



Beyond Google

The great Internet search engine is still no match for the passion and expertise of a wise human being

FEW WEB SITES GENERATED AS MUCH MEDIA buzz in 2005 as Wikipedia, the collectively authored online encyclopedia. The attention is well deserved because there is no more compelling example of the Web's collaborative potential. What makes Wikipedia interesting is how it gets made: Ordinary people submit entries for different topics and then revise them over time. That is a truly radical break from the traditional closed-door, credentialed method of producing *Encyclopædia Britannica* and its ilk. While there have been substantive critiques of Wikipedia's accuracy and comprehensiveness, the idea that a free encyclopedia written entirely by volunteers could give the venerable Britannica a run for its money would have sounded prepos-

terous even 10 years ago. Now it is a fact.

But the Wikipedia miracle is a story of means, not ends. And I worry that we've lost sight of the ends by focusing so much on the idea of collective authorship. The end products created by all those swarming amateurs are encyclopedia entries, supplemented by hyperlinks—no different from what you would find on any of the traditional online encyclopedias, including *Britannica*. The information presented by Wikipedia can be more timely—hurricane Katrina had an entry before the storm swept through New Orleans—but the form that information takes is a throwback to dead-tree media.

Luckily, there are innovative alternatives to the encyclopedia model out there. They are not the highest profile sites online. But as vehicles for conveying complex information, they may well make up one of the most successful species in the entire Web ecosystem.

A few years ago, I began researching a project about cholera in the 19th century, and I stumbled across a Web site (www.ph.ucla.edu/epi/snow.html) devoted to the legendary doctor

and epidemiologist John Snow. When cholera spread through London's Soho district in 1854, Snow plotted a map of the deadly outbreak and found that everyone who fell ill had used water from a centrally placed public well that was contaminated by nearby sewers and cesspools. The discovery not only helped prevent the further spread of the disease but also constituted a major medical breakthrough—until then the scientific establishment had wrongly assumed that cholera was transmitted by air, not water. Snow's cartographic detective work made him a founding figure in several fields of research: epidemiology, public health, even information design.

The easiest way to describe the John Snow site is by starting with what it is not. It is not an encyclopedia entry; it is not a biography or a biographical article; it is not a collection of links. The traditional scholarly word that might be used to describe it is *archive*. The site is a potpourri of useful material: audio files telling the story of Snow's investigations; an exhaustive collection of Snow's original writing; a vast library of articles written about Snow's legacy; an-

notated maps of London, including Snow's famous map of the Soho outbreak; short biographies of the major figures in Snow's life; excerpts from books that mention him; dozens of photographs, including images of Snow and landmarks in London related to his life; modern-day scientific explanations of the cholera bacteria; and much more.

The Snow site is hosted by the department of epidemiology at UCLA's School of Public Health. It was the brainchild of a professor there named Ralph Frerichs, who began putting the site together in the late 1990s, mostly as a hobby. "When we talk about notable figures in any field, you have to bring in a little more information about who they are, their character," he says. "In public health, we didn't have that many notable individuals who had been brought out to the general public. I figured I could write an article about Snow, but it's hard to get wide circulation for an article that appears in a newspaper or magazine that comes and goes. The Web opened up the opportunity for having something out there for much longer."

Frerichs could have summarized some of the information on the site had he chosen to showcase the life and work of John Snow through an encyclopedia entry. Or he could have captured Snow's life in more of a narrative form had he chosen to write a traditional biography. But neither of those forms would have produced the same open-ended, exploratory wonder that the Web site conjures. "It's a little like a library," Frerichs says. "Someone can come there and they can just wander through it, in whatever direction they want to take."

Unlike a traditional library, the site is open for anyone to explore at any hour of the day or night. A typical visitor might find her way there via a Google search on "epidemiology" or "cholera" and then sample various versions of the outbreak map that Snow tinkered with over the years, or download a handful of PDF files that offer a comprehensive account of his public-health legacy. Someone interested in urban history might spend more time on the larger annotated map of 1859 London that Frerichs digitized. Or a

browser interested in Snow the person could spend an entire afternoon sifting through the biographical materials.

There's nothing technically innovative about Frerichs's archival tribute to Snow—no state-of-the-art user forums, no recommendation algorithms, no blogging whatsoever, as shocking as that might sound. Indeed, the site reminds me most of a great, unfinished study of 19th-century urbanism called *Passagenwerk*, an elaborate collection of photos, quotes, advertisements, clippings, and short

But few academics go to the trouble of creating public archives. It's true that most people who use the Internet for research end up bouncing from site to site with Google as their guide, collecting quotes and images and documents as they explore the wider Web. What's lost in the process is the individual, expert wisdom of intelligent curators, assembling the crucial materials that Google might overlook.

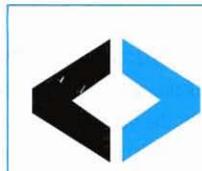
Frerichs designed the Snow site as a way of sharing the character and wis-

'An archive of connected documents can convey the riches of a subject more powerfully than a traditional linear book'

aphorisms compiled by the German cultural critic Walter Benjamin during the 1930s. Benjamin's premise was that an archive of connected documents could convey the riches of a subject more powerfully than a traditional linear book; it was an idea about 50 years ahead of its time. In some ways, the Snow site is also a throwback to the early days of multimedia when CD-ROMs—and not Web pages—were the primary vehicles of interactivity. Its structure brings to mind a number of early influential projects from the early 1990s: the multimedia CDs published by the Voyager Company, an annotated archive of the writings of Dante Gabriel Rossetti produced by the University of Virginia, and an early Web portrait of 19th-century British culture called the Victorian Web, created at Brown University.

What I find most surprising is that the Snow site is something of a rarity these days. Pretty much every university department on the planet has its own page on the Web, with course listings, faculty bios, and recent publications listed in endless detail.

dom of a great man, but what I sense more than anything as I move through the space is the animating presence of Frerichs himself. I trust him as a guide, and even more so after listening to him talk about the site with the sort of fondness someone might use to describe a garden he's been cultivating for years. "Oh, I've been ignoring the site a little recently because I'm working on a book," he says. "But when any new Snow item comes out—a new article, say—I'm usually pretty fast about getting it up. It's kind of therapeutic, actually. When I get tired of other things, it's always fun to go back to." ☒



A wiki is one of the most innovative new formats for Web sites: an open hypertext document that can be edited by any visitor. Some corporations use wikis to share information among their employees; academic institutions use them to explain complicated subjects. One disease-themed project is the Flu Wiki at www.fluwiki.com.