China began using a wiki in 2001 to share project information within the team and among other employees. Within three years, the wiki had four hundred registered users and had grown to

sixteen hundred pages. Disney, SAP, and some major pharmaceutical companies are all using wikis.

If wikis get people on the same page, weblogs distribute conversation—and knowledge—across space and time. The mainstream media at first mistook blogs for self-published op-eds. If you looked at blogs individually, it's a fair comparison. With over 50 million known blogs (with 2.3 billion links), and the number increasing every minute, blogs represent the miscellaneousness of ideas and opinions in full flower. But the blogosphere taken as a whole has a different shape. Not only will you find every shading on just about any topic you can imagine, but blogs are in conversation with one another. So if you were interested in, say, exploring the topic of immigration, you could look it up in the *Britannica* or Wikipedia. Or you could go to a blog search engine such as Technorati, where you would find 623,933 blog posts that use that word and 38,075 that have tagged themselves with it. The links from each blog, and the commenters who respond to each blog, capture a global dialogue of people with different backgrounds and assumptions but a shared interest.

What you learn isn't prefiltered and approved, sitting on a shelf, waiting to be consumed. Some of the information is astonishingly wrong, sometimes maliciously. Some contains truths expressed so clumsily that they can be missed if your morning coffee is wearing off. The knowledge exists in the connections and in the gaps; it requires active engagement. Each person arrives through a stream of clicks that cannot be anticipated. As people communicate online, that conversation becomes part of a lively, significant, public digital knowledge—rather than chatting for one moment with a small group of friends and colleagues, every person potentially has access to a global audience. Taken together, that conversation also creates a mode of knowing we've never had before. Like subjectivity, it is rooted in individual standpoints and passions, which endows the bits with authenticity. But at the same time, these diverse viewpoints help us get past the biases of individuals, just as Wikipedia's negotiations move articles toward NPOV. There has always been a plenitude of personal

points of view in our world. Now, though, those POVs are talking with one another, and we can not only listen, we can participate.

For 2,500 years, we've been told that knowing is our species' destiny and its calling. Now we can see for ourselves that knowledge isn't in our heads: It is between us. It emerges from public and social thought and it stays there, because social knowing, like the global conversations that give rise to it, is never finished.