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ARTICLE

A Future for Hypertext Fiction

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Abstract / Despite continued interest from the academy and creative writers, the question remains as to whether 'ordinary' readers, used to the conventions of print narratives, can enjoy hypertext fiction.

Since each hypertext fiction interface is more or less idiosyncratic, readers can be discouraged by unfriendly interface designs. Radically re-structured narrative forms can also cause confusion for readers. Critical works and empirical research from literary studies and interface design provide clues towards a better understanding of the effects of hypertext fiction upon readers, and knowledge from both fields can be productively merged in empirical studies of hypertext.

This article provides a methodological specification, and a summary of findings from my ongoing study of readers' responses to a range of hypertext fictions and their interfaces. Though there are barriers to reading pleasure, these can be overcome, and there is evidence that hypertext fiction can be as engaging and enjoyable as fiction in print.

Key Words / empirical research / hypertext / hypertext fiction / interactive narrative / interface / reader response

Introduction

Why We Should Continue to Discuss Hypertext Fiction with Enthusiasm

Hypertext fiction has been available since 1987 when Michael Joyce published *afternoon, a story*. *afternoon* is widely praised, and yet after 18 years, regarded as a classic of hypertext fiction, it is hardly heard of beyond academia.

Writing in *The New York Times Book Review*, Laura Miller noted, 'What's most remarkable about hyperfiction is that no one really wants to read it, not even out of idle curiosity' (Miller, 1998).

Andy Campbell, developer of the *Dreaming Methods* website, says,

> *I don't think that the general reader would particularly think of fiction as something they'd log onto the internet to experience, even with e-books and fiction-based web magazines in the picture. The*

> *main audience for fiction published on the web, or fiction that blends itself with multimedia, is other writers. (Campbell, 2003)*

The only commercial publishers of hypertext fiction, Eastgate Systems, report that their hypertext fictions 'sell in the low thousands – in other words, they sell about as well as literary fiction on paper' (Bernstein, 2004). Mainstream commercial success is not an important consideration for Eastgate, as Bernstein (2004) makes clear; but the low sales, and more significantly, the near invisibility of hypertext to the vast majority of readers, must make those of us who are interested in new-media storytelling wonder what is 'blocking' hypertext fiction from a wider audience.

Despite a huge amount of fanfare and discussion within the academic community, and a dynamic creative output from writers which continues to flourish, hypertext fiction appears to be of interest largely only to 'experts' – academics, journalists, and writers themselves. 'Ordinary' readers appear to be scarce. But why should this be, given the popularity of other multimedia products such as digital games, which, like hypertext fictions, present narrative and interactivity and are often delivered via computers?

Is it simply that hypertext fiction is difficult? The content of many hypertexts is not overtly 'highbrow'. For example, *These Waves of Girls* (2001) by Caitlin Fisher deals with a teenage world of friends, first love, and sexual exploration: one can imagine that *These Waves of Girls* might be a spark for commercially viable 'teen' hypertext fictions. Larry McCaffery, in awarding *These Waves of Girls* the 2001 Electronic Literature Organisation's fiction award, said that it is 'by turns, tender, terrifying, erotic, lyrical, witty, surprising' (McCaffery, 2001). But it remains 'stuck' in a sort of twilight zone, apparently known only to a few insiders, despite its easy availability on the web.

Cause for Optimism

My experience as a teacher and researcher of interactive narrative at Bournemouth University since 1999 has convinced me that hypertext fiction could be as stimulating, engaging and enjoyable as fiction in print, but also that many extant examples present significant problems which hamper reading pleasure. That position is supported by the literature, even among those who are hypertext advocates (Bolter, 2001; Douglas, 2000; Kendall and Réty, 2000; Landow, 1997; Murray 1997a, 1997b).

In classes on non-linear and new media narrative, my undergraduate and Masters students are asked to explore narrative possibilities in a range of media, including interactive forms such as games and hypertext. They have also been tasked with creating their own, original hypertext fiction, sometimes as adaptations of existing non-interactive stories.

Data collected informally through these classes have highlighted many of the pleasures, and problems, of hypertext. For example, my students have enjoyed the many variations of interface, the range of multimedia elements possible, and the freedom to interact with a new kind of narrative. But unsatisfying hyper-linking, seemingly random plot structures, and apparent lack of closure, problems which are also complained about in the literature (Birkerts, 1997; Miall, 1998, 1999; Miller, 1998), have unsettled these otherwise keen readers. In addition, the perceived success or failure of the interface to facilitate navigation and deliver the story has emerged as a highly influential factor in reading enjoyment; this aspect is not at all well covered in the literature.

My Masters students have produced many excellent pieces of hypertext fiction, and are fascinated by the challenges they face in creating stories that offer readers interactivity and emotional engagement. There is belief among these skilled multimedia students that the problems outlined above *can* be overcome by excellent writing, intriguing structuring via linking, and effective interface design.

