## The Shoulders of Giants

*The New Media Reader.* Edited by Noah Wardrip-Fruin and Nick Montfort. Cambridge, Mass.: MIT Press, 2003. 823 pages, CD-ROM. ISBN 0-262-23227-8.

Review by Axel Bruns

This book is a magnificent achievement; possibly the first of its kind, it sets a benchmark that will be difficult to surpass. *The New Media Reader* is a physically as well as intellectually impressive anthology of foundational texts in the field of what we now refer to as new media and new media arts, ranging from Jose Luis Borges's influential short story "The Garden of Forking Paths" and Vannevar Bush's often-cited "As We May Think" to a 1994 article by Tim Berners-Lee and others, introducing their recently invented World Wide Web. Along the way, we encounter articles, essays, and artworks by authors like Theodor Nelson, Deleuze and Guattari, Donna Haraway, Stuary Moulthrop, and many, many more – too many to do them justice individually in the space of a single review. (At over 800 pages, this reader approaches the size of a phonebook.)

The reader contains a comprehensive collection of the very earliest and most visionary of writings about new media, and many of its articles remain as fascinating and inspiring as they must have been in their time. In fact, they also show how many of the early promises and visions for new media are yet to be realised - reading these works, I believe, will enable many new media practitioners and teachers to step back a few paces from their day-to-day engagement with new media and to consider the bigger picture of what direction of development these media forms might (or should) take in the future. Although perhaps paradoxical at first glance, the editors' decision to include no articles published after 1994 helps rather than hinders such wider considerations, in fact - thus excluding any work related to the WWW boom of recent years keeps us from getting trapped in the present and enables us to see current developments as the continuation of technological and intellectual trajectories which were entered into already in the immediate post-war years, half a century ago. Too much current new media work celebrates the 'new-ness' of new media in an almost ritualistic manner, claiming always to map totally new ground and to break entirely with tradition; this ignores the wealth of both theoretical and practical work which has been accumulated in the field since the emergence of new media technologies.

To overcome the field's lack of awareness of its own history, the book presents its articles in a more or less chronological fashion, in four slightly overlapping segments ("The Complex, the Changing, and the Indeterminate", 1941-81; "Collective Media, Personal Media", 1964-80; "Design, Activity, and Action", 1980-86; and "Revolution, Resistance, and the Launch of the Web", 1986-94). Reading the anthology in this largely sequential order is its own reward, as we trace the genealogy of computing and computer-mediated publication and communication technologies and discourses (each article is also contextualised by brief introductory essays, which further help connect it with other works in this collection, as well as with pieces contained on the accompanying CD-ROM and in other sources). Other readers will want to access contents of the book more randomly, making other connections and following their own interests; to this end, the authors have included a kind of print-based hyperlink system which includes boxes of annotations in the margins of articles, pointing to the page numbers of related essays.

But whichever way one approaches this volume, it contains a treasure trove of articles that may inform creative practice or underpin research and teaching approaches. New media teachers will benefit particularly from this collection, as it enables them to replace well-worn third-hand copies of long out-of-print articles with updated and annotated versions. They will also be most interested in the CD-ROM which is included with the book, and contains some early programmes (such as early interactive computer games ranging from Adventure to Eliza to Karateka) as well as video footage of some of the major new media pioneers demonstrating their recent inventions – material which would be almost impossible to find elsewhere.



Douglas Engelbart demonstrates his inventions, the computer mouse and a complementary five-key keyboard (1968). Still image from a video contained on the New Media Reader CD-ROM.

Some readers may feel that the editors have played it safe by sticking with the usual suspects rather than attempting to unearth long-forgotten but potentially highly influential essays, but this would be a misunderstanding of the book's intentions – the aim here clearly is to present in one collection as many as possible of the established seminal texts of this field. While in collections such as this it is always possible to argue with the selection of one article over another, and to lament that this or that favourite piece of new media art is missing, editors Noah Wardrip-Fruin and Nick Montfort have performed a massive task in bringing together these works and combining them into a meaningful whole. Male Anglo-Saxon authors are clearly in the majority here, but that is a result of the (still existing) biases in new media theory and practice rather than a deliberate editorial choice; one would hope that any future anthologies documenting the next generations of new media work from 1994 onwards would show a significant improvement on this point.

Ultimately, however, it is impossible not to feel a sense of irony at the fact that a major collection of articles about new media such as this would have to be published in the decidedly *old* medium of print-on-paper. Even taking into account the efforts in layout and formatting which are designed to cross-link articles in this collection, the impression remains that this is a set of works crying out to be presented in a hypertextual, heavily interconnected format. That, to date, print remains the medium of choice both for reasons of reading comfort and publishing cost recovery is perhaps the most telling indication of how far we still have to go to realise (and make commercially viable) so many of the dreams of the first generations of new media theorists and visionaries. It does not invalidate their visions, however – *The New Media Reader* makes evident that the field is built on the shoulders of giants, and it remains for their present-day successors to honour and extend those visions.