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Scholarly Rhetoric in Digital Media (or: Now that we have the technology, what do we do with it?)

Bruce Douglas Ingraham

Teaching Fellow, Centre for Lifelong Learning, University of Teesside, Middlesbrough, UK

Bruce.Ingraham@tees.ac.uk

Abstract: This article addresses the hypothesis that scholarly argument as it is presently pursued is mediated through print; but the advent of modern ICT offers alternative media to support scholarly publication. However, few academics have much expertise with these media. Accordingly, if this technology is to be fully exploited the academic community will need to acquire such expertise and this may have significant implications on the way in which scholarly argument is constructed. This hypothesis is addressed from a rhetorical perspective and consideration is given to what the impact of alternative publication media may be on the structure of scholarly argument.

Keywords: Rhetoric, hypertext, multimedia, scholarly discourse

1. Introduction

It is clear that the impact of contemporary information and communications technologies (ICTs) on Higher Education is and will be almost unimaginably profound. However, there is one key area of impact that has, as yet, I believe received too little consideration. That is the impact of this technology on the ways in which we construct scholarly argument¹. For most of the last 400 years scholarly argument has largely been published to the world via the medium of print. Scholarly argument is, of course, also published via other media, e.g. lectures, seminars and tutorials. However, since we largely valorise those arguments that are eventually published in print, I propose to restrict my remarks to a consideration of the impact of this technology on the construction of print(able) arguments.

1.1 The Hypothesis

The hypothesis that I want to offer up for consideration is that:

Scholarly argument as it is presently pursued is mediated through print. The academic community has developed considerable expertise in presenting argument in this medium. However, the advent of modern ICT offers alternative modes of

¹ Throughout this paper I have used the word ‘argument’ to denote a specific subset of some area of scholarship such as might be contained in a book or journal article. Similarly, I have used the word ‘discourse’ to denote the wider area of scholarship out of which a specific ‘argument’ emerges. This is in keeping with contemporary discourse analysis. This is in keeping with contemporary discourse theory. [A brief, but useful introduction to discourse theory can be found in the entry for discourse in *A Dictionary of Cultural and Literary Theory* (Payne, 1997).]

publication in which, as yet, few academics have much expertise. If we are to fully exploit this technology we will need to acquire this expertise and this *may* compel us to re-think the ways in which scholarly argument is constructed.

Underlying this hypothesis is, as will doubtless become apparent, a very real concern, of the post-modernist kind, about the legitimacy of current modes of scholarly argument. However, I do not really wish to enter into that debate here. Rather I want to address the problem from a somewhat more practical point of view by asking, first, what contemporary ICT has to offer to scholarly argument; and, then, by asking what, in practical terms, are the implications of that for scholarly argument as it presently pursued.

1.2 The Presentation of This Hypothesis

Since the manner in which scholarly argument is presented is the principal concern of this article, it may be wise to reflect briefly on how and why it is presented in the ways that it is. Originally this 'paper' was conceived of as a conventional print publication. Its primary purpose was, and is, to place its argument on the agenda of contemporary scholarly authors. However, various pressures and opportunities have led to this article being re-cast in three² forms: the initial print version; a simple hypertext suitable for internet access; and, I hope most interestingly, in the form of a Navihedron™.

The Print Version is organised in a conventional manner with footnotes, references, and bibliography; and is divided into a series of numbered sections [and sub-sections]. These are:

1. Introduction
2. Contemporary ICT
3. The Information Revolution
4. The Rhetoric of Scholarly Argument
5. Electronically Mediated Scholarly Argument
 - 5.1. The Rhetoric of Electronic Text
 - 5.2. The Rhetoric of Hypertext
 - 5.3. The Rhetorics of Multimedia
6. Rhetorical Models for non-print(able) Argument
7. How do you write a multimedia essay?

From a rhetorical perspective [see The Rhetoric of Scholarly Argument below] these divisions serve two purposes. First, they serve to articulate the *line of the argument*. Second, they provide a further means of *navigating* one's way around the article and the argument.

² Finally, since the challenge of multimedia rather than that of hypertext, lies at the heart of this article there should arguably be a fourth, multimedia, version; and perhaps one day there will be. However, for the moment, band-width limitations persuaded me to proceed with only three versions.

That is, they serve as a table of contents or index might in a larger work to allow the reader to move more easily from one section of the argument to another. Although the 'line of one's argument' is of great importance, it is equally important to remember that scholarly reading is rarely linear. Normally, academics at least begin by examining such things as subject heads and indices to get a sense of the overall argument [but see *The Rhetoric of Hypertext* below]. Similarly, the use of expressions like "see below" serve to offer alternative routes through the argument. Finally, the use of notes, references, bibliographies etc. serve to place this line of argument in the context of a wider discourse [again see *The Rhetoric of Hypertext* below].

The Hypertext Version of this article is conceived of essentially as an electronic publication of the printed article; and, as such, makes only limited use of the full potential of hypertext [see *The Rhetoric of Hypertext* below]. It differs from the printed version only in the following ways. The section headings appear as a hyper-linked table of contents to facilitate navigation. Although they are perhaps superfluous in a hypertext, I have retained the section numbering since this may be said to emphasize the 'line of reasoning' being pursued [see *The Rhetoric of Scholarly Argument* below]. Expressions such as 'see above' and 'see below' have been replaced with hyperlinks (indicated by blue text) to the relevant sections. Similarly notes and references are hyperlinked for ease of navigation. [Readers using browsers 4.0 or above will also find that merely pointing at the reference date will display the full reference, while clicking will take them to the bibliography.]