The Need for Empirical Study

It is fairly easy to summarize the debate around the future of hypertext fiction because the discussion polarizes. Either hypertext narrative is the fulfilment of poststructural literary theory and practice (Landow, 1997), and is, apart from that recommendation, an exciting and dynamic new art form (Bolter, 2001; Coover, 1993; Douglas, 2000; Jackson, 1996; Kendall and Réty, 2000; Murray 1997a, 1997b) with an almost guaranteed fruitful future; or, hypertext fiction is a literary experiment doomed to failure because it confuses, and disrupts the reader's imaginative enjoyment (Barrett, 2000; Birkerts, 1997; Blanton, 1996; Miall, 1999; Miall and Dobson, 2001; Selig, 2000).

There has been excited belief in hypertext, for example Robert Coover's view that 'the potential of this fascinating new reading and writing medium has scarcely been glimpsed' (Coover, 1993). There is also quite vehement dismissal of its future as a story-telling form: 'reading can co-exist, theoretically, with digital storytelling, but the two cannot be interbred to any productive end' (Birkerts, 1997).

However, within the literature, the reactions of 'ordinary' readers (as opposed to academics, or journalists) to hypertext fiction are significantly under-represented. On both sides of the debate there is a call for empirical study (Gee, 2001; Kendall, 1998; Livingstone, 2004; Miall, 2003; Nielsen, 1990; Smart et al., 2000). For example, Gee (2001: 4) points out that 'little empirical research has been done on how users interact with a hypertext narrative'. Miall says, 'the surprise for me, contemplating the critical literature on hyperfiction, is how few systematic accounts have been provided of the experience of reading it' (Miall, 2003).

The technology of hypertext is allowing a mushrooming of narrative styles, structures and delivery platforms (interfaces) that would confound the keenest reader, and we therefore need to develop 'more open models of reading' (Wenz, 1999: 7) which take into consideration reading alongside its electronic counterpart, interactivity. It is my contention that systematic investigation of reader response *is* now the only way to get at some of the deeper issues.

We need to move beyond the critical, often emotional debates which, interesting and stimulating though they are, have now run into a stalemate of opinion. I adopt a reader-response approach, referring to Fish (1970) and Iser (1976), not only in my argument (Section 2) but also to the empirical study, which I outline in Section 3 of this article. I start from the belief, held by critics on both sides of the debate (Kendall, 1998; Livingstone, 2004; Miall, 2000, 2003; Miall and Dobson, 2001; Miall and Kuiken, 1996) that readers can tell us more of what we need to know.

Hypertext fiction is an important development in the evolution of narrative (Bolter, 2001; Douglas, 2000; Jackson, 1996; Kendall and Réty, 2000; Landow, 1997; Murray, 1997a, 1997b), but it is struggling to find an audience because of significant structural and operational barriers. I argue that hypertext fiction has a potentially fruitful future,

and can attract a larger, more mainstream audience than it currently does, *if* writers take notice of their readers' responses. I therefore include, as part of the following argument for hypertext fiction's future, summaries of findings from my empirical study of 32 reader-participants to date, and a specification of my empirical work in progress.

Potential, and Problems to be Overcome

The Digital Book

Murray (1997b) believes that digital media offer an exciting new environment in which to create and experience narrative. Bolter (2001) argues that the advent of digital technology has allowed writing itself to be 'remediated' – interactivity, multi-layering, collaboration, non-linear sequencing, and multimedia elements such as animation and sound, are all part of storytelling in the new writing space. 'Remediation', in Bolter's terms, means that the book is referred to, modified, and even improved. But hypertext doubters, as Bolter himself acknowledges, worry about this rapid change to the familiar medium:

> *Those who tell us that the computer will never replace the printed book point to the physical advantages: the book is portable, inexpensive, and easy to read, whereas the computer is hard to carry and expensive and needs a source of electricity. The computer screen is not as comfortable a reading surface as the page. . . . And you cannot read your computer screen in bed. (Bolter, 2001: 8)*

If we wish to approach an understanding of readers' reactions to a new storytelling form and the medium which delivers it, we cannot ignore these objections, even though Bolter and other hypertext advocates (Landow, 1997) largely do. Bolter believes that readers will be so keen on the fluidity of expression and the verbal and visual dynamism of hypertext that they will 'put up with some inconveniences to use it' (Bolter, 2001: 9). He cannot provide evidence, however, and my study participants all commented that reading narrative at a computer is inconvenient at best, off-putting at worst: they also noted that they do initially come to reading a story at a screen with 'book' in mind, and that this preconception influences their reading. Interestingly, they are prepared to spend much longer at the screen when information-seeking on the World Wide Web. It seems that it is not the perceived or actual inconvenience of the screen that interrupts reading, but something to do with the conception of 'book' that the reader brings to the experience.

An aspect of 'remediation' we must therefore carefully consider is that the digital book no longer looks or behaves quite like a book. When one opens a hypertext fiction one is confronted with something not seen in the world of books, films or plays: choice, and a unique, potentially baffling, interface. Murray, despite being an enthusiast for all forms of interactive narratives, argues that we do need a 'coherent set of conventions for signalling interactors' (Murray, 1997b: 157) if we are not to overwhelm them with choice. Douglas, a writer of hypertext fiction, as well as one of its key theorists, warns that hypertext is a 'medium lacking stable conventions to curb its creators and guide its consumers' (Douglas, 2000: 125). Petersen (1998) notes that 'the lack of conventions also prevents users from decoding perceptual cues as in well-known genres'. A very strong

theme from participants in my study to date has been that, in their efforts to create a new form of writing, hypertext authors are breaking too many conventions at once.

