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## Beyond Text: The Challenge of Multimedia Scholarly Discourse

by Bruce Ingraham

In recent years, much has been written about the application of contemporary information and communication technologies (ICT) to teaching and learning. Despite the fact that teaching and learning, at least in higher education, ultimately rest on scholarship, researchers have paid less attention to the implications of new technologies for the conduct of scholarly discourse. By scholarly discourse, I mean the exchange of ideas and arguments—traditionally published in peer-reviewed journals and monographs—through which the knowledge base of any discipline is advanced.

What are the implications of higher education's new information infrastructure for academic discourse? Consider the following lines of argument:

- Multimedia computing provides opportunities to change both the form and the means of dissemination of scholarly discourse, but in so doing it also problematizes that discourse (Ingraham [2000](#)).
- Despite the opportunities offered by multimedia, large bodies of continuous text remain and are likely to remain the primary form of scholarship (Ingraham and Bradburn 2003a).
- With the advent of portable, ubiquitous computing, electronic publication is likely to become the primary medium for disseminating not only educational multimedia, but also traditional text-mediated scholarly discourse (Ingraham and Bradburn [2003b](#); Harnad [2002](#); Thompson 2002).

A range of issues, too complex and numerous to be explored here in detail, influence these arguments; I reference fuller discussions of some issues throughout this article. My primary purpose in this essay is to call attention to the general concept of multimedia scholarship and, hopefully, to initiate some wider discussion of it. If the academic community is to engage fully with multimedia scholarship, the text orientation of scholarly discourse must move from paper to electronic mediation. As that shift takes place, it will become both possible to exploit the potential of multimedia within scholarly discourse and necessary to address any problems implicit therein.

### From Paper to Electronically Mediated Scholarship

Underlying my argument is the hypothesis that PCs, the Internet, and broadcast television *as we currently understand them* will all disappear in the next 10 years and be replaced with flat-screen, interactive, voice-controlled display systems capable of accessing any or all media. These systems will vary in size, depending on their location (e.g., domestic or office) and portability. A number of studies, accessible from [TechLearn](#), address the significant impact that these developing technologies will have on the future of educational computing.

In the immediately foreseeable future, the desktop PC is likely to disappear. Even where it may persist for office functions (e.g., word processing), it probably will consist of no more than a mouse, flat screen, and keyboard to which a palmtop computer or network can be connected. Similarly, it seems likely that televisions will become wall-mounted, flat-screen devices, and that television programming will become increasingly interactive. On-demand video will become readily available and, at least domestically, televisions, palmtop computers, and mobile phones will replace the desktop PC as the primary interface with an evolving, media-rich Internet.

Even more importantly for academic discourse, the same shift is likely to apply to paper-based media. Printed

material became the staple medium of academic discourse for many reasons, including its ease of production/replication, ease of use, and portability. Electronic media now offer these advantages as well. Of course, books will not disappear, but it is reasonable to suppose that the portable paper medium through which they are currently disseminated will be replaced by even more flexible and portable electronic media (Ingraham and Bradburn 2003a). For scholars, the ability to cut and paste quotations or directly link one electronic source to another is a significant advancement over paper texts.

Electronic alternatives are already available for many forms of popular print. Why produce/buy tons of newsprint or pulp fiction when you can download readable electronic versions of the same? Most major newspapers now have online services and some, like [mywashingtonpost.com](http://mywashingtonpost.com), allow users to determine the content of their news "paper" and then display it on a handheld or other device. Similarly, the dissemination of academic discourse via the Internet is increasing. Some people have even argued that paper-mediated publication actually interferes with the dissemination of scholarship. For example, the [Eprints](#) initiative (led by Stevan Harnad [[2002](#)], among others) seeks to overcome the delay between the acceptance and publication of scientific papers by making electronic preprints, or "Eprints," available to scholars. Similarly, Thompson (2002) notes that the rising cost of printing is leading academic publishers to turn away from publishing traditional research monographs and limit their lists to textbook offerings that they hope will sell in larger numbers. Clearly, text-based media are evolving in response to emerging digital technologies, provoking animated discussion among scholars about the future of text in a digital world (see the [text-e](#) and [Interdisciplines](#) Web sites for examples).