There is, however, one significant change between the print version and the hypertext. The hypertext includes a section on post-modernism that is not included in the printed text. Arguably, this section could have been included in the print version as an appendix. Indeed, from a post-modern perspective such an appendix might sensibly have been viewed as 'the tale that wags the dog'. However, such a strategy didn't seem to be entirely appropriate. On the one hand, it would be a rather unusual appendix to an otherwise conventional argument; and, on the other, these reflections perhaps more appropriately sit beside rather than follow on from the central argument.

The Navihedron™ version [<http://www.navihedron.com/nav/bruce/now>] is a much more radical departure from conventional scholarly presentation. Navihedrons™ are tools for composing hyper-information structures developed by Roy Stringer and his colleagues at Amaze Ltd. [<http://www.amaze.co.uk>]. More information, examples and the opportunity to experiment with Navihedra™ can be found at <http://www.navihedron.com/>. In brief, however, Navihedra™ are 3D models based on Platonic solids and relationships between pieces of information are articulated in terms of the spatial relationships represented by the vertices of the polyhedron. That is, units of information (of any kind, media, size or complexity) are attached to a specific vertex and bi-directionally hyperlinked to all the immediately adjacent vertices. The overall structure being determined by some perceived relevance reflected in proximity. Proximate vertices are understood to locate units of information/argument that are more closely related to one another than units of information that are not directly hyperlinked. Furthermore, this 3 dimensional arrangement can be rotated in space so that differing patterns of inter-relatedness can be viewed. Creating such an arrangement is much more difficult than it might appear and requires an author to consider the structure/presentation of even a simple argument like the one contained in this article with at least as much care as a more conventional presentation.

In the present Navihedron™ version the Navihedron™ appears at the left and takes on the navigation functions of the table of contents in the hypertext version and the section headings in the print version; but, significantly, presents the argument as a polyhedron of potential relationships rather than as a 'line'. However, I do not wish to claim to have been wholly successful in re-presenting the sections of this argument in an optimum pattern. In

order to facilitate comparison, I made a conscious decision to keep the Navihedron™ version as close to the other versions as possible. To this end I intended to retain the same headings as in the other versions but without the numbering in order to encourage alternative views of the argument. However, current Navihedra™ technology limits the number of characters attached to each node and it was necessary to slightly revise the section labels.

Similarly, as current Navihedra™ won't rotate in response to internal hyperlinks, readers must use Navihedron to navigate to internal references like 'See Hypertexts'. Similarly while pointing at reference dates displays the whole reference, readers must use the Navihedron to navigate to the bibliography. Note however that such references are no longer 'above' or 'below' since they may lie anywhere in the line of reasoning being pursued by the reader. However, apart from these two changes and some necessary revisions to make sub-sections less dependent on those immediately preceding or following, the text of the Navihedron™ version is identical to that of the simple hypertext version. In some respects this is probably a mistake since it tended to limit the reconsideration of the underlying complexity of the argument. Nonetheless, the Navihedron™ version of the argument is, I hope, at least suggestive of a genuinely alternative approach to structuring scholarly argument.

2. Contemporary Information and Communications Technology

Developments in Information and Communication Technologies would seem to offer the scholar three sorts of things that are likely to have an impact on the way scholarly argument is conducted. These are:

- alternative ways of presenting print-based arguments;
- easy access to information in formats other than print;
- ways of presenting information for scholarly consideration in formats other than print.

Arguably the second of these is the most obviously pressing for scholarship. As scholars we have an obligation to consider any information pertinent to our particular area of study irrespective of the medium in which it is recorded. However, until comparatively recently unless information was recorded in a printable format, it was not readily available on a scholars desk. For example, the mechanisms for accessing information stored in time-based media (audio, video, film recordings etc.) were, until the advent of audio and video cassette technology very limited, and even that technology has only been widely available for about 30 years. Still further some kinds of information, e.g. the 3D and other computer models currently used in scientific visualisation, were effectively unrecordable until very recently. However, with the development of networked multimedia personal computing easy access to such information has become much more possible. I do not wish to appear to be naïve about this access. Access to a film on a PC or a video screen is not the same thing as viewing it in the cinema anymore than a print of a painting is the same thing as the painting itself, but in all these cases these alternative representations serve at worst as acceptable *aide memoire* within scholarly argument. They are, in short, very much better than nothing. At first glance this may not seem to be all that important until we remind ourselves that the information era/society/revolution, call it what you will, is not actually all that new.

3. The Information Revolution

The 'information revolution' is more than 160 years old and takes two forms:

data/information capture/representation.

data/information dissemination/communication.

