reflection on the new. Nevertheless, the strengths of the book should not be forgotten – in particular, the stress on the contexts of young people’s new media use, the distinction between access and use, and the presentation of detailed empirical material of the kind that is often missing from new media studies.

References


Reviewed by JAN STEYAERT
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Here is the good news: if you decide to read up on the digital divide issue but find yourself limited for time, look no further – stick to this book. Its 220 pages (plus references) will bring you up-to-date and are the perfect cure against what can now be described as the simplistic analysis of the digital divide during the boom years of internet.

To launch his quest against this simplicity, Warschauer opens with three intriguing vignettes of bad practice of technology-based initiatives in the area of social inclusion. All three of them clearly convey the book’s key message: access is a multi-layered and complex issue, not to be reduced simply to having a computer with internet connection. To quote the author: ‘access to ICT for the promotion of social inclusion cannot rest on providing devices or conduits alone’ (p. 47). Yet, providing such ‘thin’ access has been the cornerstone of many digital divide policies throughout the world.
Warchauer argues extensively and convincingly that access involves several layers, including devices, conduits and literacy, upon which he later expands and groups under physical, digital, human and social resources (chapters 3 to 6). The many historical comparisons with earlier media innovations seem to allow the reader to skip pages, but bear in mind that it is just these apparent sidesteps that ground this analysis and enrich the author’s material.

Another noteworthy observation about Warchauer’s book is his balancing of a global and national perspective, drawing on data from the US as well as India, China and Egypt. While most studies either focus on the Western world (e.g. the US Government *Falling through the Net* series, see http://www.ntia.doc.gov/ntiahome/dn/) or on the huge gaps between North and South (e.g. see reports by the United Nations Development Program at http://www.undp.org/), this book integrates both levels smoothly.

Warchauer is not content with describing and analysing the digital divide. He also reflects on the policy options which are available to bridge the divide, including increasing the affordability of computers and telecommunications and provision of public internet access points, the so-called ‘community technology centres’. His coverage of computer-enhanced education is especially refreshing.

So far, the good news. Amongst all that, there is also the uneasy feeling of missed opportunity. For one, in his preface Warschauer informs us that most of this book was written in 2001. How can it be March 2003 before it has been made available through MIT Press? In a time where one senses both an urgency in tackling the digital divide, as well as communication happening at the speed of light, why is it that book publication is such an agonizingly slow process? It is not just that some of the quoted data are out of date (e.g. p. 27: 500 million people globally online, now estimated to be beyond 700 million) or missing some key publications (e.g. the US *Falling through the Net* series, see reference above), more importantly, some more recent developments remain uncovered in this book, such as the widespread introduction of unmetered access (cable, DSL) and emerging new platforms such as wireless connections. Equally, with increased diffusion, his remarks regarding the English language as dominating content are rapidly losing value.

This is another demonstration of how the old technology of printed press fails to meet the efficiency of modern media. Fortunately, Mark Warschauer combined the strength of both media and published full papers online long before this book came out (if you ‘Google’ his name, you will find them).

Another missed opportunity is that the book ceases analysis at access. Despite this concept gaining considerable depth here, there remains a gap between access and social inclusion. Inbetween the lines, the notion remains that once people have access (in all its dimensions), social inclusion will be achieved. If only it were that simple. There is a world of difference between getting someone connected and providing them with enriched educational settings, with full labour market opportunities or enlarged civic engagement. Having said
that, given the richness of this book, I can only encourage Warschauer to expand his horizons and I eagerly await his next writings.


Reviewed by JULIE DOYLE

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Donna Haraway’s *Cyborg Manifesto* (1991) paved the way for more complex interrogations of the intimate syntheses between bodies and technologies, attentive to how social realities of gender, race, sexuality and class inscribe these relations. Mackenzie’s study is equally concerned with disrupting essentialist distinctions between humans and technologies, yet his focus is upon a deconstruction of corporeal and technological matter, rather than how these are culturally inscribed. Engaging with Martin Heidegger and Bruno Latour, Mackenzie’s concept of transduction brings together more specifically the anti-essentialist theories of Judith Butler and Haraway, and the lesser-known writings of Gilbert Simondon. *Transductions* argues that technical ontology, like that of the body, can be read as series of iterated temporal and spatial processes. However, impressive in its attention to the ontological syntheses between bodies and technologies, this focus also constitutes its main limitation. Mackenzie’s deconstruction of matter lacks an engagement with the social inscription of bodies and technologies, particularly given his indebtedness to Butler and Haraway, whose understandings of embodiment are culturally and politically grounded.

*Transductions* is concerned with how human collectives are constituted – or *transduced* – through technical mediations, with bodies and time as chosen points of reference: bodies because they are represented as under attack or liberated by technology; and time, because it is perceived as being speeded up by technological development. By analysing individual artefacts, which include a pre-hominid hand tool, a 17th-century pendulum clock, a brick, and a genomic database, Mackenzie offers generalized assertions about the corporeal and temporal processes which characterize their technicity. Simondon’s analysis of the interactions between mould and clay which constitute the technicity of a brick, are represented by Mackenzie as evidence of a transductive process. One