However, Campbell (2003) believes that although the book *is* still the main point of reference for fiction in the minds of most readers, hypertext fiction must be much more than print on a screen if it is to find its own audience:

> *Writing designed to be read on-screen should work better on-screen than it does in any other medium . . . On-screen text works best when it's easy to read, preferably displayed in short bursts, animated in bite-sized chunks, intriguingly interactive in some way, or quite simply doing something on-screen that provokes a reaction in the mind of the viewer/reader that could not have been achieved through more traditional methods. (Campbell, 2003)*

So, there is a conflict in hypertext fiction – which writers and designers need to acknowledge and deal with – between familiarity and newness. My participant readers all came to the hypertext fiction with a preconception of 'book', largely because of the label 'hypertext fiction', but soon shifted into whichever alternative paradigm they were most familiar with, and this is where Campbell's argument seems powerful. For example, on an introductory reading of Joyce's *afternoon, a story*, a former website developer commented that book-like features were not so much the issue for him as were website conventions for interaction. Thus, he was satisfied, or not, depending on whether the hypertext operated as a website would, with menus, clear links, route maps and so on. Another participant, keen on console and PC games, was looking for game-like elements, such as plentiful hotspots and clear 'rewards' for exploring the reading environment, once it became obvious that *afternoon* did not 'work' like any book he had seen before.

There is a dilemma and a challenge for writers: the 'book'; must be acknowledged, because readers expecting to 'read' a piece of fiction will look for familiar signposts such as 'page' numbers, or 'chapter' headings; but hypertext fiction cannot behave like fiction in print, and the screen itself triggers behaviours in readers that themselves are not 'book-like'. Even though readers may approach the piece as if it were a book, they soon shift their behaviour, because to continue to think 'book' is quickly confusing and frustrating. This means that we must pay close attention to the interface, because it is clearly a major influence upon readers' responses to the digital book and hypertext fiction.

The Interface

Something that is very noticeable and engaging at *Dreaming Methods* is the visual quality of the pieces on show. The interface is clearly an aspect into which Campbell and his collaborators put huge effort. The key approach is to combine the familiar with experimental features, for example by having an animated book on screen that delivers the multimedia and hyperlinking elements, as in *Inside: A Journal of Dreams* (http://www.dreamingmethods.com/inside/). However, the interface is an aspect that receives little attention in the literature around hypertext fiction: this is a weakness in the current state of the debate, and a weakness of many examples of the art itself.

In their wide-ranging study of the history of reading, Cavallo and Chartier (1997) contend that 'no text exists outside the physical support that offers it for reading' (p. 5). This thought connects strongly with the views of Bolter who says that,

> *at various periods, Western cultures have chosen to embody writing in various technological forms, and these choices have in turn affected the organisation, style, and genres of writing and our expectations as authors and as readers. (2001: 77)*

Murray argues that technology, specifically 'the dizzying physics of the twentieth century' (Murray, 1997b: 34) drives development in narrative forms. Cavallo and Chartier would agree that the development of digital technology has changed the reader's role as surely as it has the author's:

> *The move from the codex to the screen is just as great a change as the shift from the roll to the codex. It establishes new ways of reading that we cannot yet completely describe, but that will quite surely bring new and unprecedented reading practices. (1997: 29)*

Karin Wenz, in a study of hypertext reading, says 'the physical actions of a user – clicking around in a hypertext, for example – cannot simply be compared to turning the pages of a book while reading because the impact of the computer's materiality may not be neglected' (Wenz, 1999). And yet, when hypertext fiction is discussed, we hear little about interface design and effectiveness.

Wright and Monk (1990: 55) argue that 'the design of a good interface is difficult. It involves getting feedback from users early in the design process and iterating through several versions of the system'. This is an established part of design practice in the world of software design, but it is not a process we associate with the creation of hypertext fiction. Two notable hypertext developers, Mark Bernstein (1998, 1999) and Robert Kendall (1998, 1999; Kendall and Réty, 2000) have written about the potential and problems of hypertext navigation, but even they talk very little about the functionality and visual appeal of the interface.

Gee (2001: 5) argues that 'while hypertext narrative is allowed to challenge the concepts of linear reading and definite endings, it should not challenge traditional document design values if it is to be accepted by readers'. However, when we look at examples of hypertext fiction currently available, we see not only a challenge to *traditional* document design, but also often a disregard of *digital* document design conventions. 'Essential' interface elements such as back-buttons, menus, maps, hierarchies, and visual signposting (Nielsen, 1990; Studio 7.5, 2002) are not apparent, or if they are, they are visually obscure, inconsistent, or overcomplicated. For instance, participants who read Fisher's *These Waves of Girls* all commented that the interface design was messy and confusing, with cluttered layout, awkward navigation, and nested frames creating very distracting pages. Participants who read Megan Heyward's *Of Day, Of Night* (2004) noted that the author hides the 'home' button, to no apparent purpose; two readers in that particular group actually never found the home button and thus missed a large portion of the piece. Readers who commented on *L0ve0ne* by Judy Molloy (1994) noted that the links were indicated in a way they had not seen on any other web-based material, and so were not even recognized as links at first. Problems such as these can seem to the hypertext enthusiast as minor irritations, but to the unconvinced or the inexperienced, they act as blocks to enjoyment, and ultimately can stop reading altogether. It could be argued that writers are, to some extent, constrained by the software they are using, but there is no modern web or multimedia software platform that does not allow all the fundamentals of navigation and orientation to be included.