With respect to data capture it may perhaps be understood to begin with Daguerre in 1838³ and includes: the development of photography, sound recording (1877), moving pictures (1888), videotape recording (1956), and, more recently, computer imaging (including scientific visualisation) and VR. With respect to communications, it includes: telegraphy(1837), telephony (1876), wireless telegraphy (1896), radio (1920), TV (1926), digital computing (1946), and, since the 1980's, PCs, email, MPCs, LANs, WANs, MANs, Intranets and the Internet.

These last are of particular importance because they provide the key to easy access to any information that can be recorded in a digital format; and thus easy access to human discourse that is not conducted in print. It is this easy access that provides the novelty in the current phase of the information revolution. At the time of writing, these key elements are only 5 to 10 years old. The first MPC (Multimedia PC) standard was articulated in the early 1990's and, although the roots of the 'Web' go back nearly thirty years, easy access and wide-spread use of it only became available with the advent of Mosaic, Netscape etc. in the mid-1990's. Perhaps still more crucially, the sort of high bandwidth networks needed to complete the link between the scholar's desktop and the full range of available digital resources are only now beginning to become readily available.⁴

Nonetheless it is clear that within the immediately foreseeable future the technology needed to support easy, real-time access to any sort of digital information will be available to scholars⁵.

³ As a semiotician I am conscious that the inclusion of photography, or indeed, any still images in this argument is perhaps a little contentious. However, it seems reasonable to view the development of photography alongside telegraphy as the first in a series of technologies that lead to and are encompassed by what we now understand by the information revolution.

⁴ In the UK a number of separate metropolitan area networks serving various academic communities have been developed. These include ScotMan, NorMAN and others and it is reasonable to suppose that these will be upgraded and integrated via SuperJANET to form a very high bandwidth network in the service of British academia.

⁵ A useful example of this can be seen in the progress made in a joint BUFVC/JISC project on *Networking Moving Images for University Teaching and Research*, the interim results of which were published at a workshop held at Robinson College Cambridge, 17-18 December 1998.

"In January 1997, following a further meeting at the British Film Institute with members of JISC's Committee on Electronic Information, funding was agreed to support a joint pilot project which began work in January 1998. Since then the project has been working to deliver moving picture content to two pilot sites: the South Wales Metropolitan Area Network led by the University of Glamorgan and the University of Glasgow with the Performing Arts Data Service. More than thirty hours of moving pictures, relevant to study in Medicine, Social History and Film Studies, have been selected predominantly from the British Film Institute's National Film and Television Archive. These items have been encoded at the University of Manchester and then delivered to the pilot sites ready for integration with associated metadata. The sites have now developed their own file access systems and these are now ready for demonstrations online and for use in teaching trials."

[\[http://www.bufvc.ac.uk/networkconf.htm\]](http://www.bufvc.ac.uk/networkconf.htm).

With this access comes the opportunity to include within scholarly discourse both information in non-print(able) formats and non-print(able) discourse. However, this opportunity also problematises scholarly discourse, because scholarly argument is, I submit, fundamentally rooted in print.

In saying that scholarly argument is fundamentally rooted in print I simply mean that academics know how to prepare scholarly arguments for print. We have been conducting scholarly discourse through print for more than 400 years. We are trained at each stage of our studies, undergraduate and post-graduate in increasingly refined methods of using the medium and, I suggest, this effects how we do it. We may not wish to go to far down the route indicated by Marshal McLuhan's "the medium is the message"[1968], but there is clearly good reason to suppose that to some degree, at least, we think in ways that are suitable for printing.

However, the significant issue for this paper is that whatever the impact of academics' print-oriented skills on their argument, few academics possess such skills with respect to 'electronic' media. There is, of course, a distinguished history of educationalists who have exploited the full range of media -- radio, film, television, computing, etc. Of these perhaps the UK's Open University has been the most successful and harbours the greatest concentration of expertise; but the OU is only 30 years old and its experts represent only a tiny fraction of the total academic population.

Similarly, there is that body of academics whose field of study lies within one or another of these alternative media and who, it may be assumed, have some expertise in their use. Again, film, television and media studies are comparative newcomers to the academic scene and employ only a small number of academics. In short, while there is a growing body of academic expertise in the use of these media it is not, as yet, widespread and it needs to become more so if we are to exploit the opportunity offered by contemporary technology.

Another way of looking at this is to ask the question 'How do you write a multimedia essay?' or, perhaps more importantly, 'How do you mark one?' What are the conditions that need to be met that would allow the scholarly community to valorise arguments that include non-print(able) data and discourse and/or are themselves conducted in non-printable discourse? We mark other student work in terms of the degree to which it approximates to the work of scholars. We teach strategies for analysing data, constructing logical arguments that are clearly located in the wider discourse of the discipline and of representing these in print (or spoken) discourse. However, at this early stage of multimedia scholarship there are as yet no well-developed scholarly models. There is, as yet, little that can pass for good practice, because, frankly, there has been too little practice. Nonetheless, there are perhaps some avenues that may be explored which may at least suggest places in which to look for appropriate models against which to measure the quality of electronically mediated scholarship (see below).

