



Publishing in the age of the digital doctor

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KEY WORDS

Bioinformatics, molecular medicine, publication, medical education, medical students, teacher–learner relationship

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We are living in the middle of a revolution. By the end of this Century of Biology, the fields of medicine and communications will seem utterly unfamiliar to us and would probably seem surreal to our forebears. The practice of medicine and the development of bioinformatics will be inextricably entwined, changing everything, but affecting research dissemination and publication in particular.

At a recent forum on the future of health care held in Washington, DC, Harvard author and futurist Juan Enriquez, the founding director of the Life Sciences Project at Harvard Business School, related the creation of wealth to a unique invention of our species, the ability to code data and to preserve our stories through time. From hieroglyphics to Gutenberg, to the binary code of computing machines and the admixture of 0s and 1s with A, T, C, and G, each code revolutionized the world and required the development of new organizations and structures to manage the advances that accompanied its dissemination.

The most famous of all libraries in history—the ancient Library of Alexandria—held in its collection numerous texts in the field of medicine, including the canonical *Corpus Hippocraticum*. The ancient library proved the power of the written word as a shaper of collective memory, as the currency of ideas, and as the record of scientific inquiry. More than a millennium and a half later, the features of the new print era were data collection, dissemination, standardization, reorganization, preservation, and amplification, wrote Elizabeth Eisenstein¹. These were all necessary ingredients for Europe's scientific revolution.

We have lived in the current paradigm of scientific inquiry and publication for more than five hundred

years. Books and journals have had almost no rivals as vehicles of scientific progress and practical instruction. From Darwin's *On the Origin of Species* to Sir William Osler's *The Principles and Practice of Medicine* and the peer-reviewed periodical, this mode of knowledge dissemination has served us remarkably well. But the tradition of publication requires continuing support, and the next generation must be taught the special methods of the field.

There is a deep interconnection and interdependence between the revolution in medicine unleashed by genomics and the revolution in communications unleashed by digital technology; progress in one will engender further progress in the other and vice versa. Emerging communications technology was integral to the Human Genome Project in almost every phase. The ability of the Web to archive vast amounts of data, to enable retrieval and sharing and duplication of results, is not simply a matter of creating a bigger and faster Library of Alexandria. The Web is confronting—revolutionizing—old ways of academic work. Andrea Rinaldi has noted that “Modern technologies and web-based dissemination ... challenge the classical structure of the ‘standard’ paper—introduction, methods, results, and discussion—as web formats allow data and text to be separated and recombined by the reader, enriched through the use of electronic tagging and mark-up, and linked to external resources, with a general increase in interactivity”².

The best course of action has always been to take advantage of the powerful promise of each revolution in coding with a careful regard for helping to build the best of all possible futures. And this is what is underway at journals such as *Current Oncology* that have adopted the Open Access publishing model, thus seizing the vast opportunities of our digital era. This journal is now going back to the future again in an open information age by providing a forum for students, fellows, and their mentors. I am delighted that the first article published in this spirit is a case report and literature review from McGill University by Khashayar Esfahani, Phil Gold, Susan Wakil, René P. Michel, and Susan Solymoss. Their report chronicles

an atypical presentation of B-cell chronic lymphocytic leukemia that caused uncommon acute liver failure and death. It is based on observations made on the wards, recognized as worthy of dissemination and then crafted by teacher and student to inform the global community of life scientists. The ancient methods of the academy are thus harnessed for the support of modern digital doctors. It must be so, and I applaud both the authors and the editors for this contribution to the old and the new.

As the revolutions in medicine and communications continue, it will be the task of enlightened scholars to invent the future and make sense of it for the rest of us. *Current Oncology* is making an invaluable contribution to this effort and I encourage all readers to join in the collective digital recording of our time in medicine.

CONFLICT OF INTEREST DISCLOSURES

The author declares that no financial or other conflicts of interest exist with respect to this manuscript.

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