

The Human Touch

We are still in the doorway of the grand new edifice computer technology is building for us, and already some of us want to complain about the layout. We can see just a bit of what's on the other side of a facing wall and nothing of what's up the stairs. But we are uneasy. Yes, there's lots of light, but it's differently refracted. There's warmth, but its source is obscure. The comforts are commensurate, to say the least, with those of the home we left, but rather than embrace the gain, we dwell on the loss. The small machines do wonders, and we hold the results against them: the mere arcing of an arrow on a screen brings instant order to a random list of a thousand names; lost forever, the honest human labor of alphabetizing, and the excuse we had for doing nothing else till we finished the tedious sorting.

To be sure, there are valid complaints to be lodged against the technology and its abilities. The practice of compiling digital dossiers on Web surfers, for example, so that each one can be made the precisely targeted object of advertising campaigns, is pernicious. The much-trumpeted educational power of the Web gets mangled in its vast commercial maw. For the true believer, the Internet is not just an encyclopedia but the library of libraries. To doubters, its evolution is toward a cosmic yard sale, the Mall of the Universe, with a wave pool that could slam you into Saturn.

We should be wary of ceding to these capacious machines—so knowing and so dumb—too much of the education of children. Nothing but a keyboard and a screen divides kids from the new realm of information (you have only to watch their faces to judge the power of the enticement), but perhaps something should. Or rather someone should. The teacher mediates, and we do not yet know what

will be changed when a machine sits atop the desk a teacher once sat behind, when there is mechanical exposure without the check of human discernment.

For better or for worse—but on balance, I think, for better—formal education is linked to human faces, voices, personalities, and to their characteristics, insufferable and endearing. Sometimes the most satisfying experiences are had in the presence of the most ineffectual teachers. We called one of my college professors “the great god Sopor.” His classes were, for him and us, a race to oblivion, and, astonishingly, he sometimes won. And yet I learned from him to tease out the charms of Spenser, and I hear him reading Shakespeare still.

“We loved the doctrine for the teacher’s sake.” That’s Daniel Defoe, 300 years ago. “A teacher affects eternity; he can never tell where his influence stops.” That’s

Henry Adams. “A teacher should have maximal authority and minimal power.” That’s the psychiatrist Thomas Szasz, and his sober words suggest why we should be slow to hire computers to replace fallible humans. The machines’ power is maximal, but their content lacks authority.

Our metaphors for describing encounters with the technology are mostly old-fashioned and drawn from our dealings with the physical world, and with one another. There’s a charm to the transposition of experience—when we impute motive by speaking of a program that’s malicious and brings corruption to others, or seek inoculation against a virus, or shake our heads for an orphaned Web site, abandoned and unkempt. But who could ever see a computer into retirement with the emotion worked up for an admired teacher?

Perhaps we should be more sympathetic, for the imperious technology is not so



self-sufficient as it may seem. The very survival of electronic data will depend upon human intervention and human strategies. A three-year-old car or TV or camera or house (or child) is not necessarily yesterday's technology. But a three-year-old computer? Another matter entirely. The thing is a candidate for assisted-living arrangements. Hardware and software both mutate at a giddy pace and leave their forebears in the dust. But the new machines cannot read the old software. Theirs is not a cumulative literacy. We human beings forgot to teach computers to reckon the turn from the 20th century to the 21st, and their incapacity threatens catastrophe. We are faint with dread at the predictions, and half in love with the prospect of disaster. What if it all simply stopped for a bit, and we caught our breaths? Out of the question. A respite would risk everything.

The two principal strategies that have emerged for saving the digital data and keeping them in permanently archived order are "migration" and "emulation." Desperate times call for desperate measures, and the intransitive verb "migrate" has been called to transitive action. Henceforth, the technically adept will "migrate data." Migration is no longer just the movement of people or animals or plants but the conveyance of electronic data across computer systems so that the data can still be read when the machines on which they first were stored are obsolete. This migration is not a one-time phenomenon. It entails the kind of lingering responsibility assumed with parenthood. The data must be migrated repeatedly, to keep pace with technology's gallop. And emulation is no longer just the response children should have to saints but a process that will allow new machines to contain as a side capacity the skill to read old software by mimicking—impersonating?—machines of another time. This is challenging stuff, and it is by no means clear that institutions are up to the task, not because they lack the technical capacity but because they may not muster the human resolve.

The new technology was supposed to replace the book—an old but beloved technology—as a medium for storing information, and thereby spare us the burden of having to care for books. We now know that the nation's research libraries are full of books made brittle by the acid that manufacturers added to paper beginning in the mid-19th century, and continued to add till well past the midpoint of our own.

Books die for various reasons. They may have no life because they are not read, but that is suspended animation only, and from it they can be awakened. Acidic books, on the other hand, succumb not to indifference but to chemistry. They carry a bomb within that must inevitably ignite unless an external agent checks its detonation. How imposing their appearance on the shelves of our great libraries, and how fragile their true state. They are putting themselves inexorably beyond use, and what they know we shall forget—unless we intervene in their decline and save their contents in some other form. Which is what libraries here and abroad have been doing for a decade and more, through a coordinated effort to microfilm portions of the immense doomed store, to extract from the acid's soak the fading printed message.

For now, the sleek technology of the machine coexists with the quaint technology of the book. In our libraries, the staff shelves and dusts and mends millions of books, even as technicians lodge fiberoptic wires beneath every floor and behind every wall. Both technologies are living dangerously: the old carries its own ruin, the new is a prey to virus and neglect. Neither is beyond the need of a human touch. We sometimes forget that the technology has its source in human ingenuity and is meant to do us service. The cursor on the screen is guided by a human hand, and a human will in turn directs the hand. It's for us to insist that the technology adapt to our specifications and to our liking, to imagination's limit but to the mind's ease.

—James M. Morris