4. The Rhetoric of Scholarly Argument

From a semiotic perspective the problem can be understood to be one of rhetoric. By rhetoric I mean

"The art of using language so as to persuade or influence others...."
The Oxford English Dictionary

In *Rethinking University Teaching* Diana Laurillard argued that "Teaching is essentially a rhetorical activity, seeking to persuade students to change the way they experience the world. It

has to create the environment that will enable students to learn the descriptions of the world devised by others.” [Laurillard, 1993, p. 28]

I would wish to extend this to include all academic discourse or certainly all academic argument. The purpose of any academic argument is to persuade others to accept the legitimacy of some viewpoint. Developing a persuasive argument is, of course, partly a matter of logic (that is some accepted code of reasonableness⁶) and partly of evidence; but it is also partly a matter of presenting one’s reasonable analysis of appropriate evidence through established print or other representational conventions. A quick glance at the immediately preceding paragraph will give some indication of what I mean.

In that paragraph I introduce the issue of rhetoric into the current argument by defining it and defending the definition by referring the reader to a highly respected reference source. By so doing I suggest to the reader that the definition is uncontentious (at least for present purposes) and widely accepted throughout the academic community; and, as such, a *reasonable* basis upon which to proceed. Most importantly for the present argument, however, that rhetorical move, that step in the argument, was done not by reason, but through the accepted conventions (in English) of placing a string of text in quotations marks and following it with another string in italic. That combination serves the purpose of notifying the reader without further explanation that the quoted words are not mine and that the source of the words is *The Oxford English Dictionary*. The fact that the source is widely regarded as reputable then completes the rhetorical move of persuading the reader that they don’t need to worry about proceeding with an argument that rests on a proposition that has been valorised by the wider academic community.

A similar move is made in the next sentence of that paragraph with the quotation from Diana Laurillard that extends the definition of rhetoric and applies it directly to the present context. Again simple print conventions are used to signal the idea that other reputable scholars share the views being expressed. In short, what is done is to place the current argument within a wider discourse. We all know that elements of that wider discourse may be contentious and to some the rhetorical force of the reference may be less than convincing. Indeed, in this case, the careful reader may wonder what sins of omission are signed by the three ellipses (...) that indicate that something has been left out of the original definition.⁷ However, it is not my objective to deconstruct my own argument. It is merely to reflect upon how print conventions allow us to make rhetorical moves without at every turn needing to defend in detail every element of our argument. Most scholarly argument is supported by a cloud of referentiality that embeds one argument in the wider discourse of the discipline(s) from which it emerges and upon which it impinges; and this cloud is often signaled by simple print-based conventions. It is this sort of thing that is meant by suggesting that scholars know how to construct an argument in print.

5. Electronically Mediated Scholarly Argument

However, when it comes to the preparation of arguments for electronic publication our lack of comparable levels of experience and shared conventions problematises or should problematise

⁶ According to the OED logic is “The branch of philosophy that treats of the forms of thinking in general, and more especially of inference and the scientific method.” and also “...the art of reasoning...”

⁷ In fact the words omitted were “... the body of rules to be observed by a speaker or writer in order that he may express himself with eloquence.” However, I leave the reader to muse over why I felt the rhetorical force of those words might not contribute advantageously to my overall argument.

our activities⁸; and, I submit, electronically mediated scholarly argument is problematised by three considerations:

- the rhetoric of electronic text
- the rhetoric of hypertext
- the rhetoric(s) of multimedia

5.1 The rhetoric of electronic text

I do not propose to say much about this issue here, because the other issues are still more problematic. However, it is important to recognize that printed text is not the same as electronic text. Although very similar to print, it is another of the 'new media' subsumed under the heading multimedia and scholars will need to become adept at understanding and exploiting the differences between electronic and printed text. Among the most obvious of these are things like font choice and page layout. For example, there has been considerable discussion about how much text should be displayed on a computer screen at any one time; and the tendency for electronic texts to be laid out in 'landscape' can be a significant problem for scholars wishing to create electronic access to archives of print documents that are, as general rule, laid out in 'portrait'. More generally, the problem is simply that electronic text has only been around for about 40 years and only really controllable for 15 or 20, while print has been with us for 500 years. There simply hasn't yet been time enough to develop the same level of expertise or accepted conventions for electronic text. As in many electronic texts, the electronic versions of this article use colour to indicate various things; but, as yet, these do not constitute a generally accepted strategy like the use of quotation marks, italic or the Harvard referencing system.

5.2 The rhetoric of hypertext

Hypertext, however, is clearly a radical departure from printed text. The ability to move seamlessly from one point in a document to another or to a point in another document clearly has enormous potential for scholarly study. At the very least it can provide 'fancy footnoting' by allowing direct access to the complete bibliographical citation and thus obviating the need for the reader to turn to the end of the article or the bottom of the page. Still more usefully, of course, hypertext can, in principle, not only provide the citation but also direct access to the document cited; and, if that document were itself a similarly annotated hypertext, to other documents included within a chain or network of related information. Such a body of documents can be more or less structured, but freedom of movement within such a corpus is clearly one of the virtues of hypertext.