Disorientation

A comment made by *every* participant in my study to date was that they very quickly lose orientation, both in the story and in the 'book'/site, and even though many are quite happy to explore a hypertext, they all still want to know where they are. This disorientation is the result of too much linking potential (Landow, 1997), poorly structured linking (Kendall, 1999), and poorly designed interfaces (Nielsen, 1990), resulting in a reader becoming 'lost in space', as Conklin (1987: 38) puts it. Holland (1975: 14) notes that 'all readers need to "make sense" of a text to some extent. Otherwise they complain of obscurity and express varying degrees of discomfort and anxiety'. Given all the expectations readers will bring for cause and effect relationships, character development, excitement, anticipation, and meaningful conclusion, narrative disorientation could seriously threaten or even destroy the reading experience altogether. As Douglas admits: with all the choice offered and demanded by the interface, the reader risks 'being overwhelmed by cognitive overload – and of finding the narrative largely incomprehensible' (2000: 140).

To ease this problem, Kendall (1999), Douglas (2000), and Murray (1997b) all argue for the 'return' of the author: Douglas comments that Barthes (1968) was maybe a bit premature in his decree that the author is dead, because actually the author must be firmly in control of the experience of traversing a hypertext. The reader expects each new segment of text to add purposefully to what has already been read: this reminds us of Brooks' theories of narrative desire and the innate need to feel that narrative makes sense out of disorder (Brooks, 1984). Understanding that, Kendall and Réty say 'hypertext readers generally stop reading when they feel that their knowledge of the work is no longer growing significantly' (Kendall and Réty, 2000: 167). The new kind of author required in hypertext must be very aware that with reader choice comes (the potential for) great confusion.

Again, we must return to the interface for help here: the signposting that a book gives to a reader needs to be replicated and/or refashioned for the screen, so that disorientation only occurs when the writer wants it to occur, as part of the narrative design. *The Mobius Case* (Van Dijk, 2005), a postgraduate project in my Narrative and New Media course at Bournemouth University's Media School, offers the reader/user a very simple but effective orientation tool: an always-on-screen narrative timeline which updates itself visually as the reader 'completes' sections of the story. Thus, although the reader can explore 'chapters' by clicking hotspots on the unfolding 'pages', he or she always knows where he is, where he has already been and what is left. This unpublished piece shows that interactivity can combine well with narrative and spacial orientation, and it will be the subject of my next sequence of research (see Section 3 below for research method).

Closure

Mainstream audiences expect narratives to run along 'orderly' lines (Brooks, 1984) towards the ending that provides catharsis and satisfaction. It is the ending and the closure it brings that makes sense of all that has gone before, in Brooks' view.

Even if modernist and postmodernist literature view plot and closure with distrust, Brooks argues that these narrative foundations must still remain, albeit in forms that may

challenge readers' expectations, in order to carry reading forward (Brooks, 1984: 314–15). Of hypertext fiction, Kendall and Réty say that 'successfully sustaining growth is ultimately important for achieving closure in a reading' (2000: 167).

However, some hypertext advocates argue that closure may not be *the* point of narrative reading. There may be an alternative pleasure (Barthes, 1973; Douglas, 2000; Jackson, 1998), that of exploring the weave of thoughts and associations created by the author's hyper/textual network. Michael Joyce says at the start of *afternoon* that 'closure, as in any fiction, is a suspect quality' (Joyce, 1987). He adds that 'when the story no longer progresses, or when it cycles, or when you tire of the paths, the experience of reading it ends' (Joyce, 1987). Closure, in the sense that most readers of fiction would understand it, does not really exist in Joyce's conception of narrative.

Shelley Jackson calls herself the 'stitch bitch' (Jackson, 1996), a kind of anarchic literary seamstress who defies plot, motivated by associations, dismantling the linear in narrative. Hypertext, she says 'is always at its end and always at its beginning', 'hypertext doesn't know where it's going' and 'it isn't clear just where it ends' (Jackson, 1996). It sounds poetic and dreamily attractive, but can it deliver the satisfaction of closure that most readers want? Jackson concludes her thesis in 'Stitch Bitch' by saying

> *I see no reason why hypertext can't serve up an experience of satisfying closure not drastically different from that of reading a long and complicated novel, though it will do it differently. But I'm not sure closure is what we should be working toward, any more than a life well lived is one that hurtles without interruption toward a resounding death. (Jackson, 1996)*

If it is in our very being to fashion narrative sequence out of life's chaos, as Freud via Brooks (1984) would have it, then Jackson's version of narrative literature is likely to be at best challenging to readers used to the clear end-points of books and films, and at worst simply a turn-off.