Electronic media's ease of production and replication is not in itself enough to transform the print medium. If electronic text is to replace printed text, it is absolutely essential that it be as comfortably usable and readable. Until recently, that similitude might have seemed unlikely. However, research suggests that the principle obstacles to reading text from screens are no longer technical, but result from ergonomic challenges and poor design (Ingraham and Bradburn 2003a, [2003b](#); Davidov 2002; List [2001](#)). With funding from [TechDis](#) (an organization that works to improve educational opportunities for disabled learners), my colleagues and I have developed a range of [guidelines](#) for the production of readable text.

The final key to establishing a bridge between paper and electronic academic text is the advent of wireless networking to portable devices, perhaps most importantly to tablet PCs. These devices can provide a platform that, relatively speaking, is as portable as a book and is capable of displaying in a reasonable size not only text, but material in any media. With such devices, it becomes possible to disengage text from the limitations of paper and to begin to exploit alternative media, both in conjunction with and instead of text.

### **Scholarly Rhetoric in Digital Media**

Of course, the fact that a technological opportunity exists does not necessarily mean that academia must exploit it. There is, however, one reasonably convincing argument as to why academics should do so. Scholars have an obligation to consider all available evidence on the object of their study, irrespective of the medium in which that evidence is contained.

The implications of this argument (outlined fully in Ingraham [2000](#)) are more complex than most realize. Emerging digital technologies offer two distinct advantages for the conduct of scholarly discourse. First, they provide the opportunity to include information in nonprint(able) formats within scholarly discourse. Using these technologies, a scholar might incorporate as evidence moving images, such as video extracts or animation sequences, that cannot be included in traditional print sources. Second, digital technologies provide the opportunity to conduct scholarly discourse in nonprint(able) formats. For example, a scholar might compose a video presentation of a scholarly argument that a printed text would not adequately represent.

In both cases, the conduct of the discourse would be problematized. Due to the long history of the print medium as the primary method of dissemination for academic work, scholarly argument is fundamentally rooted in print. Scholars communicate with well-developed and commonly understood conventions, and they

train their students to use the same. Such conventions do not currently exist for emerging electronic media. From a semiotic perspective, this may be viewed as a problem of rhetoric. The effectiveness of an academic argument rests partly on the quality of the evidence, partly on the robustness of the reasoning, and partly on the representational conventions through which the argument is mediated (i.e., its rhetoric).

Television news, for example, is both an object for scholarly examination (Scollon 1998) and a source of evidence for scholarly arguments; however, the evidence contained in a news broadcast is not a transparent record of facts. Its significance is mediated by a whole range of broadcast conventions that viewers must interpret if they want to fully comprehend the meaning and importance of the evidence (Scollon 1998). For example, the running order of a news broadcast reflects the editor's perception of the importance of individual stories. That is, the most important story comes first, and the last story is often a humorous one that can be deleted if there is an important, late-breaking event that merits coverage. Furthermore, a story's locus in the running order can change from one day to the next. Consequently, understanding that locus can contribute to the viewer's interpretation of its perceived significance at the time of broadcast. In a more subtle fashion, the use of things like eyewitnesses can significantly affect the interpretation of a piece of video evidence (Boltanski 1999; Chouliaraki 2004).

Such complexity is inherent to all media. Each medium has its own conventions, its own rhetorical systems, that contribute to the generation of its significance. The practitioners of time-based media (like radio, film, and television) clearly understand these conventions; more recently, the academic disciplines of film studies and media studies have grown as scholars seek to understand them. Scholars who want to include multimedia evidence in their discourse will need to learn to evaluate the impact of these diverse rhetorical systems in order to understand fully the significance of particular pieces of evidence in the context of wider arguments. Further, it is likely that these rhetorical systems will again be modified by their interaction with one another in complex multimedia objects. In short, using multimedia evidence within scholarly discourse requires academics to acquire new sets of skills in authoring and evaluation if they are to ensure the reliability of their evidence. It is essential to recognize that pieces of film or television evidence are human constructs; their meaning is created, and they must be approached through appropriately critical modes of analysis such as those employed within disciplines like film and media studies.

If we take the further step of producing scholarly discourse in media that are not printable, the rhetoric of the nonprint medium will become still more important, necessitating evolving models of discourse. Formal, peer-reviewed works of scholarship that are not primarily mediated through either electronic or physical print are rare, which is surprising given the wealth of educational multimedia material available and the growing number of electronically mediated journals. Hardy and Portelli's "I Can Almost See the Lights of Home—A Field Trip to Harlan County, Kentucky" (1999), an audio essay based on the rhetorical model of the radio documentary, is an interesting example. One of the authors describes it as "an experiment—an attempt to think in sound and to raise some questions about scholarship in the digital age" (Hardy 1999, paragraph 2).