Hypertext can be understood as "...a system of accessing textual data in which the data is understood to be stored in no particular sequence. The data must, of course, be stored in an orderly manner, but this order is not intended to influence the order in which it is accessed. Ultimately, of course, the data is accessed sequentially, but the sequence is determined by the

⁸ Locke Carter (<http://english.ttu.edu/carter/>), who describes himself as a "techno-rhetorician", is another writer who has addressed some of these issues from perspective of rhetoric. His Ph.D. dissertation 'Arguments in Hypertext' (1997) and another related study (Rickly 1995) are available from his website or at <http://labyrinth.daedalus.com/dissertations/>.

end user rather than by the original author. As such, hypertexts are usually understood to be very open data structures which the user is 'free' to explore at will." [Ingraham *et al*, 1994, pp107-8]

Of course, it was recognized early that this 'freedom' was itself problematic [e.g. Emery, 1993, p. 73] and a whole series of navigational strategies has evolved to overcome the problem of becoming 'lost in hyperspace'. These include variations in font colour, size or face to signal possible hypertextual links or various search algorithms to provide still more open linking. Similarly, a variety of menus, maps, and labeling systems has arisen to preserve one's orientation within a particular hyper-information environment. Significantly for the present argument, these emerging navigational strategies and tools are analogous to the use of italics, brackets, quotations marks and so forth referred to above. They are 'extra', or perhaps 'supra', textual rhetorical markers that can serve to advance an argument or at least place it within the wider discourse.

Within the preceding description of hypertext it is possible to see images of two different aspects of conventional scholarly activity. The well-structured hypertext can easily be a conventional scholarly article whose reading is enhanced by easy access to the sources referred to. It is analogous to the sort of situation that arises when scholars check references and follow-up leads that are suggested by the reading of a particular article -- just potentially quicker and easier. The less well structured hypertext, depending on its size, is perhaps more like a database or library of information available for scholarly exploration -- again facilitated by search algorithms or other electronic enhancements. For the moment the scale of such electronic resources means that they are perhaps more like that subset of information that one frequently finds on the scholar's desktop -- a group of texts, articles, books, manuscripts, what have you, through which the scholar moves, checking references and reflecting upon the relationships between the information under study. However, advances in networking technology mean that the scale of material available will rapidly exceed even that of our best libraries.

In any event, from both these perspectives, hypertext can simply be viewed as an electronically enhanced version of normal scholarly practice. It simply provides a means of locating the reader within that cloud of referentiality that represents the ongoing discourse of any discipline.⁹ However, in so doing hypertext also tends to make more visible the 'rhetorical' character of the moves made to provide the reader with a particular perspective on the discourse. Furthermore, to the degree that hypertext (by, for example, incorporating full-text citations) facilitates the reader's independent exploration of the discourse, it also tends to make more visible the many inter-dependent strands and possibilities of which the discourse is composed and the particular argument is thus revealed as precisely that, a particular argument -- one of a number of possible, competing and not necessarily mutually exclusive perspectives upon the problem in hand. As such, hypertext may tend to reveal levels of complexity in the discourse that traditional modes of argument may tend or are specifically designed to obscure; and,

⁹ Indeed, David Kolb in a paper presented at Hypertext 97 [Kolb, 1997] goes still further and argues that hypertext allows us to more accurately represent that ongoing debate between scholars that typifies all scholarly activity by allowing the reader to move smoothly and easily between the various interlocutors. Interestingly, although Kolb was unaware of it the time, the *Journal of Interactive Multimedia in Education* (JIME -- <http://www-jime.open.ac.uk>) had already begun to publish in a way that clearly instantiated the sort of discourse for which Kolb was implicitly calling. The issue of collaborative discourse has attracted still further discussion. A good introduction to the literature on this subject is available from Simon Shum's website at the Open University's Knowledge Media Institute (<http://kmi.open.ac.uk/sbs/>).

perhaps invites us to consider whether there may be alternative approaches to the structure of scholarly argument that may better reveal the full complexity of the discourse.¹⁰

In *Socrates in the Labyrinth* (1995) David Kolb tackled this issue by setting out to create a hypertext consideration of the potential role of hypertext in philosophical discourse. *Socrates in the Labyrinth* was created using a tool called *StorySpace*¹¹ which provides a range of tools for ‘mapping’, displaying and navigating one’s way through the complex of inter-relationships that makes up Kolb’s arguments. Regrettably the tools available in *Storyspace* all tend to represent the argument as a two dimensional network and this tends to make the structure of the argument needlessly obscure.¹² Be that as it may, in *Socrates in the Labyrinth* and more recently in *Hypertext as Subversive?* Kolb (2000) has nonetheless demonstrated that it is certainly possible to approach the development of a genuinely scholarly argument in a radically different way. Furthermore, with the advent of inexpensive software to support 3D modeling and low-end VR, tools are emerging, the NavihedronTM used in one version of this article, for example, that make modeling hypertexts in three (or more?) dimensions much easier.