Douglas (1994, 2000) is very aware of this expectation of narrative closure and has written at length on the topic. In relation to closure in hypertext fiction, Douglas argues that it is actually the appreciation of the significance of events *within the reader* that gives closure. Closure might therefore be reached before the narrative has 'ended', whatever we mean by ending in the context of hypertext. But again, does the practice bear out the theory?

My participants, reporting on *afternoon*, *These Waves of Girls*, and *L0ve0ne* commented that they could not find what they considered to be an ending, or they gave up before they found it. The most emphatic expressions of displeasure came from those who craved but could not find an ending, and the clear indication is that hypertext authors need to consider this. If the author makes it apparent where that ending is, or that it has been reached, then closure of the conventional sort will be possible. Closure of the kind Douglas describes will still be available if the hyperlinking system allows freedom of movement through the piece, but the strong reaction from my participants is that without some *author-designed* endplace, the whole narrative feels as if it is unfinished.

The piece most clearly identified as satisfying was *The Virtual Disappearance of Miriam* (Bedford and Campbell, 2000) a short, very visual piece on the *Dreaming Methods* site: here, *three* endings are offered, which the reader can choose, and participants in this group all enjoyed the experience of following the trail of Miriam and discovering

what might or might not have happened to her bemused boyfriend. Narrative expectations were satisfied along with a pleasurable reading/interacting experience.

There is no inherent law of hypertext that says that endings must be impossible to find, or non-existent: hypertext fiction can have distinct endplaces and provide a more conventional kind of closure, if writers choose to provide it.

Immersion and Flow: The Keys to Hypertext Pleasure?

If hypertext fiction can involve a ludic (playful, reading for pleasure) reader (Nell, 1988) to the point of becoming 'lost in a book', then it surely has a future beyond its current status as a highly creative, artistic curiosity. There is no intention here to suggest that artistic experimentation is not a valuable part of literary endeavour, or that narratives with indeterminate endings have no place; however, if hypertext writers cannot remove the barriers for many readers of disorientation, cognitive overload, indeterminate beginnings and endings, and lack of closure, then it may be simply, as Campbell (2003) suggests, that 'hypertext fiction, clicking on links, etc., . . . is boring to most people'.

However, there are strong and systematic arguments for hypertext's potential ability to absorb. Referring to Nell's (1988) concepts of highly absorbed or 'trance-like' reading to define 'immersion', and using schema theory, along the same lines as Iser (1976), Douglas and Hargadon (2001) contend that when we read, we employ familiar patterns of experience and understanding to help us make sense of an event within the narrative. We use expectation from our lives and the other narratives we have read. They further argue that 'the aesthetic remains largely immersive as long as the story, setting, and interface adhere to a single schema' (2001: 158). Douglas and Hargadon do not make clear how the narrative schema and interface schema could be made as one, but in supporting their general point, I argue that workings of narrative and of interactivity need to be tightly integrated and remain within *their own* familiar conventional parameters. If both narrative *and* interface are unsettling and unfamiliar, this may lead to the total failure of immersion and, thus, quitting out of the reading experience altogether. Douglas and Hargadon point out that

> *interactive games fulfil their promise as immersive when they offer us an obvious schema for narrative structure and interface, and when they offer us predictable, tightly scripted interactions. (Douglas and Hargadon, 2001: 159)*

The problem for writers of hypertext is that they may well want to follow neither predictable narrative structures nor familiar interface designs, leaving the reader with no ready schemas to draw upon. However, writers may have to hold back, drip feed the challenges at a rate readers can cope with, as several of my participants said. Assuming they find ways of harmonizing the schemas of the narrative with the schemas of the interface, then hypertext fiction will be able to generate immersive experiences, as my participants' comments on *The Virtual Disappearance of Miriam* suggest.

The key to unlock states of immersion and/or engagement may well lie in the concept of flow used in play and game theory, as elucidated by Csikszentmihalyi (1997, cited in Sutton-Smith, 1997: 185). Flow is that finely balanced condition in the player where effort and reward are so closely matched that the reader acts seemingly effortlessly, though in fact highly absorbed through the game, using cognitive *and* motor skills. Support for flow

can be found in many fields of research (Pace, 2003), but the concept is not commonly used in the discussion of the experience of reading hypertext fiction. However, Nell's (pre-hypertext) ludic reader is one who is beautifully captivated by the narrative, with no conscious awareness of the effort of reading: this is surely a flow condition. I argue that, if we accept the interface as an integral part of hypertext fiction's nature, flow should be acknowledged as a desirable state for hypertext readers. It may be that we need to allow 'play' back into reading.

Many hypertext fictions do not yet deliver a flow experience, but it is possible, and *The Virtual Disappearance of Miriam* and *The Mobius Case* are just two examples of this. If writers of hypertext fiction can balance their innovative narrative structures and interfaces with sufficient reference to conventions (schema) familiar to readers, then flow may begin to be a readily achievable state and then hypertext narrative itself will begin to flow more freely.

We now come to a description of the method used in my empirical study. The study continues as this article is being written, and systematically presented data will be available early in 2007.