One of these questions is the place of bibliographic documentation in nonprint scholarship. The audio essay is not without supplementary text; Hardy and Portelli provide a full transcription, a written history of the project, and some relevant literature citations. But overall, the essay is shallowly situated in the wider academic discourses (oral history, musicology) in which the authors participate. The same is true for most documentary film or television programs: Like scholarly lectures or articles, they are well researched and convincingly argued—but ironically, not well documented by scholarly standards. Documentaries commonly include interviews with experts, but these sources may be difficult to trace; the filmmakers rarely, if ever, provide the bibliographic references through which academics test the legitimacy of evidence or opinion and locate a particular argument in a wider area of scholarly debate. It is through these important mechanisms that the academic community ratifies new knowledge; without such references, the whole of the scholarly enterprise, as currently understood, might be at risk (Eco 2002).

This need not be the case. An *interactive* documentary with hyper-information structures could easily include the necessary scholarly documentation and so position the program within a wider area of discourse. The

British Broadcasting Corporation's (BBC) recent series "Walking with Beasts" is an example of what such an interactive, multimedia documentary might look like (Ingraham 2005). In this series, the BBC exploited a limited interactive digital broadcast technology. While the programs were actually on air, it was possible for viewers with digital television receivers (a significant portion of the United Kingdom population) to access a range of additional information in various media formats (e.g., print, graphics, and animations); this information was displayed on part of their television screens while the program continued in a separate window. There is a separate "[Walking with Beasts](#)" Web site that contains, among other things, most of the additional information that was available during the broadcasts; although there is no access to the video, readers can gain some sense of what the programs were like from the site. One can see that the level of scholarship in the series is secondary rather than tertiary education, but there is no reason why the basic model could not work at any level.

One limitation in the series is that the broadcast version lacks full video-on-demand control. Significantly, that means that viewers could not pause the television program while accessing the supplementary information. However, with a medium like CD-ROM or DVD (or broadcast video-on-demand, when that emerges), this limitation could be overcome. Regrettably, when the BBC released the series on DVD in 2002, it did not exploit that possibility. Instead, the company put the primary program on one disc and the additional information on another, thereby effectively breaking the link established during the broadcasts.

Nevertheless, the "Walking with Beasts" series is an example of how scholars could have access to a range of supporting information in various media contemporaneously with a broadcast program. Through such multimedia references, viewers could situate and verify the details of the specific program, just like the details of an academic journal article, against relevant scholarship. Electronically embedding a scholarly article (in whatever medium) in its wider discourse should enhance the academic process by making it easier for scholars to move seamlessly from one argument or piece of evidence to another.

## Conclusion

The BBC example is suggestive of the shape of things to come as broadcast media and the Internet become increasingly interdependent and readily available on wirelessly networked, handheld electronic devices capable of serving academia as "multimedia books." In my own university (and I am sure others), there is a growing demand to create multimedia-enhanced recordings of lectures. Intellectually, at least, the step from such a lecture to a fully academic, peer-reviewed version of it is no greater than the step from an ordinary lecture to a journal article.

However, as I hope this article helps to demonstrate, this step must be taken with care. Just as lectures are a live performance art with their own conventions, a full televisual performance of a lecture needs a quite different set of skills and, ultimately, the full skill set and resources of a production team. There is a reason for all the names at the end of every film and television program, and a fully featured piece of multimedia scholarship will be more like those media objects than like a traditional, written paper. Consequently, as scholars and tutors, we will need to understand and acquire at least some of those skills—and communicate them to our students if we want to successfully conduct academic discourse in multimedia.

Of course, one might argue that this will never be necessary because employing such production techniques would be unsustainably expensive. This argument seems needlessly pessimistic when one bears in mind that in fewer than 25 years, we have gone from an academic environment in which there were effectively no networked desktop PCs to one in which all scholars (at least in the developed world) are networked to one another. Academia has the skills and equipment to produce media-rich discourse; if educators and administrators perceive the need, they will find the money. However, we must not underestimate the other challenges of digital discourse, which literally may deconstruct our ways of thinking (Landow 1997) or undermine the filtering process through which scholarship has traditionally valorized learning (Eco 2002; Harnad 2002). If we are to take advantage of the potential of multimedia scholarship, the academic community must take care to understand and evaluate the varied media through which we work.



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