However, whether or not one chooses to explore the question of whether hypertext offers a genuinely alternative structure for scholarly argument, it is clear that the electronic presentation of textual material (hypertext or otherwise) does impact on the print-oriented traditions that largely dominate scholarly discourse. On the one hand, we will need to reflect on issues of text design (font, layout etc.) for electronic media. On the other, hypertext may both ease (movement via indices, tables of contents, citations and notes becoming transparently easy) and disrupt the flow of the argument. Minimally, the route followed by the argument needs to be clearly sign-posted in order to avoid the risk of becoming lost in a text, especially as the capacity for full text citation increases. Of course, one may wish to argue that the appropriate response to this challenge to traditional academic discourse is to disregard it. Our current systems are clearly very effective and, as such, we might be ill advised to change them. Perhaps the scholarly community will only exploit the electronic dissemination of texts in the most minimal ways, but the potential advantages of easy access to information would seem to make that unlikely.¹³

5.3 The rhetoric(s) of multimedia

In any case the challenges thrown up by the advent of electronic text are still further problematised by the advent of multimedia. As mentioned above the challenge of multimedia is twofold. First it provides access to data that exists in formats that are not print(able) and second it makes possible scholarly discourse that is not print(able). That is, it both makes it possible to include within an electronic text material, like film or scientific models, that it would otherwise be impossible to include; and, at least in principle, it makes possible the creation of scholarly discourse in some medium other than print.

¹⁰ In *Hypertext 2.0*, George Landow (1997) explores these and related issues at length.

¹¹ *Storyspace* is available from Eastgate Systems (<http://www.eastgate.com/>). See also Bolter, J.D. *et al*, 1996.

¹² Recent comments about *Storyspace* in *Computers and Texts* (Grigar & Corwin, 1998) are more positive, which perhaps suggests that my concerns with *Socrates in the Labyrinth* have other origins.

¹³ Another perspective from which to view this is that suggested by Maddux et al (1997) who argue that computer use in education can be divided into two types of applications. Type I are those which simply make what we already do easier, while Type II allow us to do new things. Hypertext can be seen as an example of either a Type I or Type II application, but I suspect that its convenience as a Type I application will gradually lead to its wider uptake as Type II. (See also Harlow and LaMont Johnson, 1998).

I will return to this second challenge shortly, but with respect to the first, it is important to remember as contemporary ICT gives access to information contained in the full range of available media, that each of them, like print, has its own rhetoric. Media are not transparent conveyors of information. Each of them has developed or, as in the case of VR¹⁴ is developing their own particular ways of creating meaning and of persuading those who interact with them. These ‘rhetorics’ are usually well understood by practitioners within these disciplines and in some cases, e.g. film and television studies, also by scholars who have directed their study towards them. However, these ‘rhetorics’ are not necessarily well understood by other scholars who may wish to use the data represented in such media in the course of constructing arguments in some other discipline.¹⁵

An obvious case in point would be the use of television news in the context of some historical, political, or sociological discourse. Although each of these disciplines would be likely to reflect differently on evidence drawn from a news broadcast, there is no doubt that such broadcasts provide evidence that is as valid as many print-based sources, newspapers for example. However, that evidence must, in part, be understood through the rhetoric of the medium if an appropriately critical perspective is to be maintained by scholars using such evidence. For example, understanding the position of a story in the running order can contribute significantly to our understanding of how the story’s importance was perceived at the time. In short, just as 400 years of scholars have evolved critical strategies for dealing with print-based evidence, we must evolve similar strategies for non-printable sources.

Nor is it realistic to suppose that scholarly discourse can simply ignore such evidence. In some cases such evidence may be crucial to the resolution of a particular line of inquiry. For example, it would seem unthinkable that anyone should seek to write a history the Gulf war of the early 90s without reference to the archives of CNN or to the role played by CNN in shaping opinion concerning that conflict. Certainly if the latter issue is of significance to scholarly inquiry, then access to the archival sources would be essential. Still further one would require some strategy for analysing and interpreting those sources; and any such strategy could only evolve against a background of both historical and media studies.

Still more problematically the rhetoric of each medium in any mix of multimedia will also interact with and be modified by the rhetorics of the others. As such, multimedia will not only need to respect the rhetorics of the media it exploits -- whether as evidence or as the primary channel of the argument (see below) -- it will also have to evolve its own particular rhetoric(s) out of the various mixes of media that are exploited. In the simplest terms, this means asking questions about how the various media are deployed. Is video or graphics shown in a window? Is that window fixed in size and/or place? Does video sometimes/always take over the full screen? Is text displayed above, below, beside, on top of video or graphics? How are ‘hyper-moves’ signaled in text, graphics, video or to interactors who may have some sensory impairment, etc., etc., etc.? HCI literature deals at length with these and other related issues, but rarely if at all has it addressed these questions from the point of view of how such questions impact on the structure of scholarly argument.

14 A useful introduction to thinking in VR circles about these issues can be found in a paper presented by Clive Fencott at the 1999 Virtual Systems and Multimedia Conference in Dundee [<http://www-scm.tees.ac.uk/users/p.c.fencott/vsmm99>].

15 Pursuing a rather different line of argument, Collins et al argue that in the preparation of multimedia learning resources one needs to select the most appropriate media for any task and make a reasonably detailed analysis of the strengths and weakness, what they call “affordances and constraints” of a range of ‘new media’. [<http://www.apc.src.ncu.edu.tw/apc/allanmedia.htm>]

In those terms access to non-printable data first challenges us to understand that data on its own terms and to adopt an appropriately critical stance with respect to its rhetorical force. However, as indicated above, it also invites us to consider not only including such data in our arguments, but also adopting one or more of them as our primary channel of communication. It invites us to consider the creation of scholarly arguments within non-printable discourse. This invitation presents itself in two ways.