Empirical Study

The Research Philosophy

Literary Studies

Since this study is concerned to find out how the reader of hypertext fiction enjoys the experience of becoming 'lost in a digital book', and since the vast majority of material in the literature approaches hypertext fiction from a literary standpoint, I looked for a methodology from the literary world, and particularly the reader-response field, where the reactions of the ludic reader are of significance. The definition of 'literature' is modified by the very subject matter of this study but, nevertheless, hypertext fiction for my study is created by writers, and received by readers as a form that has to be read, even if multimedia elements are used in varying degrees.

Work by Fish (1970, 1980), Gee (2001), Holland (1975), Iser (1972, 1976), Miall and Dobson (2001), Miall and Kuiken (1995, 1999), Nell (1988), and Richards (1924, 1929), in particular, was reviewed and interpreted in order to devise an empirical methodology to record reader response to hypertext fictions.

Interactivity, and Usability Studies

However, the reader of hypertext fiction is also a 'user' (Livingstone, 2004; Murray, 1997b), insofar as he/she has to operate the interface before the narrative can come to life in the imagination. The interface cannot be ignored (Wenz, 1999), by the reader, or by the researcher.

Livingstone argues that users of new media products 'are simultaneously interpreters of the media-as-text and users of the media-as-object' (Livingstone, 2004: 84). Livingstone also contends that 'new interactive technologies put ordinary people's interpretive activities at the very centre of media design and use' (Livingstone, 2004: 75).

Usability studies from the field of human-computer interface design (Ebling and John, 2000; Kjeldskov et al., 2004; Nielsen, 1989; Nielsen et al., 2002; Pace, 2003; Petersen, 1998; Wright and Monk, 1990) were therefore modified, and combined with understandings from reader response research, in order to investigate hypertext reading.

Observation of Readers' Activities Using 'Think-Aloud'

Various ways of gathering and recording data from reader-participants were considered: in literary studies, Holland (1975), Miall and Dobson (2001) and Nell (1988) have used observation to get at the reader's experience of literary fiction, but without consideration of the human–computer interface. In the field of interface usability testing, 'think-aloud', an observation technique which records participants' ongoing comments, is a standard and key method (Kjeldskov et al., 2004; Nielsen et al., 2002). Ebling and John (2000) and Kjeldskov et al. (2004) contend that this method gathers more valuable data than any other. I therefore reviewed and adapted several think-aloud studies for my own objectives:

Protopsaltis and Bouki (2005) used think-aloud as the sole method in their study of hypertext document reading comprehension, a study which included a consideration of the effect of hyperlinking on reading strategies.

Wright and Monk report that in their think-aloud sessions, 'the users are told to think of themselves as co-evaluators of the system' (1990: 55). Wright and Monk ask occasional questions of the user to 'find out about their understanding of the operations available, their interpretation of screen and so on' (1990: 55).

In her study of reader reaction to Bill Bly's hypertext *We Descend*, Gee (2001) allowed readers time before reading the narrative, to familiarize themselves with the idiosyncracies of the interface.

So, a 'think-aloud' observation of readers' initial reactions to 'using' the hypertext forms the first phase of the study. These sessions are audio-taped for later transcription and analysis.

Free-Reading

The think-aloud observation of readers was considered inherently obtrusive in the context of a study of aesthetic appreciation and, thus, this form of data collection on its own would be inadequate. Furthermore, usability studies do not conventionally concern themselves with the user's appreciation of a narrative structure and an aesthetic experience (Gee, 2001). Other reading studies (Miall and Dobson, 2001; Nell, 1988) provide readers with a distraction-free laboratory environment in which to read, but this was considered too artificial for the research objectives of this study.

Therefore, adapting Gee's (2001) 'free-reading' phase, my study allows the reader to 'take the fiction home' and read at will over a specified period, in an environment of the reader's choosing.

Potential Problems with Free-Reading

There is no way of monitoring what kind of 'effort' each reader was prepared to give to the reading of the selected piece, and it is freely acknowledged that the free-reading time

may actually be a very short amount of activity indeed, or a complete exploration of the hypertext in question. This actuality of individual reader behaviour is of course significant and, although it presents some awkwardness in terms of standardizing the test, it also allows readers to truly interact with the hypertext in their own way. The questionnaires and post-reading discussions described below are able to get at these individual differences and uncover the possible reasons for them.

Questionnaires

Several of the relevant empirical studies have used post-reading questionnaires, helping to reveal patterns of user behaviour and themes in readers' concerns (Gee, 2001; Kjeldskov et al., 2004; Miall and Kuiken, 1995; Muylle et al., 1999; Nell, 1988; Wenz, 1999). These uses of questionnaires bridge the critical and methodological 'divide': for example, Miall and Kuiken (1995) are interested in response to literary features within writing, Gee (2001) is concerned with responses to interface ergonomics.

In this study, questionnaires are used to aid the readers to reflect upon their reading experience at a point close to the actual reading. It is considered that if no reaction were to be recorded until the discussion group phase (see 3.5 below), immediate reactions and impressions might be lost. Furthermore, as used by other researchers, the questionnaire is a means to structure the subsequent discussion group. From the questionnaire data, key themes of concern to readers could be ascertained and probed more deeply.

Discussion (Focus) Groups

Nielsen indicates that 'focus groups . . . can help you assess user needs and feelings both before interface design and long after implementation' (Nielsen, 1997). Discussion groups also gather deeper qualitative data on patterns of use revealed through the observations, and further explore readers' feelings about the stories they read. This 'wrapping up' of the previous three phases allows me to explore key themes raised by the participants themselves.

