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Accidentally informed

It was a familiar routine. A new issue of your favorite scientific journal arrived and you picked it up to briefly glance through it. Everyone had their own technique. A few readers took the time to look through the issue cover-to-cover, skimming each page. Others, however, went immediately to the newsy front sections, to stay abreast of the latest: analysis provided by their colleagues, research policy news and changes in funding priorities. Alternatively, some headed straight for the classified advertisements to find career development opportunities. Students and postdocs often opened to the Table of Contents, cast their eyes to the approximate spot on the page that would hold any research titles in their interest area and, without pause, swiftly turned to that section, with time only to read that which was directly related to their own research.

But the days of literally thumbing through the latest issue appear to be numbered. Who in the lab reaches for the paper copy, and who, conversely, is doing a search of that issue on their computer the moment the online version is released? Graduate students these days no longer need to frequent the departmental library to keep up with recent breakthroughs. Thanks to institutional site licensing, the ready availability of online versions renders that trip down the hall obsolete. Computers in the lab that are hooked up to the institute's network usually have access to the full text of articles in hundreds of journals. Coupled with the popularity of such tools as PubMed, fewer scientists just embarking on their careers feel it necessary to peruse an actual print copy of the journal. Although their mentors may still be reading print copies, many newer scientists are not.

One of the most engaging aspects of online journals is the directness with which one can get to the information desired. If you view the Table of Contents of a journal online and see an article that you wish to read, you need click only once to have the article on your desktop. By the same token, if you have completed a computer search, either at the journal's site or on PubMed, you can go directly to the full text of your article of interest. No need track down that missing copy of the most recent issue. And no more fumbling through the journal, perhaps overshooting, then coming up short of, the exact page on which your chosen article begins. So for those interested in only the most direct route to what they momentarily perceive as urgent information, instant online access to journals has been a godsend. But is this latest example of streamlining, which fits in so well with the imagined profile of the successful investigator, a purely positive development? Now is the time to assess how an excessive drive for fast, direct information could actually detract from a scientist's development.

Computers have altered the way in which scientists can, and do, read journals. Everything comes with its price, and this new medium is no exception. Something has been given up in exchange for instantaneity and convenience: that something is the accidental acquisition of high quality information, or the "browsing effect". One example of this effect is that fortuitous sighting of a piece of scientific information while flipping the pages on the way to your intended destination. Who hasn't stopped to glance at an article that has nothing to do with your own research, only to realize upon closer examination that it is, indeed, pertinent to your experimental approach or perhaps to your future directions? Another example is the osmosis-like process whereby one subconsciously absorbs unrelated information that transforms itself into a piece of the scaffold from which creative scientists make those "intuitive" leaps leading to investigative breakthroughs. The benefit that comes from this unintended peripheral learning is not measurable and the long-term effect of its absence unpredictable. However, it may be endangered if we do nothing to prevent its disappearance.

One might argue that computers already provide the antidote, that is the multitude of links that comprise the bulk of results from almost any computerized search. However, we also know that most of these are irrelevant. The best print journals, on the other hand, save you time AND provide the browsing effect because they provide scientists with highly selective filters of a wide array of science. Any accidentally acquired information is bound to benefit. What we need is a translation of the browsing effect from paper to computer. If the task is too demanding for current computers, we will be forced to wait. But in the interim, we can't let our infatuation with new capabilities delude us. At the very least, an awareness of potential loss should inspire those "no-print" scientists to meander ever so slightly more than they do now. That wayward insight may seed your next grant application.