The first of these is simply because we can. Print became the medium of choice for scholars because it was the most efficient means of disseminating their work; and, in an electronic incarnation, it may, via the internet, remain so. However, other media, notably television, and perhaps especially television in an interactive digital incarnation, clearly is in competition. The other media and mixes of media that are now available to us may offer more efficient and effective channels for scholarly communication and just as it behooves scholars to consider any data available to us, it behooves us to explore these alternatives.

Second, there is a question to be addressed about whether text is the best medium in which to consider all other, and perhaps especially time-based, media. Clearly, we can and do discuss other media through the medium of text, but should we? It may be possible to represent these in text. We can include a still image drawn from a film or computer model or the script of a broadcast, but scripts and stills are not the same thing as the time-based media they represent and certainly lack the 'rhetorical force' of the original. Even in the case of scientific modeling a still image of a molecular model may well be 'less convincing', lack the rhetorical force, of an on-line model with which an investigator can interact.

The inclusion of fully functioning time-based media within an electronic text is certainly likely to enhance such discourse, but it also invites the question of why use printed text as the primary channel. After all, we give lectures and these are frequently enhanced with 'audio-visual aides' (multimedia). Such performances are recordable and therefore a television presentation of the material without necessarily any loss of scholarly rigour is at least imaginable. I don't mean to suggest that we can or should simply record lectures. Doing so largely fails to understand the rhetoric of both media (TV & lectures). I am merely pointing out that there are alternative models within contemporary scholarly practice in which printed text is not the primary channel of communication. Significantly, there are televisual models for conducting discourse about non-printable data objects -- e.g. film review programmes for film studies -- that may provide scholars with useful models (see below).

6. Rhetorical Models for non-printable discourse

It is these alternative models of discourse drawn from non-printable media that returns us to the question of "How to write a multimedia essay". Clearly one way is simply to interpolate multimedia data within an electronic text. This generates what might be described as argument by quotation or illustration and is much the same as including a photograph, graph or other still illustration in a printed text. That is, subject to treating that data and its rhetoric with appropriate rigour, one could then proceed with what would in essence remain a conventional print-based argument. In short, such scholarly arguments simply proceed as traditional texts with some enhancements from other media or advances in text manipulation.¹⁶

¹⁶ At the moment, much of what passes for electronically mediated scholarly argument is of this type. Even in the more ambitious electronic journals such as *JiME*, *The Journal of Interactive Media in Education* [<http://www-jime.open.ac.uk>] or *JoDI*, *The Journal of Digital Information* [<http://jodi.ecs.soton.ac.uk/>] most of the articles are simple hypertexts or illustrated hypertexts. One very interesting exception to this is Hardy &

However, there are models other than traditional scholarly discourse -- lectures, articles, monographs -- to which we might turn to better exploit the potential of contemporary ICT in pursuit of the best medium in and through which to conduct scholarly discourse. We could, for example, look at the ways in which meaning is created in visual media. At the radical end of the spectrum, this could offer what might be described as 'argument by montage'¹⁷. In such argument spatial and/or temporal juxtaposition between any images/texts/sounds drawn from any media might indicate reasonable relationships (associations) that would be difficult or even impossible to articulate in text (even illustrated text) alone. Montage can through the juxtaposition of images both simultaneously and sequentially engender meaning that can not be easily paraphrased.

In *Rethinking University Teaching* Diana Laurillard of the Open University argues precisely such a case for the value of educational television.

"In educational broadcasting, given my position that academic knowledge is essentially rhetoric anyway, the medium can legitimately fulfill its potential.... It hardly matters if a student fails to remember some constituent item within a sequence or programme; if the medium is being used as I have argued it should be, to persuade the viewer of a line of argument, or a way of seeing the world, then the important question is whether they understood the point being made." [Laurillard, 1993, p115]

Later in the book she extends this to include hypertext/multimedia and does so in a way which suggests that she similarly views the rhetorical force of multimedia arguments as, at least in part, emerging from the montage of images.

"The combination of a hypertext system with audio-visual media to give 'multimedia' brings together the best of both. It is easier to create image-argument synergy in a system that can handle both text and visuals, and since that feature of video referred explicitly to an *associative* link between image and argument -- the identification of one with the other -- it follows that this is precisely where the associative links offered by hypertext can be valuable." [Laurillard, 1993, p223]

Although filmic montage can and does include the simultaneous juxtaposition of images (e.g. sound and vision), it is essentially time-based and to that degree exercises some control over how the 'argument' unfolds. However, 3D objects like Roy Stringer's 'NavihedraTM' [see above] might provide a more architectural, and perhaps still more radical, means of displaying the relationships between the constituent elements of an argument. In the end, of course, an argument will still unfold in time, but such a 'solid' overview of the subject can perhaps support a more open exploration of the possibilities contained within the discourse; and such exploration may result in a more perspicacious view of the subject.

However, as elsewhere in this paper, recognizing the force of the alternative rhetorics available within the new media doesn't necessarily force us to adopt a radical de[re]construction of conventional academic practice. As already indicated, there are other more conventional models to which we may turn that may provide alternative routes to the 'writing' of multimedia essays.