Participants are encouraged to discuss whatever they view as important in their own experience, but the researcher is able to keep the discussion 'focused' because the questionnaires have already been received and analysed, providing thematic structure for the discussion.

Procedure

1. Readers are asked to begin to read their hypertext and are prompted to give 'think-aloud' responses to the interface as they use it for the first time.
2. Following observation, readers are asked to read the hypertext 'freely' in their preferred reading environment, given the need for access to a computer.
3. Participants are provided with a post-reading questionnaire via email, which investigates various aspects of the free-reading experience.

   Elements of imaginative engagement in the story (Brooks, 1984; Iser, 1976; Miall and Kuiken, 1995, 1999; Nell, 1988) form Part 1 of the questionnaire.

Aspects of interface design (Barrett, 2000; Ebling and John, 2000; Gee, 2001; Kendal, 1998; Kjeldskov et al., 2004; Nielsen, 1990; Nielsen et al., 2002; Pace, 2003), form Part 2.

The third section looks for connections between the two by focusing on the particular structural and operational qualities of hypertext (Bernstein, 1998, 1999; Douglas, 1994, 2000; Douglas and Hargadon, 2001; Jackson, 1995; Joyce, 1987; Kendall, 1999; Murray, 1997a, 1997b, 2001).

4. At a pre-arranged point, given that everyone in the participant group has read their texts and returned their questionnaires, a discussion session is organized.

Reader Sample

The sample for this study is confined to those readers with a keen interest and appreciation of print fiction. All readers should be competent ludic readers, using Nell's definition (Nell, 1988). A competent reader for Nell is one who has read enough fiction to react to the various narrative cues and plot conventions. The participants so far have been drawn from the student body, colleagues, and three local reading groups.

This sample is then 'stratified' into two sub-groups (Bertrand and Hughes, 2005): those readers who are experienced PC and internet users, i.e. regular PC users, familiar with browsing, linking and multimedia, and those who are 'novice' PC users (Ebling and John, 2000), i.e. who use the PC for emails and occasional information seeking.

The reason for differentiating between experienced and novice readers is that experienced users might be more prepared to explore and go 'non-linear' while the 'novice' might be more rooted in the linear conventions of print and not readily apply interactivity to a narrative reading experience (Douglas and Hargadon, 2001; Murray, 1997b). It was anticipated that patterns of difference between the two sub-groups will emerge, (Murray, 1997b; Wenz, 1999), but also patterns of similarity: from these patterns, new understanding of the act of reading hypertext fiction will be gained.

At the time of writing this article, the study has involved 32 participants, but will eventually sample 40–45 readers.

Text Sample

Narratives were chosen that display the features of novels, e.g. plot, characters and character development, thematic ambition, dialogue (Baldick, 1990; Forster, 1927; Watt, 1957). This set of criteria alone could include some interactive games, and it is not the intention here to dismiss games as narratives; however, to be included in this study, 'hypertext fiction' always includes significant sequences of writing, and therefore reading. The reader is in the role of audience, a participating audience certainly, but not a player.

A 'continuum' of hypertext styles has been presented to readers so that some sense of the comparative effects of the text/interface/multimedia balance could be gained:

- *afternoon, a story* (1987, Eastgate Systems) by Michael Joyce: the 'classic' hypertext novel is text-only, and uses Eastgate's Storyspace interface, on CD.
- *L0ve0ne* by Judy Molloy (1994): a text-only narrative on the internet.
- *These Waves of Girls*, by Caitlin Fisher (2001, http://www.yorku.ca/caitlin/waves): a

mainly textual piece on the internet, with graphic elements and some facility for sound.
- *The Virtual Disappearance of Miriam*, by Martyn Bedford and Andy Campbell (2000, http://www.dreamingmethods.com/): a Flash-driven multimedia narrative for the internet, with a balance of text and animated graphics.
- *Of Day, Of Night* by Megan Heyward (2003, Eastgate Systems): a multimedia mix of film, graphics, and written text, which runs from CD as a Director application.

Conclusions (The Future)

The empirical study around which this article is based is ongoing: more full and systematic analysis of data may reveal further core threads for readers' reactions to the selected pieces. The following conclusions are, therefore, themselves works in progress, based on the data gathered so far. I believe nonetheless that some key principles have been established and reinforced by the study to date.

Reader Expectations and the Digital Book

Because hypertext fiction is neither book, nor website, nor game, readers are very likely to find that whatever their 'background' or preferences, their expectations will not be met in full by hypertext fiction. My data reinforce and extend what Douglas and Hargadon (2001) have to say about schema theory and hypertext: readers will use schemas, but schemas will also be actively distorted and frustrated by hypertext fiction, unless writers accept that they must conform, in some aspect of the story structure or interface design, to familiar conventions. Where the operation of the interface does not follow any set of conventions for interactivity or navigation, the effort of learning the author's particular language of interactivity as well as a new kind of narrative structure is too much. As one reader commented after reading *Of Day, Of Night*, unconsciously supporting the importance of flow, 'It's a kind of effort and reward balance . . . I think, for all of us, we felt it was a bit lop-sided'.