Portelli's (1999) "aural essay" entitled "I Can Almost See the Lights of Home ~ A Field Trip to Harlan County, Kentucky" in the *Journal of Multimedia History* [<http://www.albany.edu/jmmh/>] in which sound is the primary medium of communication.

17 The writings of the Russian film director Sergei Eisenstein (1994) provide the locus classicus for the study of montage.

To develop but one example¹⁸, documentary television could provide a reasonably straightforward alternative to the creation of articles and monographs that could fully exploit the rhetoric of that medium without abandoning the rigours of traditional academic discourse.

Certainly there are examples of academically sound documentaries and yet few would ordinarily be regarded as such by the academic community. Few, if any, would, for example, count towards the RAE¹⁹. Why? In the case of some of the more popular -- 'prime time' -- documentaries, the BBC's *Horizon* or much of what is best on the Discovery channel, for example, the level of argument is perhaps too superficial. Even though the underlying scholarship may be sound, too much is compressed in too small a space. However, that is by no means always the case. Recently Twin Cities Public Television produced a documentary history of the American War of Independence entitled *Liberty* which certainly had the hallmarks of sound scholarship, offered a novel perspective on its subject and proceeded at a level of detail seemingly commensurate with scholarly rigour. A specialist American historian might disagree with that assertion, but, at the very minimum, this series conducts its discourse at a level at least appropriate to under-graduates.

From this we may at the very least conclude that the level of discourse in the medium of broadcast television doesn't necessarily have to be superficial. However, even such an admirable series does have a serious drawback from the perspective of scholarly argument. Broadcast television isn't good at locating the argument being presented clearly within the wider discourse. In short, there are no footnotes. However sound the argument, the one thing contemporary television documentaries never are is 'well-documented'.²⁰ To be sure Professor X or Y will be called upon to comment. Their presence lends rhetorical force to the argument in much the same way as a footnote, but one would normally be hard pressed to follow up such reference, access the relevant materials, or otherwise behave in a conventionally critical manner towards the argument.

This, however, is a problem intrinsic to the current state of non-interactive *broadcast* television²¹. It need not be an issue for a multimedia documentary. It is clearly possible to embed a conventional television documentary within a multimedia presentation that provides easy access to the full panoply of scholarly reference. In short, to use contemporary ICT to clearly situate a genuinely televisual presentation of a scholarly argument within that cloud of referentiality that constitutes the wider discourse and in so doing place fellow academics in a position to judge the value of that argument. However, in doing so they must learn to judge not only the force of the argument, but also the rhetorical force given to it by the medium or mix of media they encounter.

Before leaving this section, it would be naive not to call attention to the cost implications of the above argument. Whatever the scholarly or pedagogical importance of exploiting the new technologies, the cost of doing so will be enormous, possibly even prohibitive. However, the

18 Other examples might include talk shows or interviews, computer games or other 'virtual' worlds of discourse.

19 The RAE (Research Assessment Exercise) is one of the funding mechanisms for UK Higher Education. Through the RAE HEI's receive additional funding according to the quantity and quality of their research activities.

20 Indeed, in the case of *Liberty* even the date of production wasn't documented.

21 It is interesting to note the UK's Open University has largely abandoned broadcasting lecture material in favour of distributing a combination of video tapes and text that permits a greater degree of interaction.

question of whether we can afford to allow the new technologies to impinge on scholarly argument is really separate from what their impact can or should be; and, as such, lies outside the scope of this paper.

7. How, then, do you write a multimedia essay?

As I said at the outset, there are no easy answers. Approaching the question from the perspective of semiotics suggests that the issue is at least in part a matter of rhetoric. As such, we must, first, recognize that none of the media that we study is a transparent vehicle for its content. Each medium constructs its content in its own way and we must take that into consideration if we are to understand the evidence that we find therein. Second, we must recognize that mixing evidence from various media together will impact on the rhetorics of each and of our argument as a whole. Finally, we must ask what is the most suitable medium or mix of media in and through which to articulate our arguments. What are the "affordances and constraints" [Collins *et al*] of each varying medium or combination of media. In short, we must examine, modify and develop the models of discourse that are available to us with a view to devising the most convincing strategies for pursuing our arguments.

Finally, the question should perhaps be asked whether this is really important. The answer must be 'yes'. As scholars we can not ignore data or discourse that doesn't 'fit to print'. Once that is accepted I do not think we can, in good conscience, ignore the challenge to ask whether or not print is actually the best or only medium in which to conduct scholarly argument; and, still further, whether the reasoning strategies that have evolved in our print oriented scholarship are really as sound as they might be. However, as Diana Laurillard points out the academic community is intrinsically, and probably rightly, intellectually conservative; but

"The implementation of new technology methods cannot take place without the system around it adjusting to the intrusion of this new organism.... If academe is to preserve what is good in its traditions and also preserve its mission to develop knowledge and educate others, then the higher education system needs a more robustly adaptive mechanism than it has had to develop hitherto." [Laurillard, 1993, p223]

Furthermore, if academia doesn't take up the challenge of this technology in the interest of education, someone else might. Not all the pressures motivating the desire to widen access to education and promote lifelong learning have their roots in an unselfish desire to improve the lot of humankind.

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