The Interface

The form of the digital 'book' is often so unfamiliar that readers are discouraged from venturing far into its 'pages', and the interface is a crucial and central element in the likely success or otherwise of interactive narratives: good designs can orientate readers, offer them meaningful linking structures, and provide the satisfactions of narrative growth and closure that readers expect. Writers need to 'help' readers to travel the 'book' space and the narrative, by offering interface tools that can guide and position the reader in his or her journey. The readers in this study have offered the following suggestions for interface elements they would like to see:

'Page' marking devices were needed in all the pieces read; navigation tools must allow as much control as possible for readers, particularly being able to go to any page at will, as a reader can with a printed book; navigation tools must not be obscure (as in *L0ve0ne*) or hidden (as in *Of Day, Of Night*); visual material must be part of the story

being told, not simply decoration: *These Waves of Girls* was criticized heavily in this respect by the participants in its group.

Disorientation

This was a serious problem for around 90 per cent of my participants in all but *The Virtual Disappearance of Miriam*. *Miriam* is essentially linear, and even though the author offers a menu of chapters at the start, it is clear what the 'conventional' order would be, and it is clear where the story resolves into an ending. In the case of all the other hypertexts tested, essential orientation devices were omitted or ineffective, and my participants, whether expert users or novices, were unhappy that plot had seemingly been replaced by abstraction. For example, of *These Waves of Girls*, one participant, echoing the sentiments of the whole group, said, 'Even if it's a difficult novel you get to see the structure that the author wanted . . . here you can't do that, there is no structure.' *afternoon*, *L0ve0ne* and *These Waves of Girls* were all criticized strongly by the readers, both expert and novice, for not developing an intelligible or dramatically involving story. The main issue was that linking in all these examples takes the reader to places not thematically or dramatically connected to where they were before. However, if we consider the more positive reactions to *Miriam* and *Of Day, Of Night*, and the overall willingness of my readers, even the sceptical ones, to explore linking structures, there is evidence that linking can work, without disorientation setting in; whereas critics such as Birkerts (1997), Miall (1998, 1999) and Miller (1998) argue that it is inimical to imaginative reading.

Immersion and Flow

Overall, although a few readers said that they enjoyed exploring and solving the 'puzzle' that the hypertext presented, they were unable to become 'lost in a book' (Nell, 1988) because the interface and/or lack of narrative thread defeated their effort to engage with the story. In the case of *L0ve0ne*, the interface was easy for the readers to learn, but the links disrupted the narrative so much that not one of that reading group found the story; in the case of *Of Day, Of Night* the interface prevented half of the group from actually finding large sections of the narrative, though for those who did manage to fathom out the interface, an enjoyable short narrative was experienced. In the case of *These Waves of Girls* and *afternoon*, the interface's oddities, combined with poor narrative sequencing via hyperlinks, almost completely destroyed reading pleasure, with only one reader, out of the total of 12 who read these two pieces, finding any reading enjoyment in the experience.

There is still cause for optimism however, in the cases of *The Virtual Disappearance of Miriam* and, to a lesser extent, *Of Day, Of Night*: readers commented that they enjoyed the story, felt interested in the main characters, and liked the interactivity, though they did have criticisms of specific elements of the interface. The difference between these two stories and the others mentioned above is that *Miriam* and *Of Day, Of Night* do deliver a narrative thread that the reader can find without the effort–reward ratio being skewed towards effort. Immersion is more likely and flow possible when the story develops in balance with the interactivity.

Hyper-Links

Even those participants who were keen and open-minded about hypertext were easily frustrated when linking seemed baffling, pointless, or just random: Miall (2003) notes this effect in his analysis of *These Waves of Girls*. Of the same piece one of my participants commented, 'How much are you supposed to invest in the links? At one point I just gave up and started clicking anywhere.' The important new information from my empirical study is that readers do *want* the linking to work: nearly all of my participants commented in various ways that they were actually frustrated that the hyper-linking did not deliver as interesting an experience as they had hoped it would. But crucially they could envisage that it had the potential to do so. What my participants overwhelmingly want is hyper-linking that moves the story on in an intelligible way, as Kendall and Réty (2000) argue, or which adds value to the main narrative strand, for example offering characters' back-stories. There is no reason why authors cannot design their linking structures so that the link always takes the reader to a place that has a meaningful connection to the jumping-off point.

Closure

In my study of five hypertext fictions so far, only *The Virtual Disappearance of Miriam* delivered satisfying closure to the reader participants. *Of Day, Of Night* did offer an end point, but participants commented that the author could have done more with the material she had begun to develop, and thus closure was not as fulfilling as it might have been. It is interesting that across the five hypertext fictions studied to date, all but one of my participants wanted their sense of completion to be designed by the author. It does not have to be a happy ending, or a completely resolved ending, but they want to know that they have experienced what the author wanted them to experience in terms of the material on offer. Age of reader and experience of interactive media made no difference in this regard. There is not room here to discuss the deeper implications of this apparent need in my participants, but it strongly suggests that writers who wish to please 'ordinary' readers will have to find ways of offering something interactive and non-linear, combined with something essentially Aristotelian.

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